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G.Pellegrini  
curatorship

**DAVID AND MATTHAUS**



**De-Design**

**Environment Landscape City**



De-*Sign* Environment Landscape City

Department DAD  
Polytechnic School of Genoa

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***De-Sign***

Environment Landscape City

Giulia Pellegrini (curatorship)

Multidisciplinary contributions

**De-*Sign* Environment Landscape City  
International Drawing Study Day**

Genoa May 10, 2017

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Polytechnic School of Genoa

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## **Introduction**

*The International Drawing Study day \_10.May.2017\_ De-Sign Environment Landscape City, the third meeting on Drawing in Genoa at the DAD Department Architecture and Design of the Polytechnic School aims to look at the “draw” as a transdisciplinary language for all those intentions, whether they are fact-finding surveys, planning or descriptive aspects of the different areas of living and human life. This symposium deals with topics related to the description by surveys, photographic images and their analogue and digital elaborations of architectures, urban and territorial environments, themes related to design, to conservation, to the use of tools to deepen topics linked to reading, to comprehension and to representation of urban space and territory aimed at design, communication, conservation and restoration.*

*Complex and articulated systems capable of incorporating, reasonably, types, shapes and codes, adapting them to the evolution of the territory and aiming to identify generative and transformative rules that help to carry out a basic descriptive task as a structured premise to any design approach. Different topics are presented in different prospects.*

**t1 Survey and Representation of Architecture and Environment** through photomodelling techniques for the conservation and promotion of cultural heritage, analytical comparison between photomodelling and laser scanner to identify the geometric matrices on which the planners base the project of the building or the generative drawing and digital optimization in order to describe the architectural form and also nature/organicism vs architecture/geometry

**t2. Drawing for the Landscape** through the participatory planning for the landscape and governance of local resource and its representative tools and applications; environmental psychology approach to urban identity that produces a cognitive mapping of the space and builds a shared image of it, to investigate the spatial and social perception of the territory from a bottom-up point of view and the expressive and common language to represent the visual and symbolic identity of the urban space; the capability of the drawing to recreate those components that define a specific place, and also its competence to synthesize an idea or a project, focusing on everything that modern architecture has been able to transmit about the concept of the site itself; examples of contemporary representation of the landscape, such as the drawing is used by architects, both traditional techniques and new information technology, to analyze the context and to express design ideas. **t3. The drawings for the project: tracks- visions and pre-visions**, projects of re-use, with various facets of sign and design, with the historical treatises compared to the actual practices and to the redrawing of suburban boundaries.

**t4.Margins: the signs of memory and the city in progress** where the multiplicity of borders in urban planning and landscape has seen through pictures and draws, a sort of lens to illustrate changing configurations of the social and political contexts.

*Landscape's perception is linked to historical portraits and to literature. The research focus on the identification and comprehension of the characteristic signs, also through the drawing of the topological space and of the architectural environment.*

**t5. Visual Culture and Communication: from idea to project**, with papers that highlight the issue of communication through images linked to territorial identity where representation points out how the complexity of the sites, their many vocations, their increasingly diversified use that can be expressed through mild and mutants signs, available to “light” but significant modifications. **t6. Architectural Features** highlight principally parametric and architectural orders and dynamic configurations, **t7. The color and the environment** are considered through different point of views, from the chromatic identity and the plan of color; to the national and international approaches, to the suggestions of colored architectures and finally to Street art with transformation of the visual and perceptive identity of the city.

**t8. Perception and territorial identity** deal with city brand, art and perception for resilient cultural cities, signs and drawings for design and signs of the past into the changing, from territorial identity to visual identity. Drawing and perception for rural landscape and the parametric representation for the analysis of visual perception in motion put into evidences the various environments’ peculiarities. **t9. Iconographic Cultural and Landscape Heritage: art, literature and design effects** with the short form of communication in promotion and the enhancement of cultural and landscape heritage, the presence of the past in contemporary design processes and the study of the treehouse as iconography and cultural phenomenon.

**t10. Signs and Drawings for Design** describe the sign as a mark of nature design through the geometrical analysis of design artwork and the paradigmatic actions for the construction of models as tools of representation just as the study of tessellation and polyhedra as innovative path of drawings for the project. **t11. Advanced Representation** through optimization and evolution in architectural morphogenesis, augmented reality, virtual reality and mixed reality.

An important contribution is by architect Gianandrea Barreca with his *Lectio Magistralis: Modernity in transition. Reflections about the relationship between natural elements and architecture.*

Giulia Pellegrini



## **Modernity in transition** **reflections about the relationship between** **natural elements and architecture**

The theme of the relationship between natural and artificial elements, within complex urban contexts such as those we live in, and more generally of the relationship between nature and culture, is a topic that has long been present in the debate and in some way in Architectonic practice.

In the last few years, however, this theme has taken on interest and significance that outlined the simple disciplinary theme and that opportunistic associated with the presence and necessity of nature in the city, and interest and involve a wider spectrum of ambits.

I do not think here, in the brief context of a lesson, and from my knowledge, mainly built on the experience of planning and architecture practice, to be exhaustive, or even to justify the outcome of some projects. Instead, I think, because of their experimental nature, they are being offered to the verify of the critics and then to that of the time. To expose and to emphasize the interest of this theme I will try to use some words and their meaning as guidance and orientation.

The first word on which I would like to dwell on and reflect is “nature” that in the Italian language vocabulary is defined as the set of all things and all beings belonging to a whole or even the set of innate and permanent qualities that make a human being what it is, and for transposition, too, we can say, of a place. In the definition, therefore, there is no distinction between living things or human beings, but rather we can refer to the coherence of the whole, to the balance and to the relations between the parties, it could thus also be said of the prevailing rules and characters that determine a set and regulate evolution and change.

I think I can say that when the first men abandoned the caves, an admirable architecture able to conserve water and heat, to build a shelter more suited to their new needs, that inevitably irrevocably modified the previous equilibrium. They have begun to overlap to the previous one a new system, a new order with its own rules, a kind of new determined and built “nature” around the idea of architecture and with it the idea of culture. In opposition to that of nature.

Over time, this new system of rules, this distance, has become ever greater and more unbridgeable, the difference is more and more defined, the direction of development of one respect to the other is radicalized, so that it was soon evident that between nature and culture, between nature and cities had become an infinity of thresholds, barriers and boundaries that kept them distant and separate. In their interior, they have evolved alternating revolutions to linear evolutionary processes, in a coherent, natural way. In fact, “natural” means “nature that is part of nature or is referred to it, conforms to it, that it is no not artificial.”

It would seem clear and obvious that, being the city predominantly made of artificial elements, it could not carry anything of a natural nature. It is therefore evident that the city and its transposition of the architecture that composes it, borns as a representation of a culture opposed to nature.

But two other issues are also true. The first thing that the city, if read from within, can be defined as a natural system with its own laws which govern its development and balance it. This leads to the consideration that the city itself is a natural system in which, for example, the city maintains and perpetuates its variety through repetition and hybridization of the types in the same way the nature does with species.

The second is that although divided by thresholds and boundaries, albeit governed by different evolutionary logics, there have been passages that have marked, on the contrary, the story of the relationship between architectures in nature, so today, apparently in opposition.

An example is the presence of gardens inside the walls of medieval cities, which lay on the edges of the built between this, and the walls were hybrid areas of interface between different and separate worlds. Or the erection of patrician villas systems outside the walls or rather when from the nineteenth century many cities have cut down the walls, producing the porous and widespread city we know, heterogeneous and broken, but at the same time let nature enters with its breakthrough innovative force. The often enclosed and private gardens have become extensive parks, enriching squares and tree-lined avenues, the bourgeoisie houses, enriched with terraces and balconies to meet a new decoration need, soon become support for a home green linking the interior of the House, the private dimension, with the collective external one. Further on, the pilotis ground floor house and the top garden roof complete this slow conscious, self-built and endangered green revolution.

Thus, in a long time the relationship between architecture and society is defined as a sort of new idea of landscape, a hybrid landscape is no longer only to be observed through the texture and the support of architecture but self-contained and free to take over the architecture itself to become the landscape architecture. From the green courtyards to the garden roofs, through the vertical green facades, elements of nature become increasingly present in a hybrid dimension in which city and landscape architecture mix in the construction of a new and hybrid subject that certainly puts in crisis the identity and the disciplinary integrity of architecture. This integrity is also attacked by other factors of instability and fluid condition of our time.

It is easy to see how often the same techniques and intentions of architecture are directed towards a consistency in which the ephemeral condition is not seen as a negative element but as the reason and aim of design action itself. It is as if it were no longer required for the architecture to be lasting and to remain, but rather to make itself a skeleton and structure on which to locate moving signs that are more fragile and less durable but not for that of less symbolic and communicative value.

Moreover, the virtual imagery, and in particular the moving one, now pervading our condition, seems to have eliminated the interest that people have had for a long time for forms and their representation. The forms, the expression and the synthesis of an idea, suggest, in contrast to motion pictures, something static, even authoritarian, which in some way excludes the impossibility of enjoying an experience. The fineness of shapes like that of their products and of a corresponding iconographic system of signs and symbols around

us seems to have no reason to exist.

After Zaha Hadid's fluid and moving architectures that have for a while spotted colleagues and students and beyond the aesthetic and refined texture of Herzog's and de Meuron's skins architecture it seems to abandon his interest in the city as we have known and studied for a long time. It is rather a moving system whose landing is still unclear but which certainly tends towards a landscape architecture, towards a fragile and ephemeral transition-changing architecture, willing to hybridize not so disciplined but rather meaningful.

While it is true that, as the city that has expanded beyond the boundaries of the walls has never been able to produce symbols and communicate as clear as the ones it produced and are at the base of the compact city, it is equally true that nature which has entered the city today is still unable to be strong and lush, alive and capable of reproducing itself as it is in its natural context.

The presence of natural elements that hybridize the buildings or are used together with so many artificial elements are perhaps the tangible sign of a fragile and fluid condition that cannot settle into disciplinary rules and shared shapes capable of determining long-lasting symbols, but it is at the same time the most obvious sign of a necessity to renew the language of architecture that can't manage and be an expression of its time.

But it is precisely the lacking development of reciprocal porosity between nature and artifice which makes this condition interesting and may be the engine of a less technical and more symbolic reflection of the contrasts between nature and culture and at the same time more poetic than the relationships between human being and nature.

This difficult task of giving shape to the new relationship between built space and natural dimension, after the roofs of gardens, is certainly on the facade that with its symbolic power is the true frontier of experimentation where it gives meaning to the ephemeral and experiential contemporary condition. On the contrary, it is, as is already the case in large part, to happen to the world of forms, a static expression of an idea, to take refuge in technicalism and to become only a representation of norms and rules instead of giving shapes and renewing the poetics of living.

Gianandrea Barreca



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## **Photomodelling technique and dedicated software. Innovative representation of Cultural Heritage.**

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### **Abstract**

In relation to the latest earthquakes and disasters, the centrality of survey and representation of heritages are some of the most important methods to protect history, to preserve the assets of memory, culture and collective identity. In this scenario photomodelling, one of the contemporary frontiers of research applied to the conservation of Cultural Heritage, leads to the creation of 3D models starting from the simple acquisition of photographs. Laser scanner and structured light 3D scanner are two examples of the several measurements techniques proposed for the digitalization of reality. This new technique is extremely economical and fast. The aim of the research is to understand the full potential offered by photomodelling and dedicated software, analyzing the reliability of each instrument, with particular attention to freeware ones. An analytical comparison between photomodelling and structured light 3D scanner, tested in the survey of the “Doccione di fontana” of Galleria Nazionale dell’Umbria in Perugia, guarantees a first measure of the reliability of instruments. Two different criteria explained the comparison between 3D models, a spatial one and a surface one, comparing reference and test meshes and extrapolating data relating to the distribution of deviations between elements that compose models. Photomodelling is a suited technique, capable to duplicate and preserve the historical legacy, by promoting an innovative form of communication and spread of culture.

### **Introduction**

#### **Photomodelling for Cultural Heritage**

One of the most interesting aspects in the field of Cultural Heritage is the possibility to perform three-dimensional surveys, which allows the virtual reconstruction of the objects in a scenario with high level of details. Architectural survey had been contaminated by digital culture that has opened new frontiers and one of the most interesting results is the photomodelling. This procedure is recognized not only as a conservation tool, to promote the virtual tourism in museums, and as a teaching resource, but also for purposes of recovery, restoration and enhancement of Cultural and Environmental Heritage. The survey and the representation acquire an essential role in the protection of assets. Digital contents contribute to the development and accessibility of cultural information and three-dimensional representation becomes effective support, in order to document the status of the goods concerned<sup>1</sup>.

Photomodelling is a lexical neologism, combination of the words photography and three-

<sup>1</sup>L. De Luca, *Architectural Image-Based surveying, modelling and representation, Methodological reflections and research tracks*, in “Architectural Image-Based Modeling Web Portal”, 2009, p.1.

dimensional modelling. This technique can be considered as experimental<sup>2</sup>, based on the extraction of information from digital images. Through the common camera, the operator is able to extract spatial information of the elements present in a scene, acquiring multiple frames.

This technique introduces a new working environment, which enables the restitution of buildings, objects, archaeological finds, based on the integration between survey, 3D modelling and representation<sup>3</sup>. The incessant improvement and economic progress of tools mean that these new techniques are accessible to an incredible range of users. The digital camera replace expensive devices such as laser scanners or 3D structured light scanning systems and open source software and freeware ones come up beside the commercial products. During the last years, these techniques are having great success in the field of conservation and enhancement of cultural heritage, proving to be one of the major breakouts of passive detection. In fact, photomodelling is the result of the digital revolution that influenced all the artefacts of our culture, from images to tools for interpretation and design, and it can be considered as a development of photogrammetry<sup>4</sup>.

The great advantages are therefore tied to the expenses, extremely circumscribed, to its application to solve accessibility problems, and to the possibility to obtain detailed models. In particular, the perceptive aspect of a 3D model has extremely significant results, being characterized by a mapping purely corresponding to reality. The main disadvantages of this procedure are tied to a deep dependency on the environmental survey (Fig.1), strictly referring to the environmental light<sup>5</sup>.

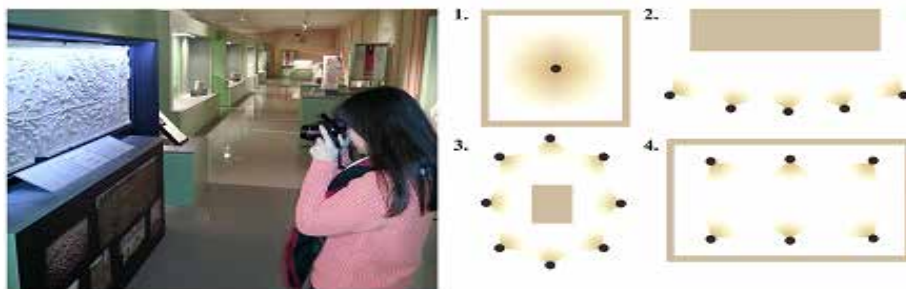


Fig.1 Photographic survey in the Archaeological Museum of Amelia (TR), Italy. Close environment, one point of view, multiple pictures like a 360° panorama (1.); a flat plate object, 180° pictures in front of the object, multiple point of view (2.); isolated object, 360° pictures around the object, multiple point of view (3.); close environment, multiple point of view and multiple pictures (4.).

In this scenario photography, the best representation of reality, acquires a new role: the process of photomodelling involves each frame of a set of photographs and each step of the workflow strictly depends on the photographic strategy and on the quality of images.

It is through a comparison that the correspondence between data is identified and the position of each pixel characterized by a colour that determines the texture of the model is valued.

Pixels represent spatial coordinates of sparse and dense point clouds, the realistic shapes that can sketch and generate a model (Fig.2). During the photographic survey, users have to evaluate parameters like the sharpness, the brightness and the contrast of the photos, particularly to obtain good results during the orientation of cameras.

The lighting of the scene has to be as uniform as possible: overshadowed parts or strongly

<sup>2</sup> M. Filippucci, *Nuvole di pixel. La Fotomodellazione con software liberi per il rilievo d'architettura*, in "DISEGNARECON", vol.III, 6 (2010), p.51.

<sup>3</sup> L. De Luca, *La Fotomodellazione Architetonica*, Dario Flaccovio Editore, Palermo, 2011, pp.19-30.

<sup>4</sup> M. Filippucci, *op.cit.*, p.51.

<sup>5</sup> *Ivi*, p.52.

illuminated ones could cause issues during the reading of information in the images.

For these reason it is also important to remove the flash. Users have to analyse the colour characteristics of the scene: objects with particular chromatic variations are better than aseptic scenes. The object must be accessible to the photographic survey entirely, from different angles as much as possible. The ideal plan for photographic survey is to take pictures, going around the vertical axis of the object at  $360^\circ$  for isolated one and  $180^\circ$  for flat plate one, at a constant distance from it and with the camera oriented between  $30^\circ / 45^\circ$  downwards<sup>6</sup>.

Photomodelling is based on the methodology of the Structure from Motion<sup>7</sup>, the calculation process that allows the geometry reconstruction of an object through the automatic collimation of points from a series of digital images. After the extraction of significant points, named features, well recognizable in three or more frames, the SfM obtains photographic parameters and crosses the homologous points on multiple images, finding the spatial coordinates of each point<sup>8</sup>.



Fig. 2 Sparse reconstruction (left) e dense reconstruction (right) of a bronze artefact of Archaeological Museum of Amelia (TR), Italy.

At first, the dedicated software align the various images in three-dimensional space, generating a 3D point cloud. The following step is the reconstruction of a triangular mesh, processed and textured, with a high number of polygons and a clear geometry of the models. The editing step is always necessary, like various elaborations of smoothing, decimation of the faces, closure of gaps, in order to make suitable the generated model<sup>9</sup>.

Photomodelling is different from photogrammetry thanks to the introduction of image or multi-image matching algorithms, which allow the complete three-dimensional reconstruction procedure in automatic<sup>10</sup>. The comparison between the pairs of frames is carried out by decomposing the photographs in a grid of small squares and founding chromatic analogies between them.

The calibration of the camera is automatic, as the reconstruction position of each picture in the space; for each key point the real coordinates  $x,y,z$  are obtained, materialized in three dimensions in a scattered point cloud, a cloud of low-density points (sparse reconstruction).

In the next step the sparse cloud is increased in a dense point cloud (dense reconstruction) thanks to the SfM dense-matching algorithms, developed in photogrammetry: the data relating to the position  $x,y,z$  of each key point are used to recognize and extract the coordinates of all the surrounding

<sup>6</sup> L. De Luca, *La Fotomodellazione...cit.*, pp.34-35.

<sup>7</sup> R. Szeliski, *Computer vision: algorithms and applications*, Springer Science & Business Media, Londra, 2011, p.339.

<sup>8</sup> *Ibidem*

<sup>9</sup> M. Pucci, *Prima che appaia il "divieto di fotorilievo": considerazioni sulla Fotomodellazione*, in "DISEGNARECON", vol. VIII (2013), p.2.

<sup>10</sup> G. Guidi, F. Remondino, *3D modeling from real data*, in "Modelling and Simulation in Engineering", C. Alexandru (ed.), InTech Publisher, 2012, p.74.

elements (Fig.3). The procedure of SfM, coupled to the algorithms of dense image matching, allows the reconstruction of the 3D geometry of a scene (Structure), identifying a set of sparse correspondences, and the positions of cameras (Motion).

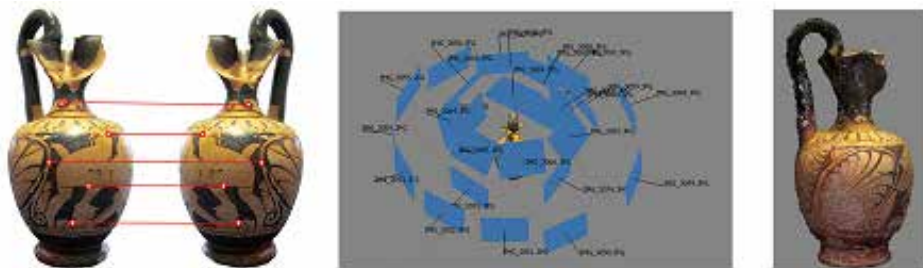


Fig.3 Matching: identification of homologous points (features) between each image.

From the operative point of view, photomodelling is executable through several programs that are often deeply dissimilar. This research aims to put forward the employment of several software available today with the aim to understand the potential of these tools. Software were evaluated by their time data processing, difficulty of use, accuracy and precision of results. The applications proposed are also divided into 3D web-service, open-source software and commercial software (Fig.4). Agisoft PhotoScan<sup>11</sup>, a commercial software, is the most efficient solution for completeness of results; the instrument has provided results during the experiments with the largest number of points. At the same time and with greater accuracy and precision Visual SfM toolkit<sup>12</sup> is the best solution in the reproduction of point clouds, in case of good surrounding conditions. This freeware tool is based on the Structure from Motion technique and it is able to reconstruct elements similar to Laser Scanner products, following a semi-automated workflow, starting from the alignment of frames until the matching between the homologous points. Arc3D<sup>13</sup> is a freeware tool, which allows users to upload images to an online web-server and to obtain a full three-dimensional scene. Arc3D, as Visual SfM, depends on the surrounding conditions of light and space of the scenario. Autodesk Remake<sup>14</sup> and Autodesk 123D Catch<sup>15</sup> are applications, the first low-cost and the second freeware, to get quickly and automatically a borderline result with an average level of details, to print or to be loaded and displayed on an online platform. Photomodeler Scanner<sup>16</sup> software, a commercial tool based on the principles of photogrammetry, permits to follow every step of 3D reconstruction, from the orientation of pictures, until the restitution of a textured mesh.

The purpose of the research is to know and test different types of software and identify among these the best solution, able to return as much as possible complete outcomes.

<sup>11</sup> <http://www.agisoft.com/>

<sup>12</sup> <http://ccwu.me/vsfm/>

<sup>13</sup> <http://www.arc3d.be/>

<sup>14</sup> <http://remake.autodesk.com/about>

<sup>15</sup> <http://www.123dapp.com/catch>

<sup>16</sup> <http://photomodeler.com/products/scanner/default.html>







	<b>Autodesk Reblake</b>		
	Time data processing	average	
	Difficulty	easy	
	Cost	396,50€ / year	
	<b>Autodesk 123D Catch</b>		
	Time data processing	fast	
	Difficulty	very easy	
	Cost	free	
	<b>Visual SfM</b>		
	Time data processing	average	
	Difficulty	average	
	Cost	free	
	<b>Aero3D</b>		
	Time data processing	fast	
	Difficulty	very easy	
	Cost	free	
	<b>Agisoft Photoscan</b>		
	Time data processing	average	
	Difficulty	average	
	Cost	160€ ca.	
	<b>Photodeler Scanner</b>		
	Time data processing	slow	
	Difficulty	difficult	
	Cost	2240€ ca.	

Fig.4 Dedicated software, different from time data processing, difficulty of use and costs.

## Methodology

### Experimentations on the reliability of instruments

After the photographic survey and the automatic and semi-automatic manipulation of the data, the 3D modelling procedure is the same for each software: the first operation is the creation of the point cloud. Several attempts are usually required, nevertheless the interpolation of the mesh will inevitably be imperfect, with cones of shadow or some other mistakes due to the setting of parameters as well as to the automated choice of the points selected<sup>17</sup>.

Once created the point cloud, models can be imported into a mesh processing and editing software. The creation of three-dimensional model is called “triangulation”: starting from the input data vertices, edges and faces are generated. The result obtained is a set of coordinates, which is converted into a polygonal surface<sup>18</sup>. The editing phase is fundamentally a cleaning process, a process of analysis and smoothing of the data, to make with carefulness in order not to lose any information and compromise the reading of the data. The software used for the meshing and editing were MeshLab<sup>19</sup> and Geomagic Studio<sup>20</sup>.

In order to provide scientific results, this research has considered an analytical comparison between photomodelling and structured light 3D scanner Creaform GO!Scan50<sup>21</sup>, tested in the survey of “Doccione di fontana”, Galleria Nazionale dell’Umbria in Perugia, Italy.

The reliability of the instruments is the centre of the matter: during the research, it was necessary to establish criteria of accuracy, referring to the scale of survey. Two different criteria, a spatial one and a surface one, explained the comparison between a reference mesh (the one created with structured light 3D scanner) and testing ones, extrapolating data relating to the distribution of deviations between triangular elements that compose models. Other experimentations have been proposed considering the surveys of several museum artefacts from the collection of the Archaeological

<sup>17</sup> M. Filippucci, *op.cit.*, p.56.

<sup>18</sup> M. Russo, F. Remondino, G. Guidi, *Principali tecniche e strumenti per il rilievo tridimensionale in ambito archeologico*, in “Archeologia e Calcolatori”, n.22, Edizioni All’Insegna del Giglio, 2011, p.187.

<sup>19</sup> <http://meshlab.sourceforge.net/>

<sup>20</sup> <http://www.geomagic.com/en/>

<sup>21</sup> <http://www.creaform3d.com/en/metrology-solutions/handheld-portable-3d-scanner-goscan-3d>

Museum of Amelia (TR), Italy.

In this case, three objects have been chosen and the test clouds have been compared with the ones recreated on Agisoft Photoscan, which provided results with the highest number of points.

The work was divided into three steps (Fig.5):

- acquisition and processing of images relating to dataset samples;
- elaboration and editing of 3D models;

alignment and comparison of tests with reference models.

A “measure” is a range of values, acquired with the purpose of controlling a process, perform the calibration of an instrument or allow the physical understanding of a partially known phenomenon<sup>22</sup>.

Referring to this assertion, the research considered two different methods of analysis (Fig.6):

- comparison of point clouds by a map that identifies the distance of each 3D data point;
- comparison of 2D profiles.

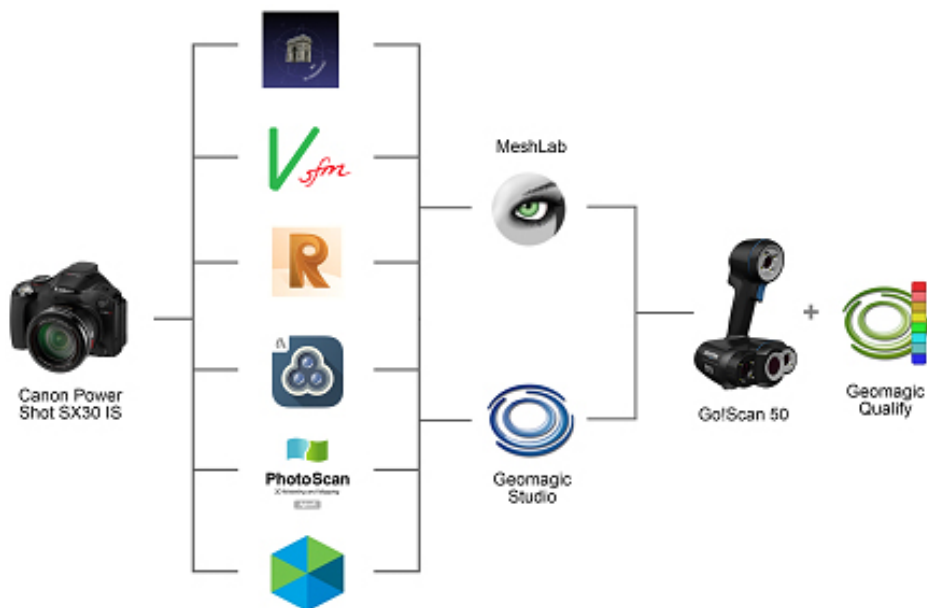


Fig.5 The workflow: from the photographic survey to the comparison between models.

The tests have been carried out by means of analysis algorithms, which provide variances and deviations between geometric entities in the space, using the software Geomagic Qualify<sup>23</sup>. The analysis was executed by setting a spectrum of 15 intervals of values between -1.0 and +1.0 cm deviation, the range of acceptability; the range between -0.1 and +0.1 cm is the optimum correspondences between the test and reference points. The software applies the colour map of deviations of each coordinate of the point cloud, distributed and projected on the faces of the 3D model. Observing the maps generated, it is possible to notice sometimes areas coloured in grey or missing parts of the models, which the software cannot compare.

The comparison involved the creation of 2D and 3D maps of the deviations, from which it was possible to derive a matrix in .CSV format of the spatial coordinates x,y,z of models points, test and

<sup>22</sup> G. Rossi, *Misure meccaniche e termiche. Basi teoriche e principali sensori e strumenti*, Carocci, Roma, 2010.

<sup>23</sup> <http://www.geomagic.com/it/products/qualify/overview>



reference ones and the values of the mutual distances for each pair of points.

By importing the matrix into MATLAB it was possible to process data in the histograms of frequency, the absolute values of deviations and the curves of the probability density.

The first comparison was between different instruments and the subject was a lion's head in italics marble, dating back to the middle of XIII century, in Galleria Nazionale dell'Umbria of Perugia.

Considering the graphic representations of 3D and 2D metrics comparisons between test models generated with photomodelling technique and the reference model realized with the structured light GO!Scan50 system, the distribution of the deviations is not uniform.

The colour map projected on the model created with Arc3D shows significant gaps: it appears incomplete and fragmented. An important result is obtained by comparison with the model developed by Visual SfM. Almost the entire front surfaces presents deviations within the range of -0.1 and +0.1 cm. The 3D map that presents major deviations is obtained by comparison with Autodesk ReMake. In fact, looking at the map, it is immediately evident that the distances for most of the surface and in correspondence with the front faces are in the range between -1 cm and -0.55 cm. The average value of the deviation between the test and the reference models is the maximum of the results (Fig.6-Fig.7-Fig.8).

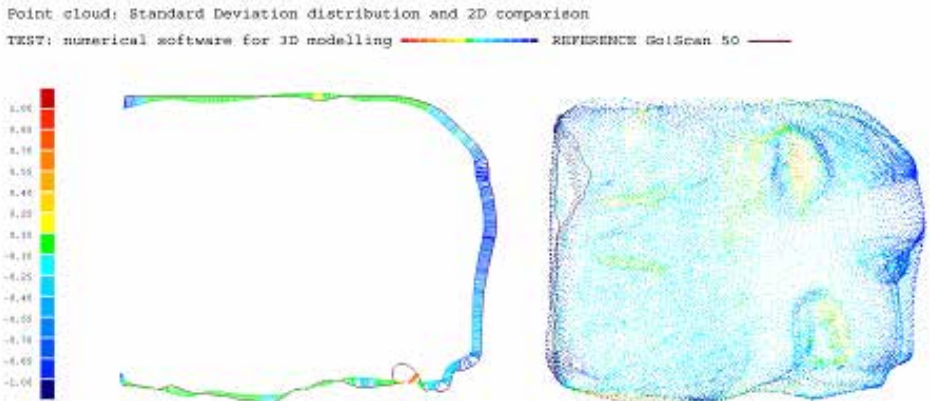


Fig.6 Comparison criteria between reference and test models: comparison between sections and between point clouds.

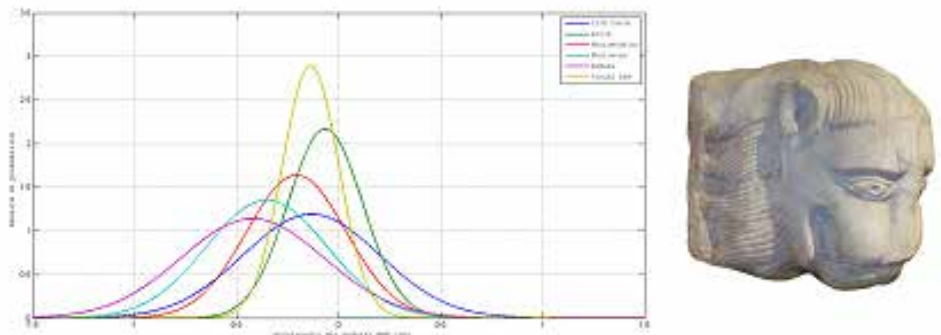


Fig.7 Probability density diagram (left); 3D textured model realized by Agisoft Photoscan (right).

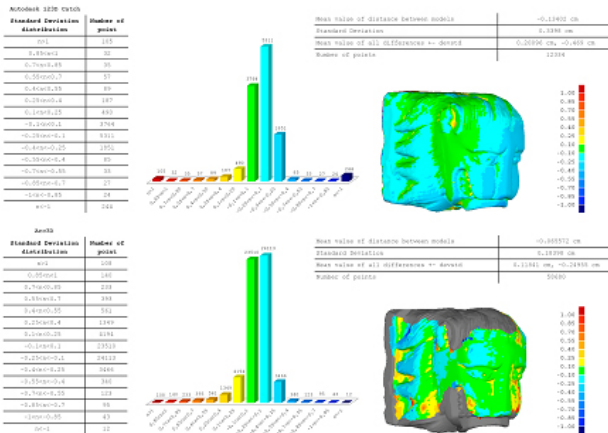


Fig.8 Maps of deviation distribution on surface of modes (Autodesk 123D Catch; Arc3D).

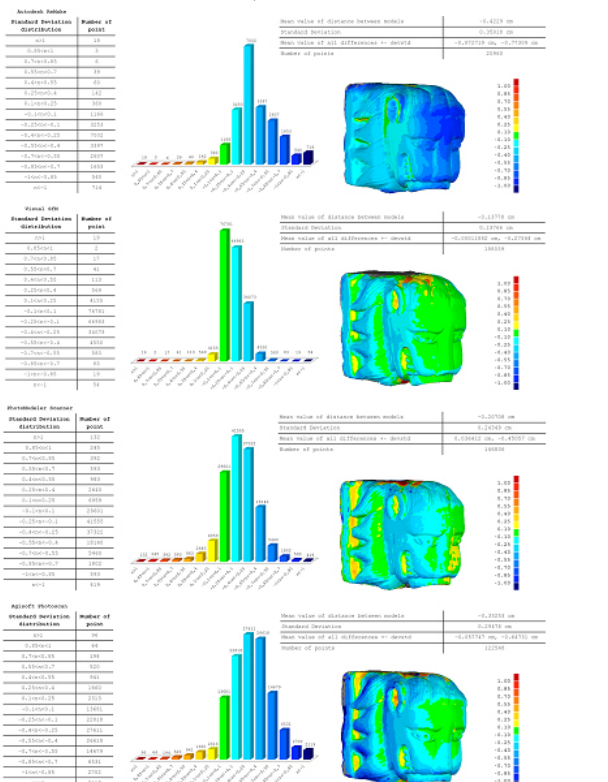


Fig.9 Maps of deviation distribution on surface of modes (Autodesk ReMake; Visual SfM; Photomodeler Scanner; Agisoft Photoscan).

Another test was the comparison between 3D models obtained from photomodelling software processing. Object of comparison have been three artefacts of the Archaeological Museum of Amelia, selected from more than thirty ones, of which was carried out the survey and 3D modelling, with the aim of recreate a real museum multimedia catalogue. The three artefacts are different in material, size and photographic survey. It was used a Canon PowerShot SX30 IS digital camera.

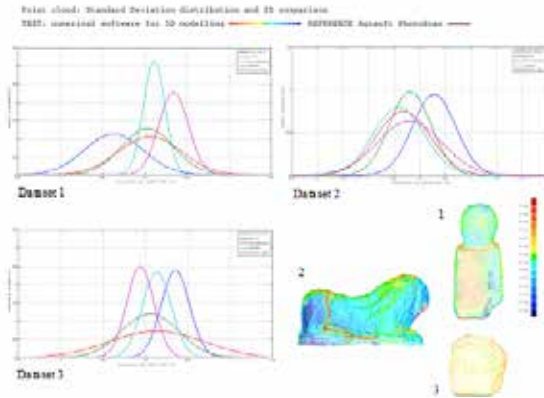


Fig.10 Probability density diagram of each dataset.

In the totality of the tests, the results of the comparisons highlight the lack of a complete software, suitable to solve every need, while preserving precision and accuracy of the models created. The best software is a compromise solution within accuracy and precision: Visual SfM is the one with a good balance between these parameters, with the generation of fairly complete and dense point cloud. Arc3D is a valuable software, referring to the accuracy of the results, but it processes inaccurate models and incomplete point clouds, tied to the conditions of the photographic survey. Considering the comparison between a reference cloud created with Agisoft PhotoScan and test ones processed through other software, it is clear that, referring for example to the model of Arc3D web-service and toolkit Visual SfM, despite the excellent results obtained in the measurement comparisons, models manifest in almost the totality of the evidence the most significant gaps. The analysis conducted shows not only the essentiality to undertake an effective campaign of photographic survey, but also the changing of performances, depending on the choice of the acquisition tool and the quality and accuracy of processing software.

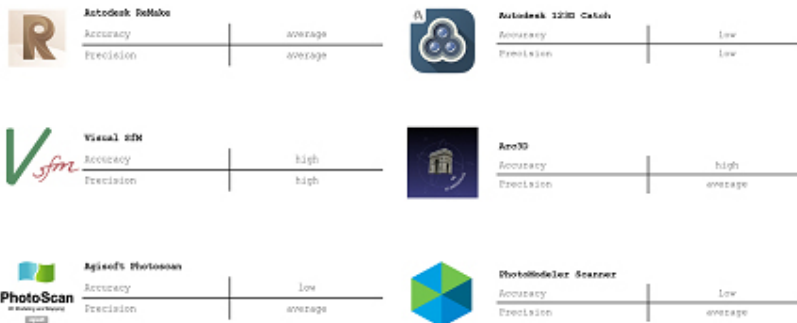


Fig.11 Accuracy and precision of each software.

## Conclusions

The research shows the limits and the advantages of photomodelling, which appears primarily as a technique able to integrate the operations of detection with excellent results. Compared with other techniques, as the laser scanning and structured light 3D scanning, if the surrounding conditions guarantee a correct process of application, photomodelling will become a valid economic alternative and an important integration tool. Dedicated software and instruments require a statistical interpretation whose reliability is confirmed by the results and experimentations, sustained by several comparisons between 3D models obtained from different sources. This research was marked by an experimental approach; after the interpretation of the obtained data, it was possible to collect a variety of information regarding the levels of uncertainty of the results, achieved by means of the comparison between instruments and software. The experience has shown that, regardless of the tools used, a specific software, which can meet the requirements of precision and accuracy of 3D models, doesn't exist. The web-service Arc3D and Visual SfM represent good compromises between these parameters. Both software are freeware, further evidencing the economic efficiency of this new technique. The broad scope of application considers photomodelling as an efficient, economical and fast technique in case of multimedia reconstructions for digitization and developments related to the virtuality of Cultural and Environmental Heritage and an instrument for any need of restoration. These experimentations want to be a hypothesis to make available the representation of objects. The aim therefore is to put innovative methods and tools in order to ensure authenticity and to preserve intact the historical memory of Cultural and Environmental Heritage.

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- Referring Web Page: <http://www.geomagic.com/it/products/qualify/overview>

## **Transformation of the Color Component in Urban Environment and in the landscape of Genoa in the most representative spaces**

From Ripa Maris, waterfront front and in the city overlooking the sea, to the most representative urban environments of political, religious and social life

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### **Abstract**

The transformations of the historical cities are carried out at different scales or urban artifact reading levels, according to the growth stages sometimes homogeneous, sometimes with substantial processing or change of the road configuration, of the lots, down to individual building structures, in relation to the fundamental stages of civil and cultural development.

In these phases, the color component is fundamental in the succession of buildings transformations: styles, materials, proportions and composition of buildings, clearly legible often in opposition or coexistence of different ages and style artifacts, in defining the vertical surfaces, which are not only stone or ceramic materials, but also and especially the colored plaster, the painted facades.

### **Introduction**

The reading of the most important parts of the ancient city therefore passes through this attention and study of transformations in the chromatic and decorative components, it becomes crucial element of reconstruction of urban development phases, following sometimes even the smallest clues, or individual episodes of painted facades, or parts of them.

In addition, this also entails a dramatic change in the image of urban spaces, and of their perception, as well as painters and designers identify who represent this component, just through the drawing and the color of architecture and Urban environments, or with the landscapes with which the city is presented to the traveler.

### **Methodology**

The method of color analysis of the city in its various forms is to consider the most important historic spaces of the city, comparing historical iconographic documents: drawings, prints, paintings, and especially surveys, to the present state, to verify the permanence today, and the state of conservation, especially for the purpose of knowledge, to finally exploit this heritage, still today not much known and above all not considered.

Of course, this is not a complete documentation, but only an exemplification, with a series of historical and current exhaustive documents of this problematic.

For Genoa you must start from Ripa Maris, facing the city and waterfront of the city, set up since 1133 with the characteristic continuous arcade, commercial headquarters and crossing east-west, always up to the nineteenth century, represented in all the prints and paintings, as a picture of the city for the visitors from the sea, the most common way to reach Genoa.

Here, above the Ripa, which characterizes and dominates with its mole and architecture of great

prestige, is the palace of the Banco di San Giorgio, the first bank in Italy, behind which Piazza Banchi opens in the compact part of the historic city, the heart of the exchange-rate activities that here had their “Banchi” from the Middle Ages, dominated by the church of San Pietro in Banchi, placed in an elevated position. From here with the Orefici road, Soziglia Square (and the adjacent Campetto Square), and with the continuation of the Luccoli road, at the edge of the historic town towards the hill, you reach the Fontane Marose square, an ancient square of access to the sixteenth-century Strada Nuova, which on the other end, sees the departure of a steep climb, that of the ascending Santa Caterina, another axis enriched in the sixteenth by painted facades.

Again from Ripa, not far from the San Giorgio palace, the ancient road Carlo Alberto, today San Lorenzo road, crosses the ancient Piazza Matteotti square, which opens in front of the back door of the Ducal Palace. From here, by the side of the Ducal Palace, you reach the ancient San Domenico square with the convent of the same name, demolished in the nineteenth century, then Carlo Felice square, today De Ferrari square, profoundly modified in the presence of historical artifacts, modified or demolished, also from the realization of the ‘modern’ palaces of XX Settembre road.

### Ripa Maris, shape, image and chromatic components



Fig.1 M. Wolgemut, *Genoa*, 1493. Xylography. The harbor with the Ripa Maris and the piers.

C. de Grassi, *View of Genoa in 1481*, painting of 1597. Detail of the port with the central part of the Ripa Maris, the porticate, San Giorgio Palace, and behind, Banchi Square with the church of Saint Peter.

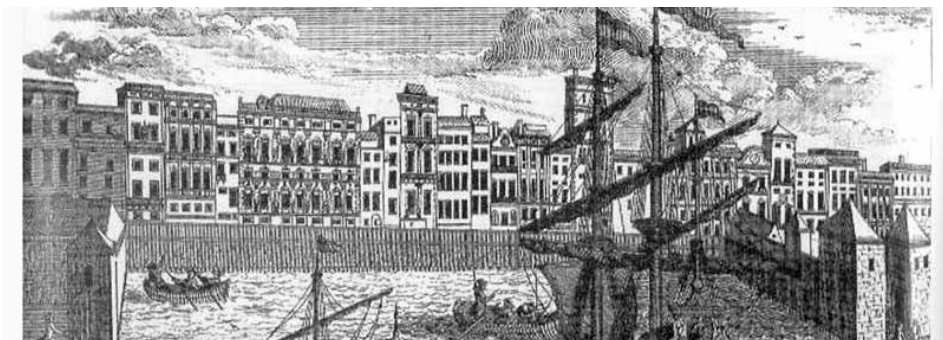


Fig. 2 G. B Probst, *View between the two bridges ie Ponte de Ligno and Ponte Spinola, at the port of Sea of Genoa*. A glimpse of the buildings from the sea, where the decorative treatments of some façades stand out.



Fig. 3 G. L. Guidotti da A. Giolfi, *Vue du Pont Royal*. 1769. Views of the buildings of Sottoripa with the Royal Bridges, Spinola and Calvi leaning against the Sea Walls. Decorative treatments of many facades.



Fig. 4-5 Detail of Ripa. From the watercolor of C. Bossoli, *The Port of Genoa from the Marble Terraces*, c.ca 1846-51. Fig. 5 *The Palazzata* in a photograph of the late nineteenth century.



Fig. 6 Chromatic values of the Ripa Palazzata in a painting of the late nineteenth century



Fig. 7 Ripa's chromatic values at present, with the permanence of painted facades (the only Cellario palace), and the remarkable transformations of both buildings and chromatic events over time.

## San Giorgio Palace



Fig. 8 G. B. Probst, da F. B. Werner. Prospect of the Excellant Palace of St. George with Regio et Mercante bridges, where a beautiful fountain with fresh water in Genoa.

The monumental building of Palazzo San Giorgio is characterized by its richly painted facade, which extends over the houses and palaces of Ripa. Fig.9 Pogliaghi's sketch of 1911, for the restoration of the facade of 1912.



Fig 10-11 . Survey by A. D'Andrade, 1870, of the sixteenth-century decoration preserved by Lazzaro Tavarone Fig. 11 San GiorgioPalace. Picture of the current state of the main painted facade, facing the sea.

## Banchi Square



Figg 12 e 13. The square in the painting of S. Vranco, Giostra in Piazza Banchi, (between 500-600) and in the current photo.





Fig. 14 N. Zucoli, (sec. XIX), View of Banchi Square in Genoa. Fig. 15 G. L. Guidotti A. Giolfi, View of Banchi Square, 1769.



Figg 16 e 17 Banchi Square and the and the sixteenth painted facades (Palazzo De Negro and Serra).

### Orefici Road. Senarega Palace e Lercari Buildings



Figg 18 e 19 Senarega Palace e Lercari Buildings.Fronts on Orefici Road. Conservative Restoratio

### Campetto Square. Vincenzo Imperiale Palace



*Fig. 20 Façade with plaster decorations and painted panels which still characterize the square. General and details view.*



*Fig. 21 Another painted façade of Imperiale Family. Here there is a great degradation and no conservation for the buildings of the square.*

### Nuova Square, today Matteotti Square



Figg 22, 23 Anonymous, *The New Market Square, end of the century. XVII. General view and detail of painted facades.*



Fig. 24, 25 Images of the actual Matteotti square deeply transformed and achromatic.

### San Domenico Square , today De Ferrari Square

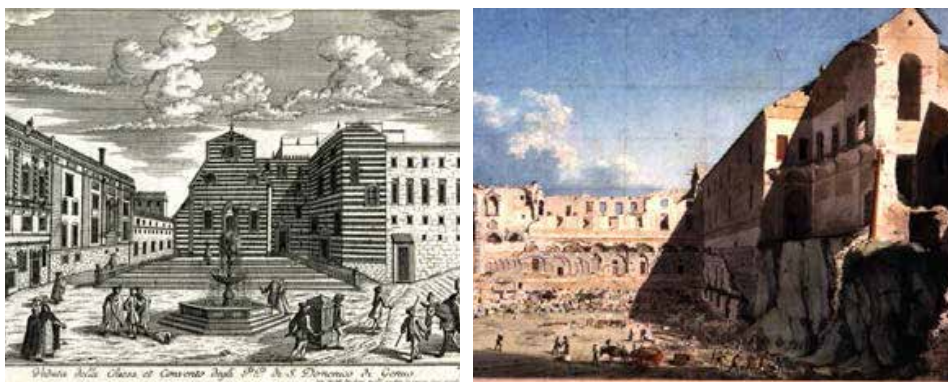


Fig. 26 C. B. Probst, da F. B. Werner, *San Domenico Square, sec. XVIII.* Fig. 27 L. Garibbo, *Ruins of the ancient church of San Domenico, beginning of the nineteenth century.*



Fig. 28 Cartolina. Postcard. Demolition works of the Convent, De Ferrari Square and the new buildings of Via XX Settembre. Fig. 29 On the right some painted facades still preserved.



Fig. 30 e 31 Photos of the new accommodation of De Ferrari Square with the neo-classical buildings by Barabino (Accademia Palace and Carlo Felice Theater)

## Fontane Marose Square



Fig. 32 Anonymous, carousel in Fontane Marose Square, sec. XVII. Fig. 33 Torricelli, by A. Giolfi, View of Amorosa Square, sec. XVIII.



Fig. 34 The rich chromaticity of the square, and in particular the painted facade of the preserved Pallavicino Palace, strongly characterizes this urban space.

### Scurreria Road, la Nuova



Fig. 35 e 36 The road in perception in the two directions of the journey, the first towards Piazza Campetto centered on the entrance of the Vincenzo Imperiale palace. Fig. 35 Detail of one of many painted faces.



Figg. 37 e 38 Imperial Palace, corner on Campetto and detail of painted decorations.

## Transformations of the Genoese landscape

Transformation of coastal landscape seen from the city. The case of the hill of San Benigno and of the New Pier with Lantern.



Fig. 39 H.P. Parker, *View of di San Pier d'Arena and of Genoa from San Benigno*, 1822.



Fig. 40 L. Garibbo, *View of the Port to the Lantern, with the bastions and the church of San Teodoro*, 1832.

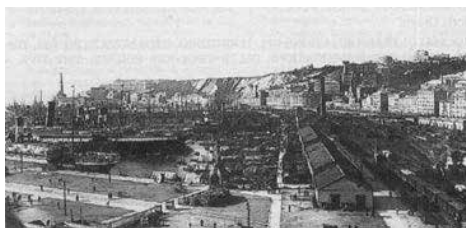


Fig. 41 Anonymous, *View of the city and the port of Genoa from the hills*, c.ca 1850. Fig. 42 A. Noack, *Porto: panorama from the silos. Genoa, 1880-1895*. Stock Photos by Municipality of Genoa. Red Palace.



Fig. 43 Dante Conte, *The port and the Lantern with the bastion of San Benigno*. By the end of the eighteenth-early twentieth century. Fig. 44 *The current picture of the port with the Molo, and the hill of San Benigno, which demolished monumental buildings, is now fully cemented by out of scale residential building and the skyscrapers of a management center*.

## San Pier d'Arena

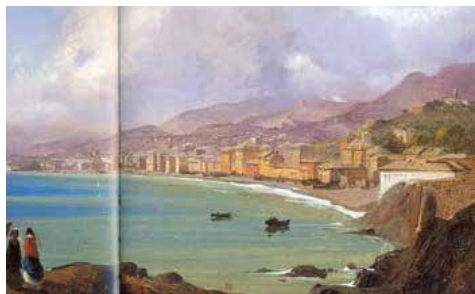


Fig. 45 L. Garibbo, *Sampierdarena, View from San Benigno*, 1860. Fig. 46 *The landscape of the villas of San Pier d'Arena in the eighteenth century. View from the Lantern. Painting at the end of the nineteenth century.*

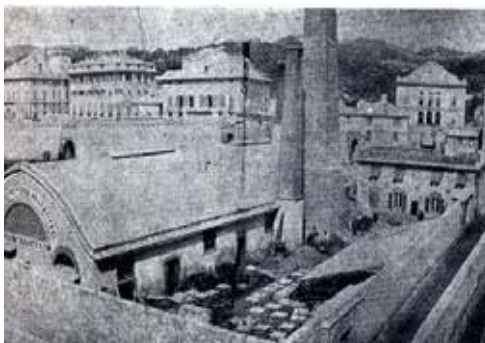


Fig. 47 *The landscape of the San Pier d'Arena villas by the Lantern. Photography of the late nineteenth century.* Fig. 48 *The eighteenth-century industrial settlement in the ancient suburban villas. Photography of the late nineteenth century.*



Figgs. 49 e 50 *San Pier d'Arena Postcards with the nineteenth-century development and the insertion of the railway that has even more distorted the original layout and landscape of this territory.*



*Figgs, 51, 52 In the photos of the present state it is highlighted the demise and degradation of the urban landscape and the villas.*

## Conclusions

### Cornigliano and Albaro

These two other Genoese suburbs also documented, with these two paintings, an eighteenth century Magnasco and one of the late 1800s of Dufour, the original structure of the Genoese territory, organized for cultivated villas that followed the main routes, and the resulting landscape, of great harmony in both agricultural and recreational use, for dislocation at the edge of the city. A landscape today totally overwhelmed, now unrecognizable, and no longer reconcilable. The only formulas that have long been proposed by many writers in many places today are:

1. a process of knowledge, so as not to lose its memory;
2. Valorizing what remains, to the maximum possible;
3. Conservation is also attentive to the slightest details.



*Fig. 53 G. Dufour, "Cornigliano in 1870". View of Cornigliano when the farmland landslide, located on the main road to the west and France, ran on the plain to the sea. Painting at the end of the nineteenth century.*





Fig. 54 A. Magnasco, *Entertainment in a garden of Albaro, the second half of the eighteenth century*.

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# **Generative drawing and digital optimization for agricultural study Trees representation as fragmented photovoltaic panel**

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## **Abstract**

This research integrates the agricultural study of trees with the sciences of representation, in order to describe the architectural form of an olive tree and to show a scientific visualization of the relationship between morphology and light interception in the canopy. The representation of plant architecture, manipulated with pruning operation for agricultural purposes of light optimization, describes the action of sunlight in the tree, testing the potential of digital design tools – especially generative modelling. Through the design of a specific algorithm, the tree is interpreted like a fragmented photovoltaic panel, analyzed using 14,000 control points corresponding to the leaves. The possibility to select these classes of elements becomes the instrument to explain the canopy structure, finding categories that describe and simulate the annual radiance and illuminance. The developed modelling process and its purely theoretical significance constitute the basis for a variety of applications in data analysis and comparison between different models, evaluations, theories, and operations.

## **Introduction**

The proposed path is structured around the creation of an analysis algorithm applicable to heterogeneous case studies of plants modelled according to the principles described below. The study starts from a concrete, measured data, a concrete hypothesis that allows to develop generalizable theses. Among the various plants we selected the olive tree, one of the most popular and representative fruit trees in the Mediterranean area, whose anthropization allows to clearly describe the relationship between shape and light. Human intervention, in particular in the pruning of the tree, is in fact aimed to the uniform distribution of the solar radiation on all the leaves of the crown, a technique based on empirical experience, which has only partly found a more analytical verification. We then wanted to investigate with digital tools the effective reception of light by the leaves, an analysis halfway between the study of the geometry of space and illuminotechnique, to acquire useful elements for influencing the productivity of the plant<sup>123</sup>.

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<sup>1</sup>Proietti et al., 1988

<sup>2</sup>Proietti et al., 1994

<sup>3</sup>Proietti et al., 2008

The three dimensional digital representation of plants has been a subject of interest for several decades, as clearly shows the examination of Godin<sup>4</sup> (2000), which defines the concept of “architecture” of the plant, as “*any individual description based on decomposition of the plant into components, specifying their biological type and/or their shape, and/or their location/orientation in space and/or the way these components are physically related with one another* “. The study of the architecture of the plant in general is at the basis of the survey on the light captured, as already proposed by Ross<sup>5</sup> (1981) and the digital representation stands as a tool for the analysis of the illuminotechnical aspects<sup>6</sup>, able to overcome the problems of discretization of the measurements typical of in situ evaluations (Munoz-Garcia, 2014) by virtue of the morphological synthesis already written in the virtual representation, a condition that allows to query the model in its continuity<sup>7</sup>.

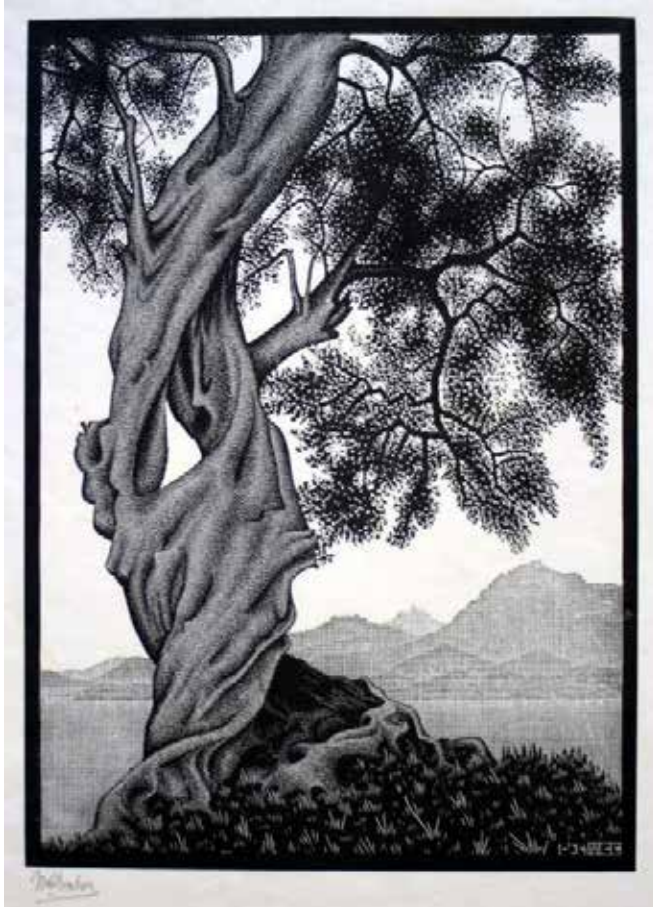


Fig.1 Esher's representation of an olive tree

<sup>4</sup>Godin, 2000

<sup>5</sup>Ross, 1981

<sup>6</sup>Sinoquet et al. , 1997

<sup>7</sup>Pearcy et al. 2005

## **Theoretical assumptions**

A premise of the construction of the model is the evaluation of the selected plant. Scientific necessities assign to the model the task of interpreting reality, of proposing a cognitive synthesis that in addition to describing the morphological aspects becomes the place to highlight implicit relationships.

Given the interest in the relationship between shape and light, the plant is modelled only for the visible forms, i.e. the part that has the ability to acquire the light and be decisive for the results of the competition (Kuppers, 1989)

The construction of the model is founded in the morphological aspects of the plant, starting from empirical morphological relations, as already set by Casella-Sinoquet<sup>8</sup>. The analysis starts from the “map of the plant” theorized already a century ago by McClelland<sup>9</sup>, the first critical step in understanding the observed element deconstructed in a topology of elements<sup>10</sup>. As summarized by Prusinkiewicz<sup>11</sup>, the morphological characteristics that can substantiate the construction of the architectural model, directly observed and measured, are attributable to the orientation of the branches (eg. orthotropic or plagiotropic), their type (monopodial or sympodial), their persistence (indefinite, long or short), their angle according to their position compared with the parent branch (eg. acrotonic, mesotonic or basitonic), the type of meristematic activity (rhythmic or continuous), the number of internodes per branch unit, the arrangement of the leaves (phyllotaxis), the shape of the leaves and the position of the reproductive organisms in the branches (terminal or lateral). The model, structured by basic elements, meets the requests of Godin<sup>12</sup> (2000) concerning the information on the decomposition of plant and its topology, to be understood as the connection between the elements described, a path that brings out the geometric information related to shape and space, the real focus of research on architecture for illuminotechnical purposes.

The attention to the relationship between the structure, shape and type of the plant has the aim of correlating the formal aspects to solar radiation, in order to understand a key aspect for the functioning of the plant. Over time, the scientific literature has focused on carefully analysing the different models for radiation calculation applied to plants, like in the good analysis by Chelle-Andrieu<sup>13</sup>. At the base of the validity of the instrument is the relationship between the energy calculation model and the representation of the shape; simplified mathematical models of plants are first abstract two-dimensionally as in Charles Edwards-Thorpe (1976), Ganis<sup>14</sup> and then in three-dimensional simplified models characterized by ellipsoids, as proposed by Norman-Welles<sup>15</sup>, cones for conifers, according to the idea of Kuuluvainen-Pukkala<sup>16</sup>, cylinders, paraboloids and cones for fruit trees, as in Wagenmakers<sup>17</sup>, or using fractal geometry, as summarized by the group headed by Prusinkiewicz-Hanan<sup>18</sup> and applied in studies such as those of Myneni<sup>19</sup>.

As already explained by Mariscal<sup>20</sup> et al. (2000), from the work of Monsi-Saeki<sup>21</sup>, over 50 models of radiation analysis in homogeneous crowns have been developed, focusing on the construction of

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<sup>8</sup> Casella, 2003

<sup>9</sup> McClelland, 1916

<sup>10</sup> Lewis, 1999

<sup>11</sup> Prusinkiewicz, 1998

<sup>12</sup> Godin, 2000

<sup>13</sup> Chelle-Andrieu, 1999

<sup>14</sup> Ganis, 1997

<sup>15</sup> Norman-Welles, 1983

<sup>16</sup> Kuuluvainen-Pukkala, 1987

<sup>17</sup> Wagenmakers, 1991

<sup>18</sup> Prusinkiewicz-Hanan, 1989

<sup>19</sup> Myneni, 1991

<sup>20</sup> Mariscal et al, 2000

<sup>21</sup> Monsi-Saeki, 1953

efficient mathematical models which can now be read as a theme now sectoral of other disciplinary areas, from which you can draw by using the related digital applications, able to investigate any geometry represented.

If the growth models that refer to the studies of De Reffye<sup>22</sup> and to the development of the AMAP algorithm (Atelier de Modélisation de l'Architecture des Plantes) are foundational for the conceptual and instrumental approach with which to address this issue, Willaume<sup>23</sup> shows that the direct correlation between growth and irradiation is a pragmatic obstacle in the case of plants manipulated by man, like the case of the olive tree, characterized by an uneven distribution of the leaves that is exemplary for the relationship between shape and light in the nonlinear distribution of the leaves (de-Reffye Houllier, 1997). Of great interest in the case study of olive trees, and generally for geometrically complex systems are the simulations of radiation interception, first related to the analysis of dry matter produced and dry matter distributed<sup>24</sup> and later<sup>25</sup> to the development, calibration and validation of a model for assessing the *photosynthetically* active radiation (PAR), from which further applications follow<sup>26</sup>.

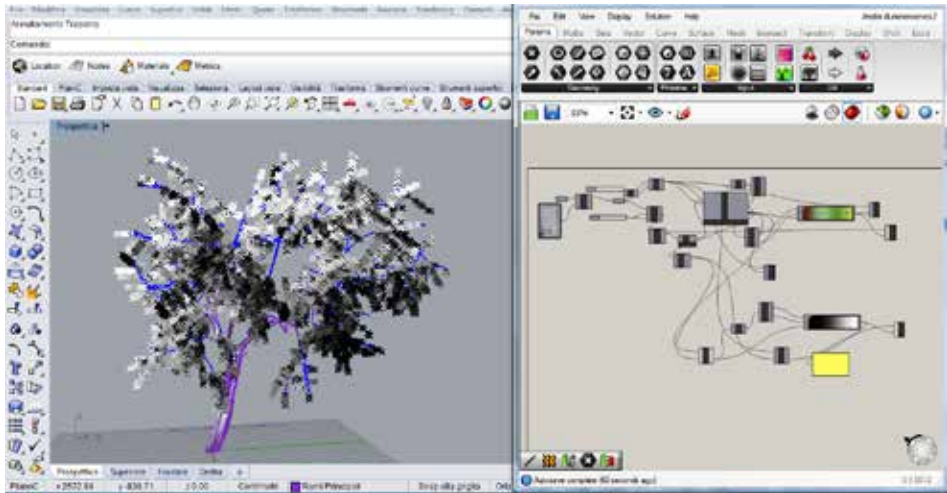


Fig.2 Grasshopper's modelling

### Generative modelling innovation

The approach in this study is thinking about production-linked trees as a kind of natural “solar panels”, whose complex fragmented morphology is the result of the choices of man who wants to make the plant photosynthesis more efficient, maximizing with pruning the incidence of the light on the leaves. We wish to address the complexity of the geometric conditions of the plant, with the associated problems of selection and management of shapes, through the unprecedented use of generative modelling, a representative added value that ensures the serial control of the elements represented.

<sup>22</sup> De Reffye, 1989

<sup>23</sup> Willaume et al. 2004

<sup>24</sup> Mariscal et al., 1998

<sup>25</sup> Mariscal et al., 2000

<sup>26</sup> Villalobos 2006



Fig.3 Survey "in field"

The parametric design paradigm is able to inserting in all the way, penetrating into all corners of the discipline. Parametricism implies that all architectural elements and compositions are parametrically malleable. This implies a fundamental ontological shift within the basic, constituent elements of architecture. Instead of the classical and modern reliance on ideal (hermetic, rigid) geometrical figures - straight lines, rectangles, as well as cubes, cylinders, pyramids, and (semi-) spheres - the new primitives of parametricism are animate (dynamic, adaptive, interactive) geometrical entities - splines, nurbs, subdivs, particle-spring systems, agent based systems ect. - as fundamental 'geometrical' building blocks that can be made to resonate with each other and with the wider context via scripts<sup>27</sup>.

The representation of the model is based on the geometric design (Migliari 2012), an interpretive representation created by Advanced CAD topics that are the NURBS (Non-Uniform Rational Basis Splines), the advantage of which has been recognized for years in the application of the representation of trees<sup>28</sup>, a discrete interpolation of the measurement data that exceeds the shape simplification (Takenaka et al., 1998) and intersection<sup>29</sup> issues.

We chose to work in a NURBS environment through the Rhinoceros software (version 5), then using the Grasshopper plugin, *visual aid for scripting* that ensures generative representation, a real added value of the investigation method. For the illuminotechnical investigations we also used the DIVA 2.0 software<sup>30</sup>, a plugin by Grasshopper<sup>31</sup>, a fully tested tool<sup>32</sup> based on the integration of Radiance<sup>33</sup>, Energy Plus<sup>34</sup> and DAYSIM<sup>35</sup>.

<sup>27</sup> Schumacher, 2017

<sup>28</sup> Benes, 1995

<sup>29</sup> Godin et al. , 1999

<sup>30</sup> Jakubiec-Reinhart, 2011

<sup>31</sup> Lagios et al., 2010

<sup>32</sup> McNeil et al., 2013

<sup>33</sup> Ward-Rubinstein, 1988

<sup>34</sup> Crawley et al., 2001

<sup>35</sup> Bourgeois et al., 2008

## Results and discussion

With regard to the illuminotecnical analysis, the unprecedented added value that substantiates the application of generative modelling to complement the three-dimensional representation is attributable in particular to its capacity to be able to select serially a class of elements. The control points of the analysis are therefore the leaves, a value taken thanks to the contemporary computing performances, data that does not become the subject of interpolation compared to necessarily limited control points. Technically to determine control points, after recognizing the foliar surfaces already grouped into one layer, through generative modelling a point was located by selecting serially the CG of the leaf, with a slight offset of a few mm from the vertical to avoid the intersection between points and planes.

At the end of the analysis 13.918 leaves were represented, a value appropriate to the experiences already verified in other researches (Project et al., 2015). The noted geometries of the tree instead have 1.600 curves, between generators and leaders. From the model it is possible to estimate the average annual radiation on the leaves of 969 kWh/m<sup>2</sup>, with a total amount of energy received of 7.960 kWh. The three-dimensional model was characterized by reference to the value of annual radiation with a gradient from white to black depending on the light received, first performance that already describes the light distribution within the foliage.

Another significant fact is provided by the volume of the envelope shape that contains the crown of the tree, formed with an approach similar to that protracted by Cluzeau<sup>36</sup>. Having chosen to work with NURBS surfaces rather than with simple geometric shapes, it is possible to get to evaluate a complex form that interpolates control sections to thus be able to analyse the various data derived from the model that can be compared with that obtainable with traditional techniques, according to an approach followed also by Xu<sup>37</sup> et al. (2013). Of interest may be the comparison of the projected area and the Vertical Crown Projected Area Method (VCPA) calculated by identifying the bundle of straight lines centred in the trunk every 45 degrees the vertices resulting from the intersection with the edge of the surface projected on the ground, as described by Miranda-Fuentes<sup>38</sup>: the VCPA turns out to be 10.6 m<sup>2</sup>, while the area obtained from the outline of the projection is 11,19 m<sup>2</sup> (6,39 m<sup>2</sup> if one considers the actual projection of each single leaf). It may also be significant to compare with the Ellipsoid Volume Method (VE): if a hypothetical sphere constructed from the projected extent of the greater diameter, equal to 4.6 meters, has a volume of 51 m<sup>3</sup>, and if also with the smaller diameter, equal to 1.35 meters, you get a volume of 10.3 m<sup>3</sup>, given the sphere calculated on the height of the crown of a diameter of 3,58 m and a volume of 24,54 m<sup>3</sup>, you obtain an ellipsoid volume amounted to 11.63 m<sup>3</sup>. This value can be compared with the volume estimated virtually, where progressive sections have been realized with 0.3 meters steps, whose contours have been interpolated in a lofted surface which results in a volume of 14 m<sup>3</sup>.

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<sup>36</sup> Cluzeau et al. 1995

<sup>37</sup> Xu et al, 2013

<sup>38</sup> Miranda-Fuentes et al. 2015



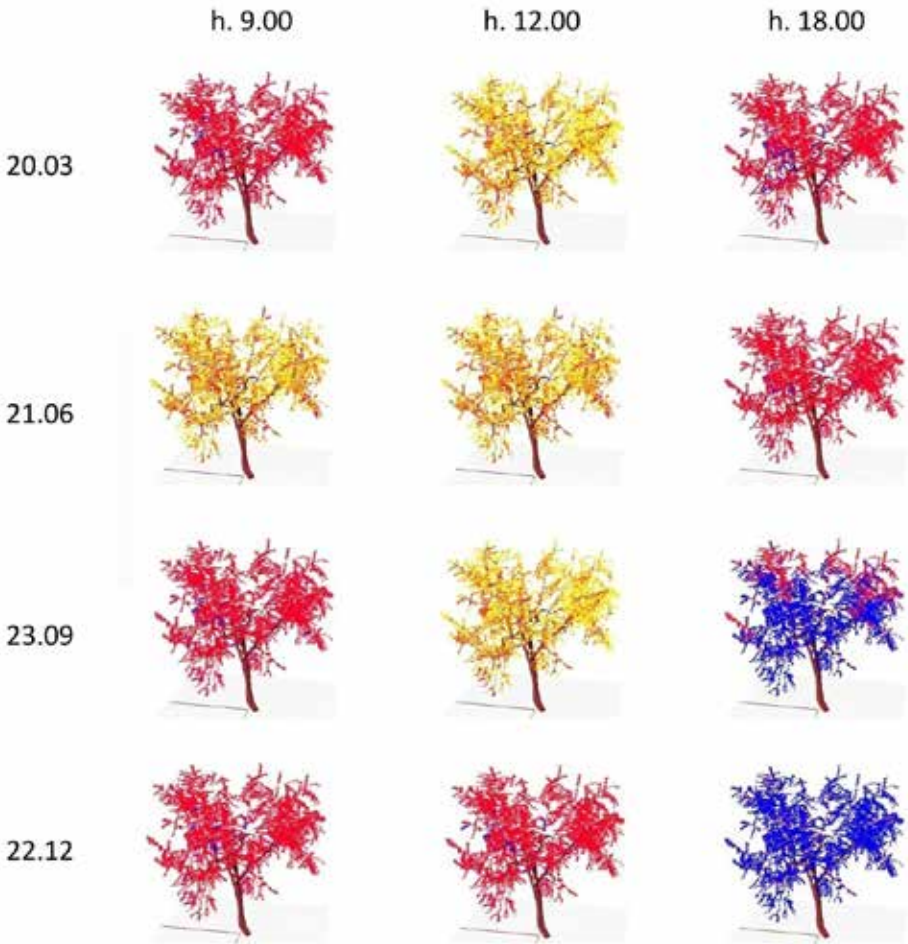


Fig.4 Tree luminance analysis

## Conclusions

The model created allows to describe with some clarity the characteristic sizes of the plant and the distribution of light in the crown, comparison that is also useful to check the validity of the agronomic estimates and the results obtained with the advanced instruments of indirect detection. The opportunity to confront form and structure of the tree finds strength in the value of the generative design, with which you can select, query and manipulate more easily isonomic classes of shapes, as can be seen in the selection of the leaves and in the further classification according to radiation and illumination. The development of the model with these instruments, though laborious, summarizes the different representative approaches of literature, the “geometric structure”<sup>39</sup>, attention to shape<sup>40</sup>, the interest in the “multiscale topological structure”<sup>41</sup>. This representation leaves explicit the path taken, for the benefit of the understanding of the logic to the very definition of the model as well as the possibility to intervene, modify and query the model, interconnecting the different representative phases. The parameterization involved in the serial monitoring of the data already assumes a value in itself, as evidenced by the selection of nearly 14,000 control points in correspondence of the leaves.

That investigation is still an interesting moment of reflection in olive growing, but the realization of the specific case renders generalized assumptions liable. The path provides indications on the validity of the simplifying tools commonly used, as in the analysed case of the crown volume. From the data taken from the simulations we can describe and interpret the functioning, as clearly shows the classification of the leaves of light and leaves of shade and the segmentation in classes of the processuality of the simulated illuminance, representations useful however to describe the process that are revealed in their educational potential.

The intersection of arboriculture with the sciences of representation unfolds as an engineering of shape, a modelling concretisation useful for detecting the morphological relations related to radiation, clarification of underlying relations that open to further developments and research applications.

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<sup>39</sup> Sinoquet-Andrieu, 1993

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# Nature/Organicism vs Architecture/Geometry: a Full Conservation of Corsican Landscape throughout the Genoese Rule (1453-1768)

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## Abstract

The *long durée* of Genoese administration in Corsica (Banco di San Giorgio, 1453-1562; Senate, 1562-1768) was aimed at a shrewd balance between local social-economic details and a consistent integration in the financial Spanish-Genoese trust, from Europe to trans-atlantic colonies. Anyway only one regional planning was achieved: the re-foundation of Ajaccio (1492).

After the treaty of Cateau-Cambrésis (1559) whichever model of alternative economic increasing was radically rejected by local communities in the purpose to an utter and exclusive *status quo* in estate properties, productions and commercial networks. It justified irrelevance of town compared with a high wealth of *micro*-villages: rough geo-morphologic layout of the island well supported organicistic antropic settlements. The outcome was an economic stagnation? Historians evaluated this as an ordinary backwardness, produced by misrule and colonialism. But the judgment is wrong. Genoese procedures safeguarded a perfect conservation of social-economic order and of natural landscape.

The architectural culture notices these circumstances faithfully. It's possible to find humanistic topics at a high class of practice (proportional layouts) in military buildings only. Bastia – governors' residence – was alone true town in the island. Corte, on contrary, was an ensemble of small villages, in the centre of an extended rural district;. Pasquale Paoli choised it, not by chance, as the capital of the revolution, because its urban settlement was an anti-genoesse *icona*.

Therefore a vivid dialectics organicism/classicism evolved and bloomed in an unorthodox and marginal cultural environment outwardly.

## Introduction

The excellent conservation of Corsican landscape is the rational result of a centuries-old process by the Genoese supremacy, from the XIII to the XVIII century<sup>1</sup>. The main influence took place under the rules of the Banco di San Giorgio (1453-1562) and, after the Cateau-Cambrésis' Treaty, of the Senate (through the *Magistratura di Corsica*), from 1562 to the revolutionary age (1729-1768). The dubious and disputed origins of this dominion stopped an exhaustive absorption and an equating of the isle to republican institutions. It lived on as the ancient *Regnum Corsicæ*: a kingdom without a king; every doge – with a two-year office – was only a vice-king. This state authorized Pasquale Paoli's politics and the intervention of France.

<sup>1</sup> Bibliography on Genoese Corsica is marked by a huge vastness. Majority of french historical researches were sectary and defective - today too, by political reasons - so the analyses in Italy during the fascist regime. For a first counseling see: S. Acquaviva, *La Corsica. Storia di un genocidio*, Milano 1982; G. Ravis-Giordani, A. Laclau, *Atlas ethnohistorique de la Corse*, Éditions CTHS, Paris 2004, pp. 211-242.

Genoa's power was become slowly step by step from the end of XII century to the half of XV, by honouring traditions and particularities in institutions, society and economy. The *status quo* of an ancient Christian democracy was maintained integrally, so it was accorded after 1362 by means of bilateral agreements (nota). All this was reasserted and improved 1569 (*Statuti civili e criminali*, 1571).

Genoese republic was an oligarchic regime, founded on free trade, who needed the isle for reasons of military defence and of international prestige only. Ownership of Corsica wasn't a business, indeed the tax levy ensured only military spending and ordinary repairs to road infrastructures.

Republican politics were: a well-shaped separatism between the *Regnum Corsicae* (Papal Fief) and the *Ducato* (Imperial Fief); the maintaining of local autonomies; the free administration of common lands; an effective balance between social classes. Consequently islander aristocracy was marginalized and weakened. Corsica was left a mosaic of several economic and social boards. Therefore it was not a real problem to keep fully the medieval toponymy (Fig.1).

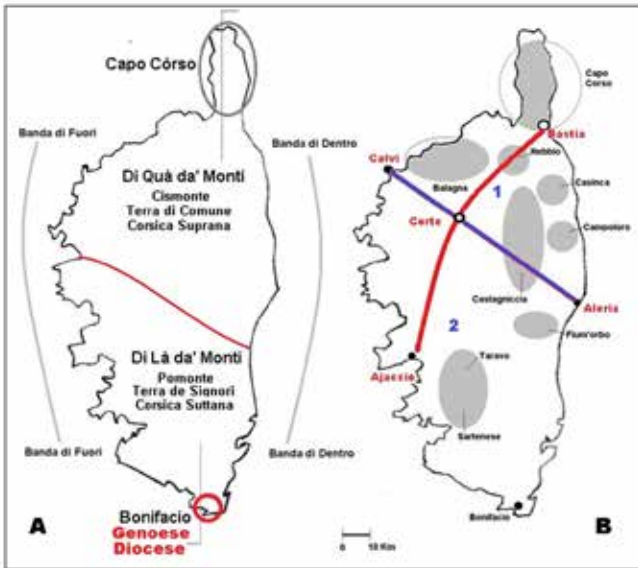


Fig. 1 – Corsica: a territory as a mosaic of several social and institutional conditions. A. Historical-Geographic appellations. B. An unpopulated land: Corte, the anthropic barycentre of the island; the line Calvi/Aleria cut the Island in more inhabited North-East (1) and in a desolate South-West (2).

Genoa ruled all its dominions in compliance with a strict realism, i.e. by a soft authoritarianism and a stringiness too. It played a moderate colonialism everywhere, not only in Corsica. The liberistic and not-inclusive character of his urban society enjoined a very low, mean, public expense, so like in the Liguria communities, in education and culture above all.

The Corsican society was rustically temperate, but not poor absolutely. The *Magistratura di Corsica* initiated farm economy but didn't develop manufactures and factories. This trend conserved local and Genoese social privileges at the same time. Agricultural economy was well diversified; then it guaranteed full food self-sufficiency and a good *surplus* of specialized productions for export (wines, oil, fruits, cheeses, sausages, wood) in all Liguria and Tyrrhenian markets, along the coast from Nice to Rome especially. This condition built a low social pyramid with a very large base.

So islander communities fought every kind of immigration fiercely and bitterly to preserving a more large incomes and a perfect cultural-ethnic purity. The serious deficiency of cheap labour was solved by streams of seasonal workers. They didn't need new permanent settlements. For example, every year some hundreds of field hands from North-Tuscany worked in Agriati and in Bonifacio countries.

The *Magistratura di Corsica* boosted every kind of cultivations and its retraining, by avoiding monocultures except the chestnut woods, but limited to hilly area of Castagniccia (Fig. 2A). Many agricultural practices were imported from Liguria. For example there were large terracing in Capo Corso most of all. (Fig. 2B).



Fig. 2 A. Castagniccia, aerial view. Road system follows the geomorphological conditions completely; city limits (red lines) on the contrary. B, Terracing at Nonza (Capo Corso).

The French rule, from *Ancien Régime* to the Second World War, caused the end of freight traffics with Italy and a consequent crisis of rural production, the impoverishment of communities and an impressive emigration towards Paris and the most important French towns. So there weren't industrialization and population increase. The isle was delivered to contemporary age in its ancient conditions. So it is an exceptional document – in XVII-XVIII centuries Europe - of an all alternative kind of economic development that was established on a democratic criterion of eco-sustainability. The map drawn by Francesco Maria Accinelli(nota) (1732/1768?) provides historical researchers to perfections about all the peculiarities of an inward-looking country, that was proud of his socio-economic status (Fig. 3), by highlighting its stubborn and outlandish endurance to every kind of a transforming process.

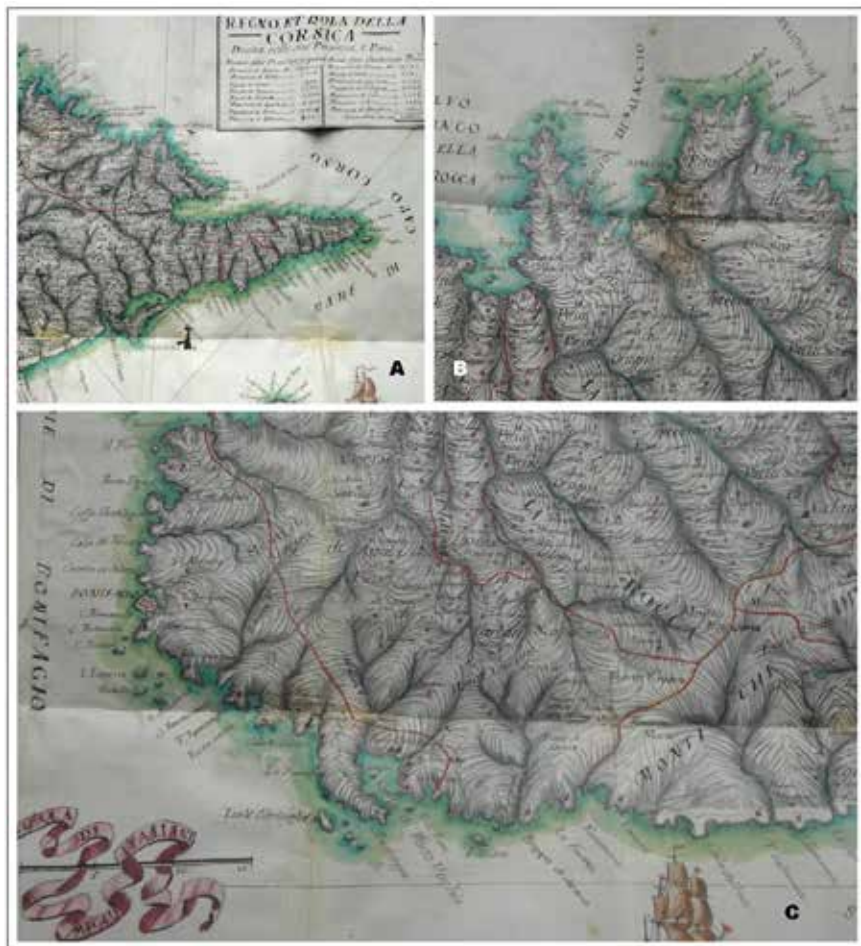


Fig. 3 – Excerpts from the map of the isle by Francesco Maria Accinelli (*Storia veridica della Corsica*, from 1743 to 1768). A: Capo Corso. B: The environments of Ajaccio. C: The Disabitato, from Bonifacio to Porto Vecchio.



## Methodology

This disputed complexity is fully understandable if a sweeping change of critic paradigm is set in historical analyses, compared both to French or Fascist jingoisms and the centripetal, self-referential, local scholarship. A direct and material knowledge of the matter is basic, by avoiding drifts in abstraction and in metaphors. Documental philology must be compared to the graphic survey of building. The historical and actual cartographies are unavoidable, but its analyses must be disciplined. Consecutively some results are displayed here very succinctly.

### 1 - Infrastructures and facilities for regional development

Communities crossed offensively against every kind of betterment and innovations that changed *status quo*: roads, drainage of marshes, flood controls, new rural colonisations or urban settlements. Only extraordinary repairs of extant infrastructures was welcome: i. e. neither a departure from a prescriptive and nit-picking adhesion to the geo-morphological and social conditions.

Remarkable examples – between the end of XVI century and the half of XVII – are: retooling of roads from Porto and Sagone to Aitone wood; a new harbour in the Bay of Santa Maria della Chiappella (Capo Corso) in front of Leghorn and Piombino; draining of marshes in northern *Piana Orientale* (from Bastia to Aleria). All these projects were given up by the Genoese Senate.

### 2 - Urban settlements

The Banco di San Giorgio boosted the foundation of a new town, Ajaccio, in 1492. In 1539 it tied a second test in Portovecchio that failed because of a fierce of local inhabitants too. In the XVII and XVIII centuries local communities fought against a little immigration from Greece in the *Banda di Fuori* (west coast, between Paomia, Pozzo di Borgo and Cargese). Bastia remained the only real town in Corsica, with its 25.000 inhabitants. Calvi and Bonifacio were very little towns though very important by commercial, financial and military functions.

The comparison between Bastia e Corte is illuminating if accorded to an iconic representativeness of politics. Bastia was the symbol of Genoese abomination because of its monumental shape (Fig. 4).

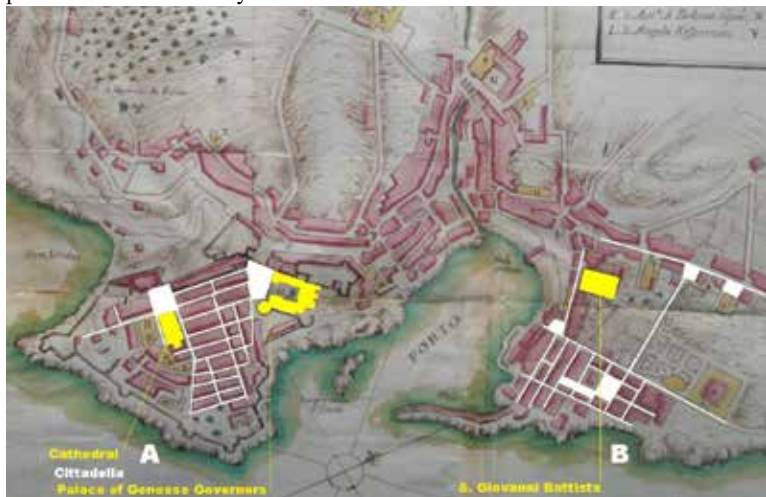


Fig. 4 – Bastia, plan (F. M. Accinelli, *Storia...cit*): A - “Terra Nova” is the first foundation quarter. B: “Terra Vecchia”. The chief town of Corsica was a fragmentary urban settlement, with two polarities: a City (the political and religious Cittadella, enclosed by walls with ramparts) and a harbour downtown (“Terra Nova”, without walls). These parts were joined by free building growths.

On the contrary Corte was an organic heap of hamlets, scattered in a vast rural region, without any geometrical and monumental formalization (Fig. 5). The *dux*<sup>2</sup> *Pasquale Paoli* caught it as capital of revolutionary rule just for this reason, beyond its position in the centre of Corsica, at the cross of the most important roads (Fig. 1B).

### 3 - Military buildings

The castle of Ajaccio was built by Lombard architects: Paolo da Mortara, Cristoforo de Gandino, da Milano, and Pietro da Novara. It occupies almost a half of urban area. It was designed according to the updated architectural theories but the morphology of the rocky ground forced the builders to adjust the basic pattern (Fig. 6).

The new settlement of Portovecchio was designed in 1539 by Gioan Marco Olgiati, a famous engineer of the imperial court of Charles V<sup>3</sup>. He drew one's inspiration of Polibius' description of a *roman castrum*, by a sophisticated modular proportionateness. Bur he was obliged to alter the basic scheme of an isosceles trapezium (Fig. 7A) by according the south rampart to the near hill (Fig. 7B).



Fig. 5 – Corte (F. M. Accinelli, *Storia...cit*).



Fig. 6 – Ajaccio: an overpopulated small town (F. M. Accinelli, *Storia...cit*). The castle fills up almost half of urban area. It was built by adapting a theoretic typology (A) to the geomorphological conditions (B).

<sup>2</sup> Benito Mussolini choised Pasquale Paoli between his qualified historical references, by according some Enlightenment italian intellectuals. Infact Bernardo Tanucci and Carlo Giuseppe Gorani judged Paoli as an adventurer and a despot. See: C. Bordini, *Rivoluzione corsa e illuminismo italiano*, Bulzoni, Roma, 1979, pp. 80-86; G. Gorani, *Mémoires pour servir à l'Histoire de ma vie*, in *Repubblica di Genova. Tomo II. Regno di Corsica (1700-1768)*, in C. Brossi, *Repubblica di Genova. Tomo II. Regno di Corsica (1700-1768)*, Franco Maria Ricci, Milano 1997, pp. 149-166.

<sup>3</sup> R. Moresco, *Gioan Maria Olgiati «ingegner» in Corsica e a Capraia, tra il 1539 e il 1554*, in «Atti della Società Ligure di Storia Patria», N.S., CXXVII, f. II, 2013, pp. 75-118.

In 1542 the builders changed the original design further. Indeed it was still too much theoretical in front of the nature of the ground (Fig. 8). The failure of rural colonization entailed a very slow growth of the settlement that was completed only in XIX century.

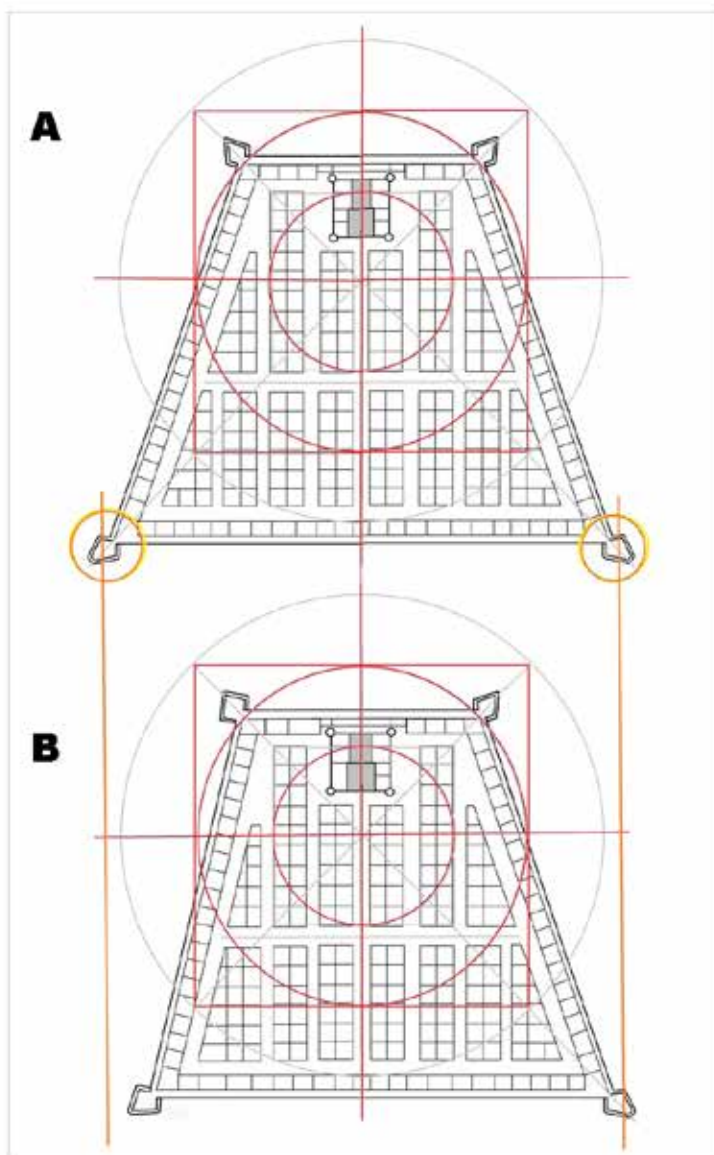


Fig. 7 – Portovecchio, Gioan Marco Olgiati's project of the new town. The theoretical pattern (A); its adaptation in the geomorphology (B).

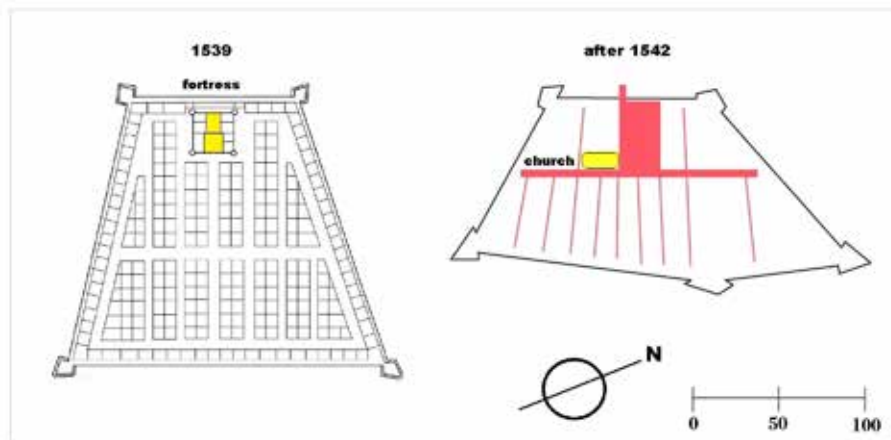


Fig. 8 Portovecchio, the Olgiati's plan compared to the executive project.

An upstanding reference to architectural treatises is shown by many other designs. Modular patterns are traceable in the fortresses at Orchino, Propriano, Bosco di Lucca and in a project for a common housing in Paomia too. Neither of four designs was built (Fig. 9).

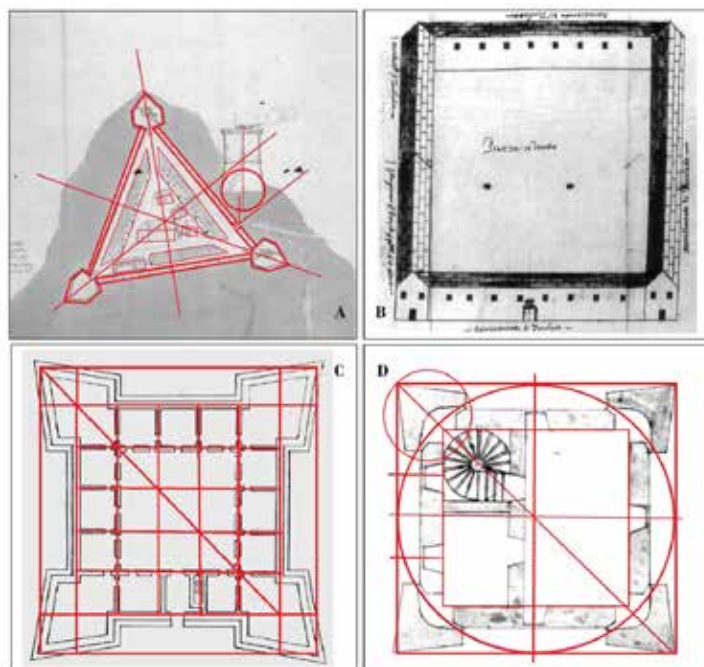


Fig. 9 Military buildings as landmarks. A - Orchino, project for a fortress (anonymous, 1581-1610?). B - Paomia, project for a Common Housing (anonymous, 1676). C - Propriano, Project for a small castle (Sebastiano Ricci, 1669). D - Bosco di Lucca, project of castellated farmhouse (Marco Clemente, 1596).

#### 4 - Religious architectures

Corsican democracy was founded on Christian social doctrine. Catholic religion was the collective soul of the people. Church is the only kind of architecture that was built in monumental shapes. But its dominion is never related to urban structure, but in an overlooking connection with a spectacular and splendid landscape. Hundreds of religious buildings (from great churches to small oratories) build a magnificent counterpoint between human labour and the God's Creation. Bell towers are country landmarks in the entire isle.

San Martino at Patrimonio is a typical example. The church was built at the north periphery of the hamlet, in a massive dominance of it. It hasn't a parvis, but it is overhanging a mere barnyard. The noble façade is disproportionate in connection with the wretches and little blocks of houses intentionally. The landscape is its favoured relationship in a circle of tens of kilometres, from Agriati and the Bay of St. Florent to Capo Corso (Fig. 10).

#### Conclusions

In Corsica the ties forced by the geomorphology and the democracy together won classical architectural culture and dictated organic patterns. The story of the isle testifies an unusual and undervalued ancient avant-garde: the full landscape conservation isn't a utopia, if an economic and democratic eco-sustainability becomes the basis of an integral human improvement. Genoa – the bitter *Dominante* – played a prominent role, but unwitting. This a perspective for renewed historical analyses, that are set free from the prejudice really<sup>4</sup>.



Fig. 10. Churches in the landscape. San Martino at Patrimonio.

<sup>4</sup>All photos and graphics are made by the Author.

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# Landscape Architecture, Integrated project for the enhancement of Piacenza wall's park<sup>1</sup>

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## Abstract

This project for the valorisation of the north-west section of the *Parco delle Mura* in Piacenza raises a number of important questions:

- the role of the Park as a territorial centrality;
- the constructive role of agriculture and open spaces in defining this portion of the urban landscape;
- the increasingly more relevant role of slow infrastructural (bicycle-pedestrian) and environmental systems.

## Introduction

In Piacenza the north-west section of the city walls possesses the qualities to become an extraordinary environmental, cultural, playful and tourist (not to mention productive) system. Its position straddles the historic centre inside the ring of the walls and an equivalent area *extra moenia* comprised of infrastructures, countryside and the river. The proposal works in this direction, beginning with a reconsideration of agriculture and its diverse meanings: from the minute grain of urban agriculture to the pattern of land holdings in the extra-urban territory, passing through the large void of the valley.

This structure leads to a consideration not only of the longitudinal system of the walls, but also its transversal counterpart, intended as a vaster section through the territory, to all effects regarded as an integral part of the urban landscape.

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<sup>1</sup>Concorso Internazionale di Idee per la Redazione di un Progetto Integrato di Valorizzazione del Parco delle Mura di Piacenza 2012/2013

Progetto vincitore : Carmen Andriani (capogruppo) + João Nunes (PROAP)

con Cecilia Anselmi, Chiara Bertoli, Juan Carlos Dall'Asta, Vito Fortini, Vito Marco Marinaccio, Carlos Manuel Ribas da Silva (PROAP), Juan Ignacio Zoilo Sanchez (PROAP).

Coll. Alessio Agresta, Maura Argiolas, Silvia Susana Basilio do Rosario (PROAP), Marta Fea (PROAP), Francesca Ferlicca, Dario Giordanelli, Marco Merigo, Veronica Piacentini, Andrea Revolti, Behrooz Bagherzadeh Saffarin, Camilla Tomasi (PROAP), Michelangelo Vallicelli.

Consulenze, Tomaso Bertoli (ingegnere, produzione energetica da biomassa), Giovanna Fontana (biologa, aspetti agro-ambientali ed eco-paesistici), Alessandra Ondeggia (architetto, riprese fotografiche).

## Methodology

The project deals with all open spaces, prevalently public and varying in nature (residual, decommissioned, the object of remediation, of crossing, for farming, sport, recreation, parkland, etc.). These spaces are attributed a constructive and relational character as part of a functional and physical system; the project encourages the creation of spaces of social interaction and exchange. It creates new functions and new uses (the large vault of the ‘agricultural plane’ of the market, the pattern of greenhouses, gardens, playing fields and services in the area of the former factory, currently being recuperated). It proposes new uses for selected existing buildings, increasing hospital-ity services and connecting brownfields and leftover spaces within a unique and fully requalified environmental system.

The prevalence of farmland in the north-west area of Piacenza links this section of the *Parco delle Mura* to themes of agriculture and urban gardens. There is also a consideration of the cultural and social value that particular cultivations continue to possess in these contexts. The project proposes a reflection on the possible coexistence of agriculture at the territorial dimension of the contemporary city, in its twofold role as a portion of the urban landscape and simultaneously a source of productive activity. The valorisation of this section of the city walls will affect the spontaneous and fragmentary presence of agriculture, contributing to its modification. It is possible to imagine principles of transformation (through hybridisation, extrusion, the rethinking of the ‘pattern’ of farmland) that clarify the principles of cohabitation with built spaces. One example is its inscription within a vaster notion of the ‘park’ – simultaneously productive, playful, cultural – an idea of the park (the *Parco delle Mura* in this specific case) that, in a similar single homogenous context, links fringe city and agricultural territory, historic elements and infrastructural bands.



Fig. 1 Final plan



The theme of agriculture (intended as production, learning, experimentation and recreational activities) is intertwined with that of the garden dedicated to typical cultivations, such as historical plants for textiles. Together with the valorisation of the city walls as an important element of historical and environmental heritage the system of cultivations and the bicycle-pedestrian path may establish an attraction at the territorial scale. The layouts of these fields design a pattern running parallel to the city walls and the infrastructural bands of the ring road and railway. The entire project confirms this grouping of lines that become the patterns of fields, greenhouses, pedestrian paths, seating, plantings, gardens, parking, bicycle paths or rooftops.

This strategy permits the identification of interstitial interventions and offers the possibility to dialogue with the existing through its regeneration.

The project also suggests a scalar progression of patterns, corresponding with three diverse 'typologies' of cultivated soil: urban gardens and greenhouses, vegetable and flower gardens running parallel to the city walls, the *extra moenia* agricultural lands that flow into the large pattern of farm fields. This produces different measures and a diverse dilatation of the bands and fields, though it does not exclude the possibility of osmosis between the two dimensions. For example, the system of bicycle-pedestrian paths draws the minute patterns of urban agriculture outside and along the city walls.

The idea of the park contains the treatment of the soil and its modelling (through movements of earth, excavations and incisions). There is also the idea of not adding volume, but rather carving it out in the differences between levels, working once again with the soil and its depth. Finally, there is the idea of re-naturalisation, and the importance of supporting it with a suitable ecological infrastructure. In this case the project entrusts the articulated system of a bicycle-pedestrian path with the complex role of linking the various areas of intervention, serving as the *fil rouge* of a new environmental system.

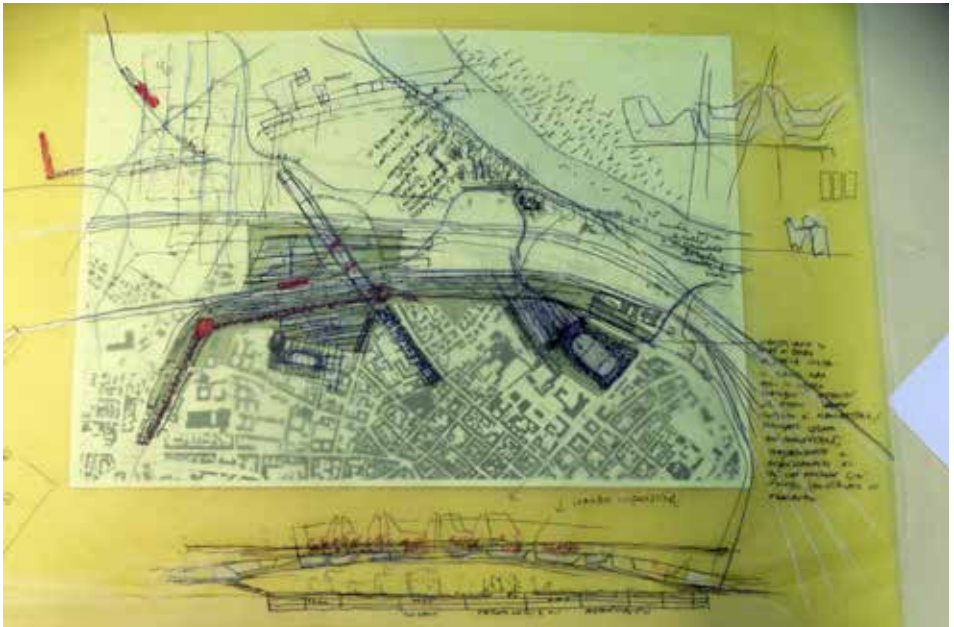


Fig. 2 General plan sketch by Carmen Andriani

### Double Loop

This is the name given to the bicycle-pedestrian path connecting the two parts. At the vast scale it designs a pattern in the form of a ‘figure eight’ oriented toward the river and the farm fields.

*Double loop* is a continuous system of slow mobility and an environmental infrastructure that welds together disconnected traces of the existing. Its area of influence varies case-by-case. It dilates inside the walls, linking the two main areas of intervention of the former factory and former barracks; it runs at different heights, exiting outside the walls, running along their base, flanking the area of vegetable and flower gardens. In the section *extra moenia*, the bicycle-pedestrian path unites interrupted itineraries. Crossing the countryside to the northwest, recuperating the paths between farm fields, it flanks the river in one section, triggering a process of valorisation in this fluvial environment. Its pattern draws along a number of urban gardens, small fragments with a minute grain, offered in concession to private citizens. The two dimensions of the urban and the extra-urban intersect and are lost within the territorial vision of the city and the all-encompassing notion of the urban landscape. This path offers spaces of rest, areas for dining, services and spare parts; it is possible to rent or park bicycles. A lightweight suspended bridge over the Via Emilia draws the path across the river, where it connects with the VENTO bicycle path, in its central section between Venice and Turin.

The environmental infrastructure of the bicycle -pedestrian path draws in its wake small fragments of ‘urban agriculture’. It may be raised or set into the ground. It employs ecologically compatible materials. In correspondence with level changes or scarps, and where the path runs along a ridge, wooden platforms offer services that can be easily assembled/disassembled. They are set at the lowest level and connected via steps, sloping planes, small terraced seating areas: temporary structures are located at level changes, continually leaving open views over the landscape. The majority of the path will be shaded by trees.

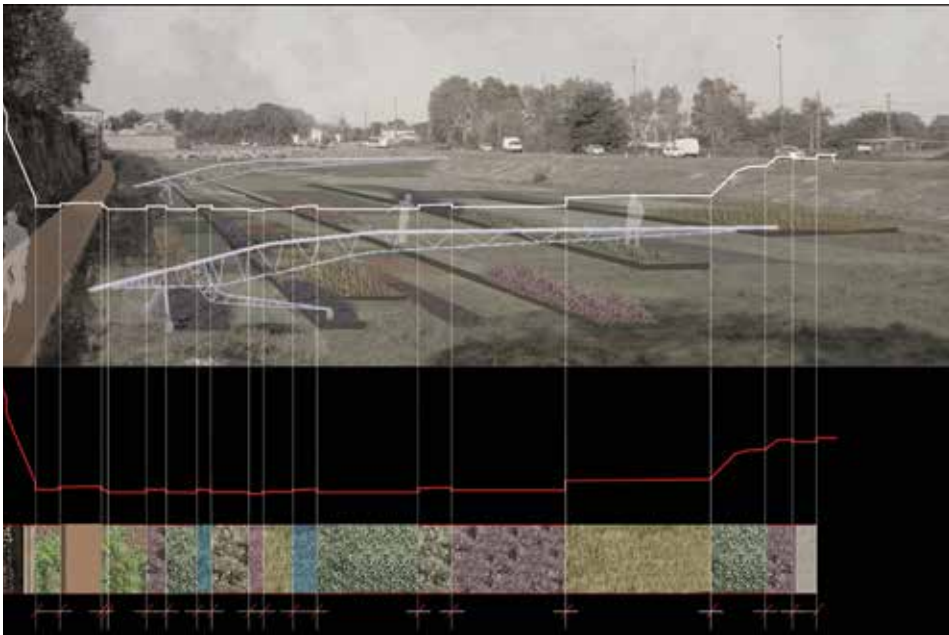


Fig. 3 *Extra moenia*

The presence of an important infrastructural node and the forecast downgrading of the current railway to a light metropolitan transit system improves accessibility to this section of the *Parco delle Mura*. This condition renders plausible both the organisation of an elevated number of parking spaces and the idea of a hypothetical stop along the light rail line serving this important hub. It reinforces the territory's characteristic of being a centrality.

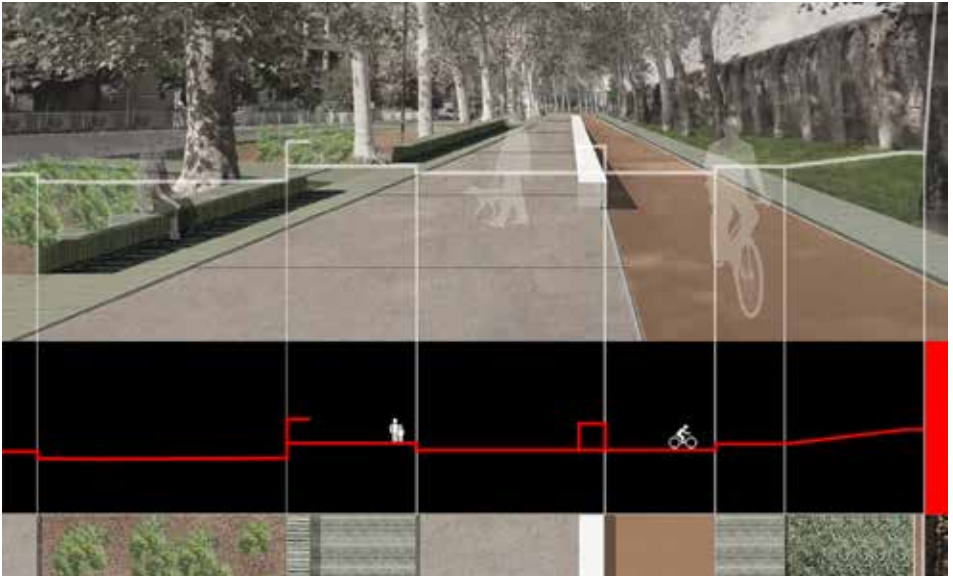


Fig. 4 Promenade along the historical wall

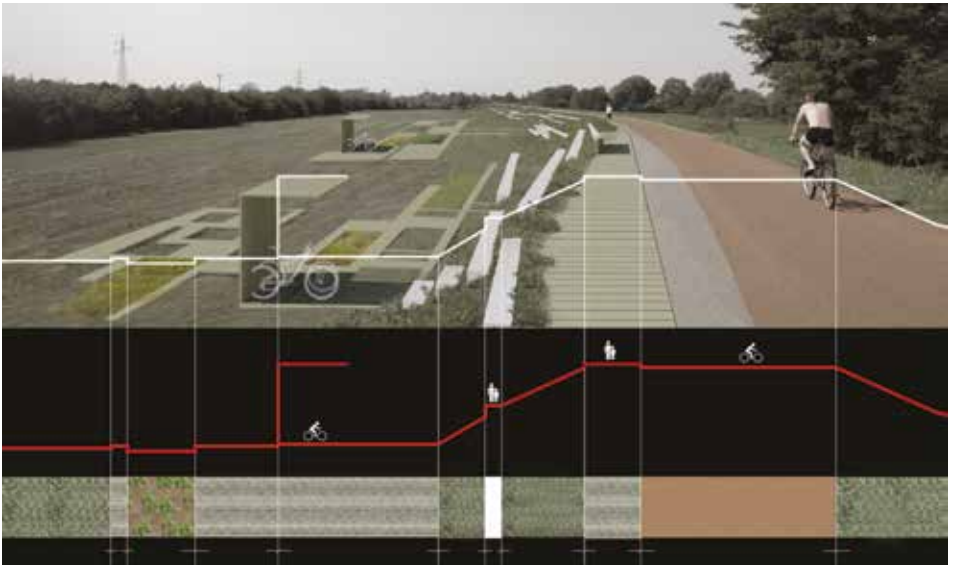


Fig. 5 Cycle track outside the walls

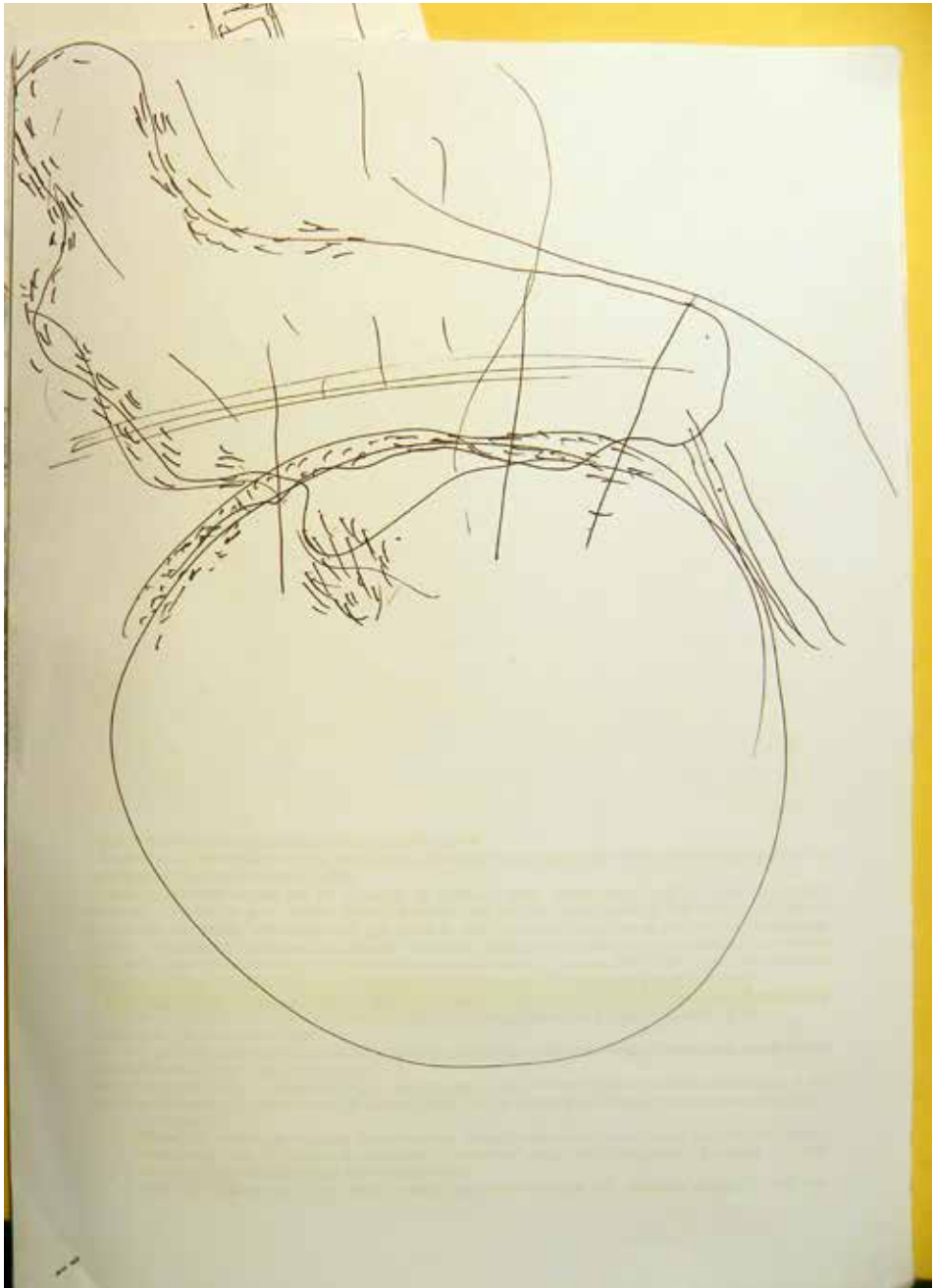


Fig. 6 Double loop concept sketch by Carmen Andriani

## Concept

Designing the soil, the project areas. The project structure is organised in parallel bands. The section of the walls, the street, the railway and, finally, the highway, delimit a series of long adjacent fields. The prevalent direction is longitudinal.

Notable variations in levels along transversal sections design a corrugated ground plane.

The project accompanies and improves some of these already existing conditions. It is possible to distinguish areas of priority interventions.



Fig. 7 Perspective

The *vallo* and the area dedicated to parking. The system of the *vallo*, the depression along the exterior of the walls, is organised in extensive vegetable and flower gardens. This pattern runs parallel to the infrastructures outside the walls and the line of the walls themselves. The soil is corrugated by changing levels that respond to the checkerboard of gardens accentuating the condition of artifice. It drops down in long, slow ramps, with improvised itineraries running between hillocks and a possible labyrinth. This system of the *vallo* is the active part of the 'gardens', it is the playful, didactic, aesthetic, chromatic, tourist, display component. Below, the project suggests excavating beneath the road to connect to the parking area, positioned along both sides of the area used for skeet shooting.

In the vaster area the project foresees a mixed function that integrates parking with spaces for fairs/markets and the extension inside the area of a consistent amount of landscaping. The project may also include long canopies over the parking areas covered with photovoltaic panels, used to reduce, if not eliminate, the costs of illuminating this section of the walls and the *vallo*. Equipped with temporary stalls, this area can be used to host territorial markets/fairs. The hypothesis to downgrade the rail line for use as a lightweight metropolitan system would legitimise the need for a new station in this area, reinforcing its role as a hub of exchange and connection with the VENTO system. In the end, this decision justifies the idea of presenting the *Parco delle Mura* as a territorial centrality. The site of the former factory and the former barracks with the annex of the large elliptical field are restored to the city and thus represent an opportunity to re-qualify this urban fringe. This process may occur through an important environmental requalification suggested by the project, and the valorisation of the interclused open spaces, intended as spaces of exchange (the market on the site of the former barracks) and shared social interaction (greenhouses, urban gardens, areas for play, rest and sport, services for residents on the site of the former factory, currently the object of remediation). Inside the city walls, the bicycle-pedestrian path defines ample space for walks, with small services and trees. It includes the bastions, the gates, eventual interior spaces, recovered for didactic purposes and tourism. These spaces can be used as info points or mini-museums situated along the bicycle-pedestrian itinerary. The requalification of the city walls is above all a process of environmental requalification.

### The system of the city walls

For both the *vallo* outside the walls, and the system inside the walls, the project takes into account the necessity to valorise the entire system of the city's ancient defences, pursuing a "discrete" and "adaptive" approach toward the existing. The north-western section of the walls, better conserved over time, is an integral part of a project focused on inverting a condition of being a "separator" between the oldest nucleus of the city and the agricultural territory, reinterpreted today as an urban "threshold" and point of connection between different, disjointed and under-utilised environments. The proposal calls for the functional redefinition of the areas belonging to this section of the walls, for cultural, recreational and productive activities and tourism. Rather than proposing the insertion of important new permanent structures along the walls or inside the bastions, the project favours the use of lightweight, reversible systems with a low visual and environmental impact, integrated with the existing elements to be conserved and, where possible, converted to host new activities. Small, enclosed modular structures, such as greenhouses, facilities and lightweight roofs and canopies, spaces for rest, water misting systems, similar to hydraulic sprinklers used to irrigate farm fields, may constitute a codified kit of parts to be repeated throughout the area of intervention. An "architectural" integration with the more general "agricultural program" linked to the theme of slow mobility. Borrowing technologies from the world of agriculture signifies assuming technical elements and devices that, instead of being concealed, become an integral part of the project, generating other additional elements (walkways, suspended structures, links to the pedestrian-bicycle path, stalls for fairs and markets, small temporary services) reinforcing the idea of a new, transformable and adaptable territorial urban context.



*Fig. 8 The park of the wall / multifunctional space out of the vallo - outdoor cinema / multifunctional space out of the vallo - parking and fair*

Furthermore, the proposal acts on the functions of the Farnesian bastions, changing them in different ways: the Campagna bastion is integrated in the linear urban park with a new green arrangement and a new pavement that connects it to the main cycle/pedestrian path. Within the Borghetto Bastion, a small museum structure dedicated to the history of the defensive system of the walls, and a refreshment point in the adjacent building currently in disuse. In the section of the most compromised walls, where Bastione San Sisto lies in front of the Pontieri area, after a proper consolidation of the structures, small service and information structures are proposed to raise awareness on the "double loop", or rather the urban agricultural system intercepted by the cycle/pedestrian double circuit, within and outside of the walls. The project introduces a new system of lighting of the walls at night, and where these have been cut off from the roads of via Campagna and Via Maculani, traces have been marked on the ground to highlight the ancient imprint of the walls while at the same time slowing down the crossing traffic.

### New territorial armor

The project also involves the redefinition of the infrastructure system (accessibility, parking and transportation), integrating it into the landscape-environmental system (as a city of the Po, Piacenza

in the river and ecological networks) and the cultural system (as a city of the via Francigena, Piacenza in the networks of cultural routes).

Stepping away from the competition area, which comprises of about 14 hectares and 2,000 supposed inhabitants, the project directly affects an extensive area of about 50 hectares, and indirectly affects the entire urban and suburban territory through the narrow connections to the system of areas subject to urban regeneration (via Francigena, the ring of the walls, urban front on the Po, areas north of the station and from Piazzale Milano towards the historical center)

By interpreting the predictions for the conversion of the Piacenza-Torino railroad into a metro line, with a stop in front of Porta Borghetto, and in view of the dismantling of the urban section of the highway with the creation of a by-pass between Milan-Bologna and Turin-Brescia, the intervention strategies open up to new territorial relations and include areas of great landscape value.

The project pursues the reorganization of the internal viability of the Farnesiane walls with the pedestrianization of certain segments, a new road on the margin of the reclaimed area, the reorganization of existing parking, and the reduction of the roadway in favor of the cycle/pedestrian circuit.



*Fig. 9 Market coverage, reuse of abandoned barracks*

### **Cultures and cultivations**

The proposal of historical crops of fibre plants and the recomposition of the layout of fields rimmed with mulberry trees and articulated vegetable gardens suggests a landscape of perfumes and colors, of laborious quietness. The landscape from which we imagine the products of the countryside were introduced within the urban walls, right through the Strada di Campagna (now Via Campagna). The set of cultivated spaces, whether gardens or fields, draws a dynamic composition of odors and colors. The different crops that cover the soil all year round change with the season, associated with evergreen blooms.

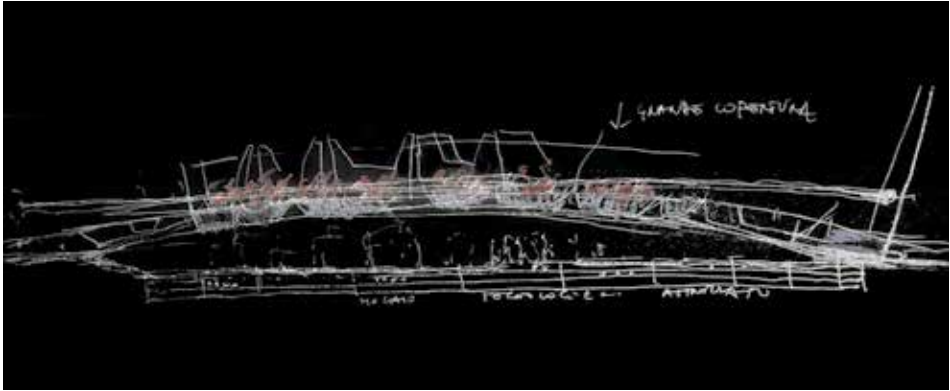


Fig. 10 Detail sketch agricultural beams by Carmen Andriani



Fig. 11 Urban greenhouses

The vegetable garden is thought, as tradition suggests, to offer products and enjoyment in all seasons. The arrangement of fruits and flowers follows an ancient compositional calendar, and from the spontaneous shrubs approaching the river one can find different vegetable colors, such as blue and violet from berries and elderflowers.

From a technological and material point of view, the project readapts the technology of farm maintenance and watering systems. These machines are an integral part of the provisional landscape of the new design and generate a number of added elements such as walkways, hanging structures, junction intervals, small bridges.

### **Energy/ Environment**

From an environmental point of view, the project operates on several, strongly integrated levels. The drastic reduction in automobile traffic on one hand, and the strengthening of the landscape system of the Walls on the other, both contribute to the bioclimatic re-balancing of the area and the subtraction of fine particles through new cultivations and plantations. From an energetic point of view, the use of an integrated system of production of electricity and heat from biomass waste (like pruning of urban parks or maintenance of the river bank, but also agricultural remains or crops dedicated to recovering marginal terrains)



### Technological system

All designed spaces will be equipped with technology-friendly systems to further understand the site. In addition to the provision of wifi units and QR codes on signs, a new localization system based on GPS coordinates is provided, which will work with the geo-referencing system.

[...] When you enter the park you receive an input that will explain the complete project of the park, the history of the walls and other information, all without the need to photograph the various QR codes. Thanks to the help of your cell phone, moving along the park you will be able to identify the path of various cycle/pedestrian tracks, their position, and various data regarding length, travel times and so on. Real-time data from a dedicated central unit will provide data on the area of Piacenza such as parking availability, business hours, information on cultural activities, etc., in order to tighten the relationship between intangible technological infrastructure and territory, increasing its efficiency.



Fig. 12 Final plan 2

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## **Participation and landscape design Representative tools and applications**

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### **Abstract**

The European Landscape Convention states that landscape is “as perceived by people”, so is the community that defines the landscape (Art.1 10/2000/CoE). Understand the relationship that binds the community to its landscape is crucial to understand its meanings and take action on it. The representation tools can be useful in this regard to present, describe and communicate the landscape. The call aims to promote the instruments for connecting the strategy of participatory planning for the landscape and governance of local resource. Participation is among the most promoted strategies by European guidelines, but there is a big gap between the ability to generate participated interest and its actual application in planning. Accordingly, the call is to talk about application for increasing shared governance and find tools that could link the gap between inclusive strategies and real planning moments, in particular open-map applications together with representation tools are able to be the instruments to link that gap. Open maps could be the tool for collecting the shared decisions because share information in them is as easy as posting on a social. The representation tools and their capacity to be multipurpose, flexibility and universal could be the vehicle for reaching the standardization of the approaches to investigation and intervention in this theme.

### **Introduction**

Governance practise focus, in last years, on sustainability. This sustainability is inextricably associated with the involvement of communities in decision-making. There is a strong interest in all those strategies that implement the exchange between decision makers and those who suffered them. In this type of planning link European directives for 2014-2020 programming focused on the Cohesion Policy which identify the participation and cooperation as foundational to the sustainability of all development strategies<sup>1</sup>. The issue of governance of the landscape seems dissociated from the issue of sustainability, but, well clarifies Kevin Lynch, “read a place means reaching out what happens to you, what happened to you and what you might happen”<sup>2</sup>, before and real condition of sustainability. The layering of territorial signs and meanings symbolically represents the paradigm of sustainability because it is the result of a selection process that has relentlessly played the time, only safeguarding the sustainable and destroying the rest.

<sup>1</sup> European Programming 2014/2020 (2017) [http://www.agenziacoessione.gov.it/programmazione\\_2014-2020](http://www.agenziacoessione.gov.it/programmazione_2014-2020). Accessed 2 Feb 2017

<sup>2</sup> Lynch K. (1984) Good city form. Harvard-MIT Joint Center for Urban Studies Series, Boston

Necessary condition for smart landscapes is the adoption of sustainable processes. A process, a strategy, therefore is sustainable if it can be sustained by the environment, the territory, the landscape, and by the community<sup>3</sup>.

The goal of the method is supporting participatory decision making with communities at the centre, in relation to proposals promoted by local organizations such as the “Contratti del Paesaggio” (Landscape pact) (CdP). The CdP is a negotiated territorial planning process, pactional and voluntary, for the governance of sustainable development processes of certain territories and retraining of landscapes that require action by the institutions and public and private stakeholders<sup>4</sup>. The search for new tools and methods becomes important to identify new instruments to bridge the gap that persists between the actions to stimulate interest involved and the time of the actual design and to found the participation on the places and their meanings. Then again, the current visual technologies are able to afford digital models with cultural and economic heritage of a territory crowd information in different formats from multiple sources and integrating them with online database<sup>5</sup>. The modular structure of the project allows the process to become repeatable and applicable to different realities, it can become a tool for communicate values and restore the meaning. The method provides a new basis for conducting research and analysis on the territories, the environment and the landscape.

## Method and Research Process

The widespread availability of advanced technological tools and software that tend more and more towards the inter-operability and multi-compatibility<sup>6</sup> permits to use tools that involve local communities in decision-making process and analysis, through the representation. Draw a map of an area is one of the basic actions to describe it<sup>7</sup>. To give the community the opportunity to do this in real time and characterizing the elements even with functional and quality tag makes these maps rich on a new type of data with the perceptual value because it collected through the experience of those who live in the landscape. The analysis and comparison of these databases with parametric design software allows developing new strategies based on optimizations dates. The identification of the instruments was based on their capacity to support a landscape analysis method the most possible adaptable, participatory, expeditious, economical and accurate for creating digital models to improvement the places. This experimentation concerns the specific case of “Contratti di Paesaggio del Trasimeno”. In particular, we tried to put together a set of tools with which they could meet the needs of operational strategies identified for the “Contratti di Paesaggio del Trasimeno” and reported in the “Atlante degli Obiettivi”<sup>8</sup> in the specific case of Castiglione del Lago’s municipality. The toolkit has been tested on two different areas: urban and rural-natural.

## Quick Survey to modelling the boroughs of Castiglione del Lago

First level work is the 3D reconstruction of Castiglione del Lago. The base model derived the information in the online database, open data, available in [www.openstreetmap.org](http://www.openstreetmap.org) web portal. The quality of the data from OSM is vector nature and number; however, limiting ourselves to

<sup>3</sup> European Landscape Convention, Cap.1, art.1 let A. CEE/2000.

<sup>4</sup> Bianconi F. et al (2016) PAESAGGIO, TERRITORIO, CONOSCENZA, Dall’Atlante degli Obiettivi della Regione Umbria ai Contratti di Paesaggio del Lago Trasimeno. Paper presented at the 16th CIRIAF National Cong-gress, Assisi, 4-9 April 2016

<sup>5</sup> Calvano M. (2016) 3D reconstruction of the city of Amatrice. An “instant modelling” operation. DISEGNARECON 9/17. Available via UNIVAQ, <http://disegnarecon.univaq.it>. Accessed 2 Feb 2017

<sup>6</sup> Bianconi F. (2008) Nuovi paesaggi: rappresentare seconde nature. Morlacchi, Perugia

<sup>7</sup> Di Fidio M. (1993) Architettura del Paesaggio. Pirola Editore, Milano

<sup>8</sup> Regione Umbria – Atlante degli Obiettivi, Focus Tematico 1 (2015) Italy, Umbria Region. <http://www.umbriapaesaggio.regione.umbria.it>. Accessed 2 Feb 2017

the vector data would be lost additional metadata associated with the map elements (height, type, usage, state of deterioration). To prevent loss and to take advantage of the possibility of their organization for the computerization of the model, using Elk<sup>9</sup>. The Grasshopper plugin, it has a component that can read the file downloaded like input, generating as output in CAD numerical and textual relations associated with the vector geometry previously obtained. These procedures for the construction of the model, will be able to use the information supplied from the metadata associated with each perimeter reconstructed (Fig. 1).

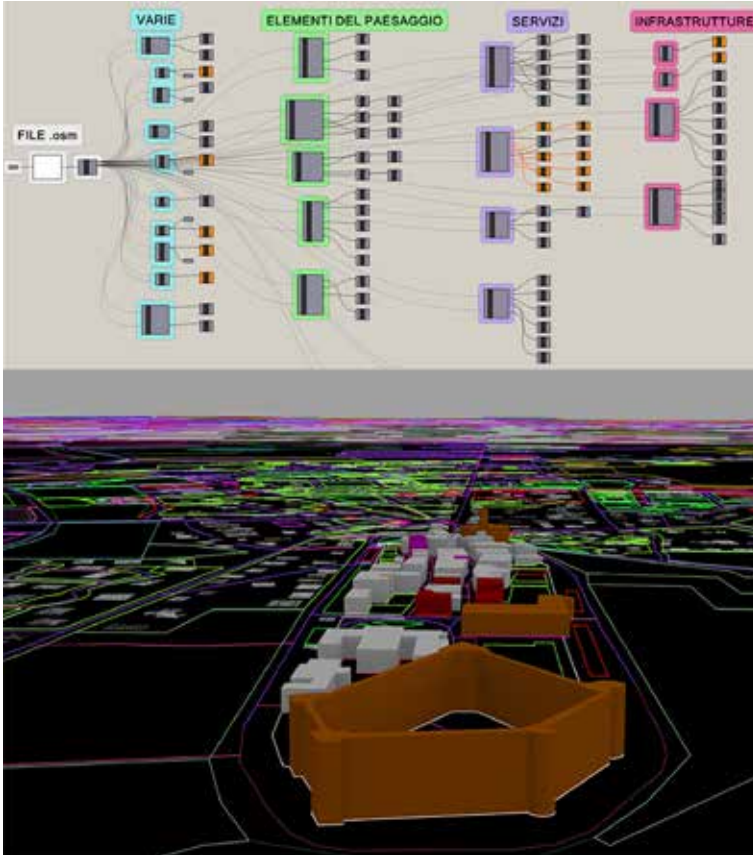


Fig.1 Structure of the file which interprets the OSM database with Elk plugin in the 3D model.

The outcomes by photo matching from SketchUp-Make add to the model a greater level of detail to the street fronts of Corso Vittorio Emanuele. As photographic support were extrapolated images obtained from videos taken from volunteers with the action camera GoPro Hero 4 with the setting to 1080p video resolution, 30 fps, POV Narrow. Using GoPro Studio software to remove fish eye deformation. The next step is post-editing of full video to selected frames useful for representation. With this method it was possible to reconstruct two hundred meters of street fronts in about 24 hours (3 days of 3D modelling) (Fig 2).

<sup>9</sup> Elk, (2017) <http://www.food4rhino.com/app/elk>. Accessed 2 Feb 2017



Fig. 2 Results of quick 3D modelling from different tools.

### Networks' optimization

For this simulation of central importance were the use of open participatory map and their integration with modelling tools and parametric analysis. The first step was the preparation of the map with the involvement of volunteers in place who have contributed with their knowledge and experience of the place and their willingness to make efforts in materially draw the online map of Castiglione del Lago, the initial state of the map showed only road tracks and the Castiglione centre. After a brief introduction to the OSM. To them we have simply asked to draw the places they knew better and to tag uses and characteristics of the inserted element. At the end of the drafting process of the map, we have verified the correctness of the entered data with JOSM (free software and open source GIS OSM in style).

At the end of data collection, the map of Castiglione del Lago municipal area is full of all the elements that represent the town, while for the inventory of goods and services across the country, comparing the data obtained by the associated map those obtained in the traditional manner, it is seen that some information did not match. In particular, there is a significant imbalance between the elements of historical and cultural interest in the OSM database and catalogues attached to the Regional Landscape Plan. Continuing our discussion, it was verified that the map of OSM have been properly catalogued almost all the churches, large and small, in the municipality but lack any kind of recognition all the other elements that are catalogued in the PPR as a cultural-landscape relief.

From the database<sup>10</sup> Open Data by the Region have been downloaded lists and PDF maps of the assets relating to the territory of Castiglione del Lago in terms of: archaeological sites and elements of the ancient landscape<sup>11</sup>; cultural Heritage and related protective measures pursuant to Legislative Decree 42/2004 and previous legislation<sup>12</sup>; villas and Historical houses in the PUT and villas that make up the “regional network villas parks and gardens”<sup>13</sup>.

<sup>10</sup> UmbriaGeo (2017) Italy, Umbria Region. <http://www.umbriageo.regione.umbria.it/>. Accessed 2 Feb 2017

<sup>11</sup> Pagnotta W, (1984). *L'Antiquarium di Castiglione del Lago*. Giorgio Bretschneider editore, Roma.

<sup>12</sup> List based on the data provided by Soprintendenza ai Beni Architettonici e Paesaggistici dell'Umbria (2017) Italy, Perugia. <http://www.umbriageo.regione.umbria.it/>. Accessed 2 Feb 2017

<sup>13</sup> Piano Paesaggistico Regionale Umbria Allegato n°6 del PPR (2017) Italy, Umbria Region <http://www.umbriageo.regione.umbria.it/>. Accessed 2 Feb 2017



Fig. 3 In green color the elements with Historical Tag included during the mapping party, in red those included by PPR.

Based on these lists we integrated the map in the missing information. Of these only three goods were already recognized as well in the OSM map value: the Rocca del Leone, the Church of Santa Maria Maddalena in Castiglione del Lago and Palazzo Moretti in Pozzuolo (Fig. 3). After a period of “evaluation” of the goods we entered the single quotes on individual elements in the model have been reported (Fig. 4).

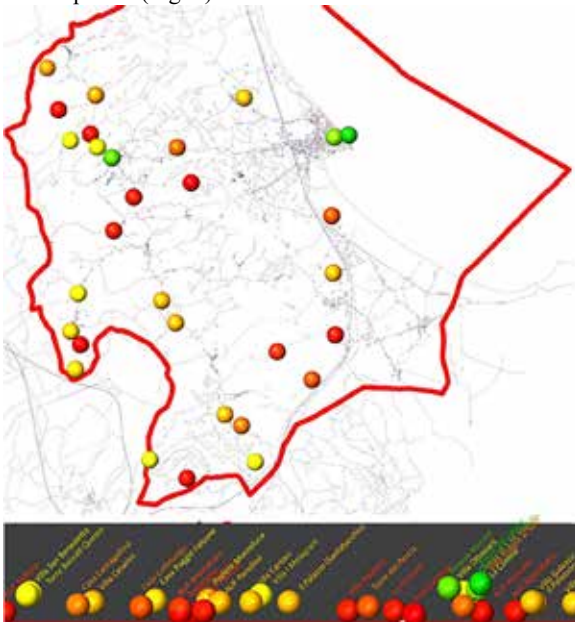


Fig. 4 Representation in the model of good to put on the net.

The goal is to get an optimized path to interfere with systems of the assets of the territory. At this stage come into play for Grasshopper parametric analysis tools. In particular, the tools to identify, based on the evaluation, the assets to be included from time to time in the path. The purpose of the course is to identify a tourist circuit that expands the offer value to those cultural assets that are undervalued and unrecognized even by residents. The desire to enhance the tourism offer “expanded” the area is not an end in itself, but rather it is supported by studies on the evolution of the landscape Castiglione, both from the local tourism offer current situation. The first case refers to the preliminary studies that show the Castiglione landscape as made up of multifarious levels and whose dominant feature is the relationship between history, environment and buildings that acquires its centrality in the territory of Castiglione del Lago, where a system of urban centers minor developed in the course of history acquires in its uniformity and connectivity to a value greater than the same singularity otherwise present and therefore wants to exploit this complexity for consequentially also implement the singularities. The second element that characterizes the whole territory as a space where the tourist offer is unbalanced, it is timely dissemination of accommodation of rural character that permeates nearly constant density throughout the administrative land, as opposed to offering tourist services (museum, information points, etc.) which is concentrated almost entirely in the only urban centre of Castiglione del Lago.

To generate the route we were asked Grasshopper to relate as many points of interest of the area in relation to their assessment and their distance apart, with the use of specific tools and in particular the Shortest Walk which is able to locate within a network of curves the shortest path that connects a series of points within this network. We ask to the software to use the road like network (always provided by the OSM database). The total route length is 52.4 kilometres. They were identified as eight elements of landscape interest whose value could mean a potential tourist offer expansion for Castiglione del Lago.

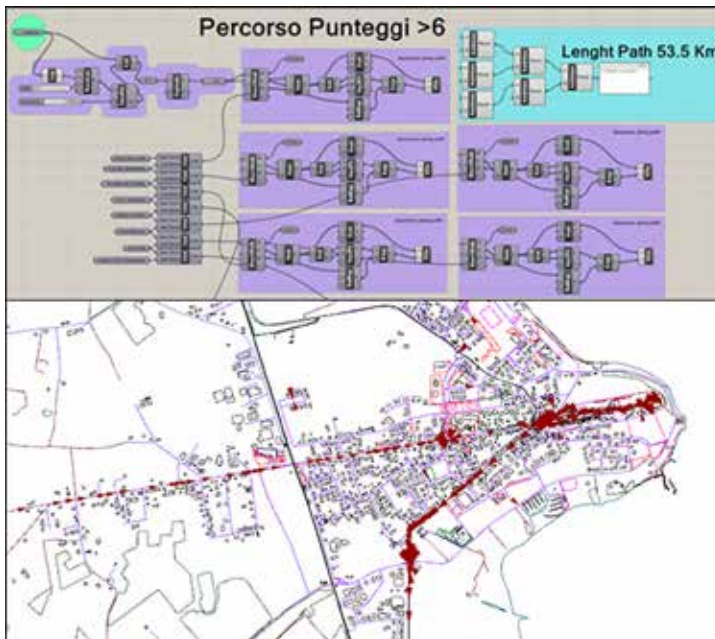


Fig. 5 The process of ShortestWalk in Grasshopper



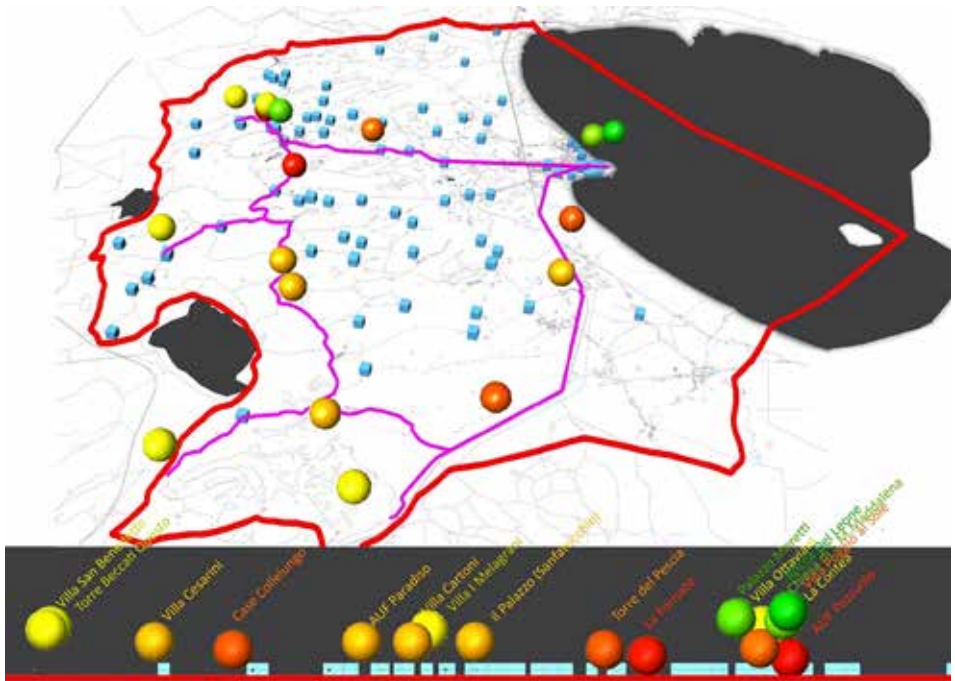


Fig. 6 The network of goods to be enhanced; in blue the accommodation structures; in rose the path.

## Conclusions and Results

The ability of the analytical representation tested stood as a methodological tool replicable, which well exceeds the application design proposal segment, opening up to multiple uses. To demonstrate the applicability, reference was made to the various projects proposed by competent authorities for the Agreement of Lake Trasimeno landscape, and we showed that the versatility of the tools to be able to lay the foundational conditions for the development of the path. With these methods, it is possible to identify links between the image and its interpretation in the form, so we can manage the analysis at the urban scale and territorial. Define in this manner the value of a map also participated, in a method that allows varying between two and three-dimensional representations through interaction among the identified tools, ensuring the workability of information and data from multiple sources simultaneously. In fact, the research proposes a new definition of smart territory as its connotation of a place capable of telling his stories and reapply in new ways. In this Osense, the investigated method arises as a lending instrument. The analysis thus conducted on the landscape and its sharing aims to make understand the relation-ships and restore its meaning because the landscape gives identity to people who live and only by understanding this relationship, you will be able to sustain its development.

The information provided through the use of Open Map and versatility of the OSM database, allow to assume many diverse uses: the same data included in the map to make this analysis can be used to create apps to promote tourism, updated, and represent a new way to tell the territory. Another interesting application is related to the mapping of the territory in terms of its accessibility. OSM Projects with this theme, we have already been successfully launched by the German community

of the OSM<sup>14</sup> [15] which is drafting the dedicated tag systems to make the definition capabilities of the complete map from this point of view. Regard-less of the tourism sector, we could take into account information deductible from the database concerning the condition of the urban fabric. The “dis-used” value, for example, gives the possibility to users to indicate when any element of the territory, which is a commercial building, or a green area appears unused or abandoned. By integrating these data to the traditional ones you might find new strategies against degradation, for example: urban riarrredo plans, incentive systems to reuse / restoration of buildings, identification of green areas to be given in concession to private with the goal of recovery ‘area and its consequent enhancement (etc.). These are just some examples of how a participatory map can serve as a new tool for analysis and planning of operations in the framework of landscape enhancement. The chosen model gives the opportunity to create dynamic interactive perspectives that move between real and virtual, immersive spaces express the potential of a community. A repeatable digital urban model, able to keep the morphological memory of spaces and architectures and then become content of communication projects that tell the city and the data that they have built.

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# What if people draw the landscape?

## An environmental psychology approach to urban identity

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### Abstract

Environmental psychology is a wide interdisciplinary research field, risen in the '60, in which psychological issues, urban planning theories and ethnographical studies meet and create an original perspective on the cognitive and physical relationship between people and the space. According to researches developed by Bateson, Brunswik, Gibson, Kaplan & Kaplan, Ittelson and Lynch people, experiencing and inhabiting a place – produce a cognitive mapping of the space and build a shared image of it. This common images represent the social identity of the territory in which history sedimentations, values and symbols are embedded, recognized and perpetuated.

The paper proposes an experimental experience made in the Milano-Bicocca district. The re-search project, according to the Francescato & Mebane model, adopts qualitative research methods: a representative test and a spatial task-based user test to bring out the image that social groups have. People were asked to draw the space tuned up to their experience and memory. Drawing therefore become, on one hand, the research tool to investigate the spatial and social perception of the territory from a bottom-up point of view and the expressive and common language to represent the visual and symbolic identity of the urban space, on the other.

### Environmental psychology

#### A hybrid discipline

The term environmental psychology was firstly introduced by Will Hellpach in 1935 in his book *Geopsyche. Die Menschenseele term Einfluß von Wetter und Klima, Boden und Landschaft*.

In the research started in 1911 Hellpach had an intuition of the further evolution of a rising discipline able to hybridize different cultural areas such as psychology, perception, environmental studies, architecture, urban planning, sociology, anthropology. He stated that “perhaps it is not far from the time when scientifically studying the influences deriving from the environment created by the technique, such as rooms and furniture, home and atrium, street and square, road-ways and vehicles, phenomena that we can call ‘tectopsyche’ next to those socialpsychic and geopsyche, with which we complete the circle of environmental forces that shape our being from the inherited mouldable patrimony” (Hellpach, 1960: 16).

Environmental psychology developed mainly after the Second World War and in the '60s moving from laboratory-setting studies to in field research elaborating and fine-tuning appropriate investigation methodologies.

Personalities such as Bateson, Brunswik, Gibson, Kaplan, and Ittelson gave their contribution to the conceptualization of the theoretical aspects and the inquiring methods exploring a broad range

of subjects involving the relation between individuals and the environment, individuals and social groups and constructions, social groups and the environment.

In particular, Bateson (1972) investigated the concept of systems' homeostasis, made by individuals, societies, ecosystems, and of schismogenesis understood as the emergence of divisions within social groups. Brunswik works, presented in 1947 in *Systematic and representative design of psychological experiments*. With results in physical and social perception, was mainly focused on methodologies and variables definition and correlation. Nevertheless, his contribution to environmental psychology presented in *Wahrnehmung und Gegenstandswelt* (1934) pointed out that "psychology should give as much attention to the properties of the organism's environment as it does to the organism itself" according to his probabilistic functionalism theory in which the environment is a strategic factor. The '70s were very fertile years for the growing culture and experimental studies: William Ittelson better defines the discipline in itself with *An introduction of environmental psychology* (1974). Beck & Wood (1976) worked on the relationship between urban space and mental maps and the psychological processes that lead to cognitive transformation of spatial information. Kaplan & Kaplan (1977) introduced the concept of humanscape. Further studies on spatial and cognitive perception of spatial interaction and relations were investigated by Kates (1970) and Buttimer (1980).

### **The image of the city**

The work of Kevin Lynch *The image of the city* represent the connection between environmental psychology and urban planning and design disciplines.

According to Lynch, the public image of a city is the mental framework shared by the majority of a town population; people who live or enjoy of the same physical urban landscape produces the possibility to share the same image of it. It was supposed that the people that inhabit the same district and share a common culture have also a common image of it and this can differ from the public image of other citizens. It seems indeed that "for every town it exists a public image that is the superimposition of a lot of individual images" (Lynch, 1960). These individual images are indispensable to be able to live in the actual environment and to collaborate with the other people. The feature of the urban landscape that produces the identification of these elements is the legibility: how easy is to recognize its parts and how they can be organized in a consistent system. Having a direct insight of the shared mental model of a common space could therefore a good approach to urban and space planning from a user-centered perspective. Bagnara presented in his work focused on *Environmental psychology* (Bagnara & Misiti, 1978) the research approach adopted by Francescato and Mebane in an in field experience.

The two authors adopted a psychological approach based on qualitative and representative research methods to understand and let people directly express the cognitive model that they have of a space. Starting from the already cited work of Lynch the two authors used visual parameters to identify the social and psychological values of an urban space. Identity, structure and meaning are the key elements to inquiry to understand the cognitive dynamic on which people develop their own image of the city. The project introduced and additional interpretation of a phenomenon: time, according to the studies conducted by Parr (Francescato & Mebane, 1973) in the 60s.

### **When people draw the landscape**

According to Lynch studies and Francescato & Mebane research a qualitative research plan has been established based both on user test task based method, coming from the cognitive psychology and user-centered design approach, and on a survey to support a representative test based on environmental psychology discipline.

The first experiment of a series was conducted in 2005-06. It was limited and focused on way finding activities, aimed to propose a new signage plan of the Milano-Bicocca campus U6 university

building. Subject where divided in 3 groups: newbies, intermediate and experts depending on the knowledge that they already have of the place. Then they were asked to complete some spatial tasks, such as going to a Department office or find the vending machine to have a coffee. Time of execution and failures were recorded and compared and people were also asked to draw a map by memory before the test (newbies after they had experienced the space). The results of the research have been presented at the VIII Color conference (Bollini, 2012).

The has deepened and opened to the wider scale of the urban suburb. Social group now involved where four (with two sub-groups): residents (1) of the Milano-Bicocca district, workers (2) both in services and industries and the advanced tertiary sector, city-users (3) and university world (4) made by students, professors and researchers, technical and administrative staff. The findings were used in meta-design activities aimed to conceptualize possible digital interfaces to experience geolocated content filtered according to group interests and cognitive perception of the places, and presented and discussed at ICCSA 20011 (Bollini 2011b).

The methodology was, then, tested on a urban scale in the conurbation of Rimini and Riccione.

A complex a various environment characterized by many and deeply different identities. The historical city-center of Rimini with the roman monuments, medieval civic building, Renaissance heritage and a living contemporary heart. The Marina and the Riviera romagnola summer culture, in balance between the post war Italian culture of reconstruction and family holidays and the contemporary happy-hour and pink night joie de vivre. The pleasure district, as named by Bonomi, a non-lieu par excellence, according to Marc Augé (1992), lived by night with no connection with the real and daily place. And finally the fair district hardly connected with the rest of the urban structure. The research project conducted in 2007-08 reflect on the perception of people according to their social group and the consequent representation of the space. Using representative test and qualitative interviews the work presents the various mind images produced by the interaction between people, the environment and the social groups. The draws of many subjects involved well illustrated the shared image of the city (see Bollini 2011a).

A further experiment investigated orientation issues in the complex environment of the university and its satellite campuses and buildings, to develop a mobile app connected to RFID/eBeacon devices to support users both in way finding and in decision-making activities (Bollini, 2014, 2016).

## Methodology

The eliciting activities are aimed to let people drawn and visually describe the image that they have mentally built and compare results to understand if there are recurrences and significant correlations inside homogenous social groups.

Mapping the common elements or similar misinterpretation and forgetfulness gives to urban planners, architects or co-designers important insights on the perceived environment. That means how people represent themselves the space they live in, which are the symbolic and totemic elements, the common values and the shared identity: the social genius loci embedded in their mind. The experiment is made by a qualitative research activity, in this case it is a written questionnaire, and a representative test: people are asked to draw by memory the map of the place.

The questionnaire, based on the Francescato and Mebane format, is composed by 7 questions and a Likert scale (1-5) to express an *emotional* opinion on the overall appreciation of the place.

The questions are:

1. Closing your eyes what comes to your mind, what do you see thinking to the place?
2. What is important of the place?
3. Where you are not in the place which are the 5 things you remember?
4. What do you like of the place?

5. What don't you like of the place?

6. Lists the distinctive elements (streets, buildings, you think make the place more familiar?

7. What would you change of the place?

Then subjects are asked to draw the map of the place according to their memory.

The textual results must be analyzed cluster words depending on semiotic similarities to create smaller an significant label to me sure recurrences. Maps must be analyzed to identifies common patterns or dissimilarities. Matching verbals and visual results gives a significant idea of the perceived and experienced identity of the place by people social groups according to Lynch.

In 2017 the experiment has been executed again to better defines the importance and the role of visual representative test. According to the Stea & Wood (1971) observations, the research gives a strategic role to sketch/drawing techniques as an inquiring tool. Secondly the question-naire is used to understand if there are significant correlation between the maps drawn by subjects (*representation*), where people show to visitors the important places of the city, and the interviews (*mentions*). Finally, one of the item to be investigated and discussed is if less trained individuals were less able or less inclined in the use of this expressive language: the low level of drawing abilities could be a limitation in taking part in the experiment. The detection method aimed to identify the whole scheme, the mental images that inhabitants have of their own city, is organized according to two criteria. On the one hand, the image is considered as "the idea that people have of the physical shape of the city (it could be brought out through graphic methods: subject are requested to draw a map)." On the other hand, it is intended as a scheme "the conceptual representation of a city including symbols, beliefs, and activities." Spatial user testing activities and sketches according to Stea & Wood model have made possible to read the images shared inside the social groups letting them better cluster for the place perception and urban brand construction too.

## Experiment and results

The first phase of the new experiment star from the *university world* and specifically on stu-dents. 50 subjects where involved in the study chosen in the Psychosocial science of communi-cation degree course at University of Milano-Bicocca. People where asked to fill the questionnaire and draw the maps specifying anonymously how long they have been attending class in the Milano-Bicocca district. This data allows to classify them in 3 different level of spatial knowledge and competence according to previous studies re-sults. People attending university class for less than six months (a semester) were considered newbies. The second year students (at least 3 semesters) were named *intermediates* and people with 3 years or more, *gurus*.

Of 50 answers 11 were incomplete or the average frequency time was missing, so they were not considered in the study. The average age is 21 years old and just one subject comes from abroad (an Erasmus student).



Fig.1 Subjects involved in the research: a) Newbies: 0-6 months; b) Intermediate: 18 months; c) Gurus: more than 30 months.

Answers to the 7 questions were recorded, analyzed and clustered according to a semantic analysis of the words used to describe the physical environment, the daily places and activities of the students life and feeling and emotions both referred to the place experience and personal life.

The answers were then divided and organized in sub-groups according to typological criteria:

Elements referred to physical space of the district also in emotional terms presented in figure 2:

- a) Campus, building and overall structure: answers and expression directly describing the physical space of the district
- b) District services: places often outside the campus, such as Bicocca Village, recognized or experienced by subjects
- c) Architectonical values and environmental experience: such as the perceived identity of the places described through visual attributes, colors, squared shapes act, traversal spatial elements, gardens, trees, or emotional feed-back, dimension of the building, old, cold, dispersive, modern and so on.
- d) Spatial accessibility and public transport: elements referred to public transport, parking, distance, isolation.

Elements referred to daily life of students, inners space of the building, emotional reactions and mood presented in figure 3:

- e) university organization and daily students life: organization, classes, student services, friends and group relationships, free-time
- f) emotional response to the Milano-Bicocca environment and student life: both negative and positive feed-backs such as future, harmony, freedom, security but, in reverse, chaos, desperation, desolation.



Fig.3 Milano-Bicocca university campus life and emotional experience: e) university organization and daily students life; f) emotional response to the Milano-Bicocca environment.

Then, drawn maps have been analyzed, compared to the actual map of the district and recurrences in the subjects representations marked down according to the three groups.

In particular, although the completeness of the representation, and the numbers of details may be due to subjects personal variables, some elements are traversal and well-defined.

People who have a short experience of the place do not have a whole image of the place. Never-theless

they are able to identify the experienced buildings of the University campus. Further more it seems that with increase of time and space confidence, the overall mental model and the sketched map become more clear and connected with the physical space.

Figure 4 presents the maps of newbies subjects. In the first case the student is in the district since less than two months (a) but he/she is able to recognize some of the basic geometry of the architecture designed by Vittorio Gregotti and the functional destination of the buildings.

As times goes by, the place perception becomes more clear: the erasmus student (b) has already introjected the linear structure of the campus, at least of its core structure.

Although with some interpretation, there is an interesting displacement of two building re-pressed as a sequence (c) even if, in the real world, they are perpendicular to each other, all the newbies are able to identify at least U7 building, and 3 to 4 the U6, were the general students' services are located. Some other spatial and place identity values emerges the last two sketches (c, d): threes, verbally mentioned in many questionnaire answers, and the squared flooring of Piazza dell'Ateneo Nuovo, one of the most recognized and symbolic elements of the whole University campus.

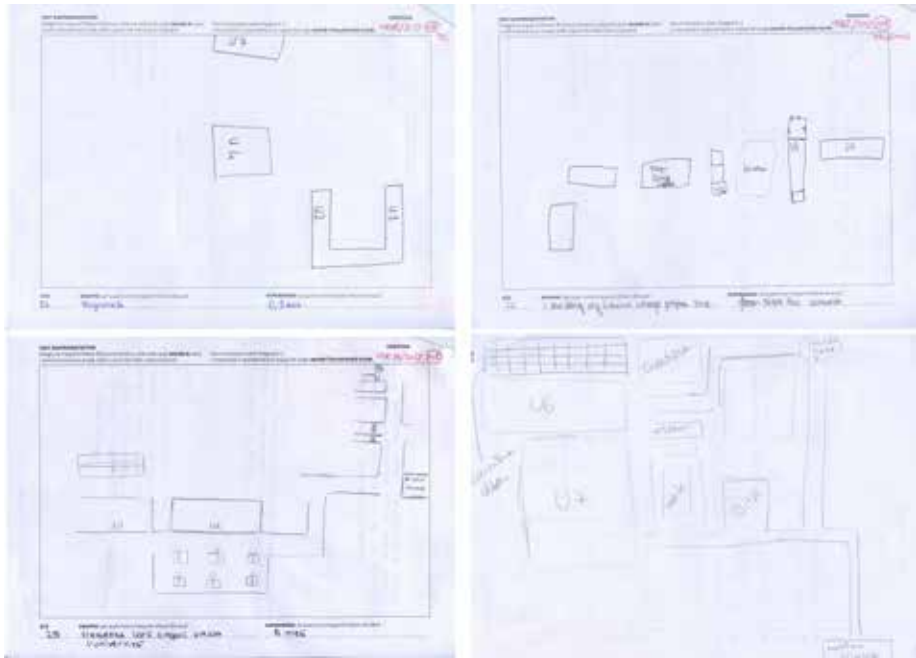


Fig.4 Milano-Bicocca according to Newbies drawings.

Intermediates have, at the same time, a very poor and a very detailed image of the place, not derived or related to time spent in it (fig. 5).

One of the subject (c) has a over-simplified visual representation of the campus, even if he/she declares two years experience in Milan-Bicocca. Comparing his/her drawing with the second one (d), same seniority, there is a dramatic difference. The issue should be deeply investigat-ed, in a future experiment, nevertheless it could be explained looking at the university experi-ence at the University of Milano-Bicocca. Is a common sentiment that campus is just the place where to attend classes and exams without experiencing or mixing this time with personal life. Many students spend their university life inside the building where lessons take place, using in-ternal commodities



such as cafeteria and canteen, vending machines, and studio areas without exploring unless they are forced the rest of the district.

Comparing the students questionnaires results and maps some clear differences emerge compared to other groups, especially residents and city users (see the already mentioned experiment in Bollini, 2011b on Milano-Bicocca district).

On the other hand, we can see a very detailed map (d) presenting a very complete representation, at list of the University campus, of a subject who has already explored also the surroundings and the detached department behind the Hangar Bicocca.

Students identify just the inner part of the whole district, which has the university vocation, even if someone mentioned Viale Sarca among the boundaries, their perception is limited to the rectangle circumscribed by Viale dell'Innovazione and Via Chiese.

Although many subjects rationally indicate the Arcimboldi theater as a spatial evidence, fews drawn it in the personal maps according to their cognitive model of the perceived space.

In this second group personal variables and the visual expression ability seems to be more influential, than in the other two groups.

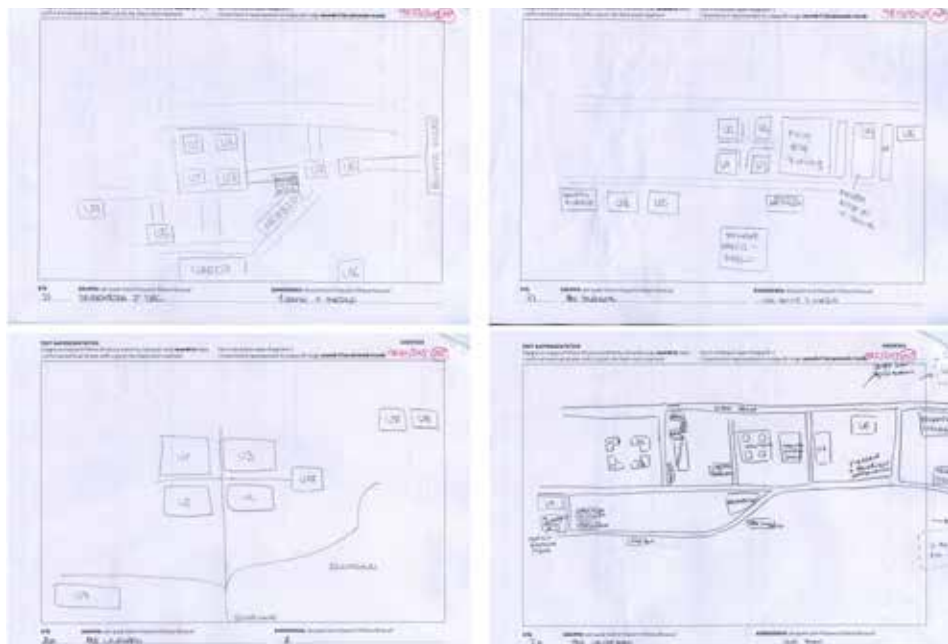


Fig.5 Milano-Bicocca according to Intermediates drawings.

Gurus, a fews in the considered experimental sample, have a wide and deep knowledge not only of the campus, but also of the neighborhood (see fig. 6).

Their mental model and visual map is clear, well organized, able to read and draw the space structure and connections. Sketches are detailed, well proportionated, able to describe both the single buildings, identified with names and functional labels, and the spatial connectivity according its relational meaning. The second subject also lives in the district, although he/she does't seem to indicate the typical residential services, such as post office, bank or supermarket.

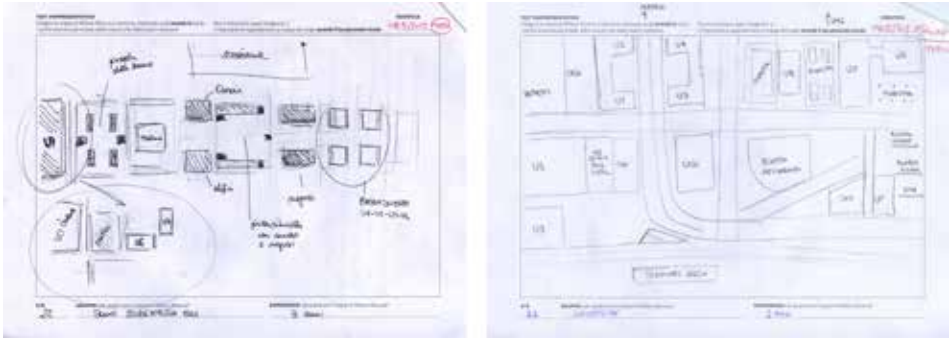


Fig.6 Milano-Bicocca according to Gurus drawings.

Going back to the theoretical issue of drawing as an expressive and knowledge tool, an interesting phenomenon has emerged. However subjects were just asked to sketch a map according to their mental model, some of them (4 of 39) also drew the facades of some totemic building as an answer to question 1 (see fig. 7). The most recognized and represented structured where U6 and its threes and the “faro” (lighthouse) a tower along Viale Sarca recently acquired by the University to become the home of the PAST-Polo di Archivio Storico, the historical archives collection of Milano-Bicocca.



Fig.7 Milano-Bicocca: some of the U6 facade representation.

## Conclusions

The proposed experiment need to be extended to the other social groups living in the considered district to identify and compare their social images: the overall common, bottom-up identity perceived and shard among people.

Nevertheless it shows already some methodological consideration and research approach in-sights. However subjects involved in the study do not have a specie visual culture or sketch competences, they not express particular difficulties or a lack of self-confidence in using drawing as an expressive language. The images produced along the experiment confirm the Lynch and stew & Wood hypothesis of drawing as a valid investigation tool.

Analyzing, comparing and grouping the drawn maps, visual symbolic elements, totemic urban presences, are well recognizable and present among people of the same group. The more people live, explore and experience a place, the better their inner cognitive image and the visual representation are rich, precise and articulate.

In people representation focal points not necessary coincide with the planned ones. Comparing the drawn maps and the correspondent questionnaire some architectural presences, depicted in plan and mentioned in answer n. 3, are not reported in n. 4, 5, and 7 focused on the personal experience.

The city drawn by people and its identity is not the one known and investigated by expert according to a top-down and a-priori vision, environmental psychology methodologies and user-centers approach can lead to a wider and deeper consciousness of social values and historical heritage where the genius loci build its identity.

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## Reflections on the site: Architects who draw landscapes

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### Abstract

Modern architecture has tried to give shelter to human life, being the pillar where customs and habits rest and get freed. This attempt proposes a flexible space which is open to its surroundings in order to regain contact with the landscape, and thus turn it into a site. A place that aspires to dissolve the geometry of architecture and relate it to the ground, despite its patent transparency or modernity. Therefore, architects, in their search for order in chaos, make of their drawings a threshold between architecture and nature, a method for succeeding in this creation of sites.

This essay will address the idea of the delimitation of the territory through the analysis of some drawings from architects and artists, where some reflections are made on the transformation of nature into landscape through construction. Thanks to these drawings, it will be possible to find a series of elements and relations that will determine the space in which the architecture is set, trying to conquer a poetic dimension that arises when the constructions unite the properties of the site and bring them closer to the man.

In addition, this text will try to state the capability of the drawing to recreate those components that define a specific place, and also its competence to synthesize an idea or a project, focusing on everything that modern architecture has been able to transmit about the concept of the site itself.

### The good life: inhabiting the landscape

The relationship between architecture and landscape has been addressed through several visions that allow us to understand the unstable balance between the traces of the existence of man and his surroundings. The vision of this symbiosis through the footprint of our lives, is realised in signs, traces and remains of what is living. Architecture in the landscape, as a reflection of our actions and habits, is the movement of our habits, it is through that that we can find the true essence of inhabiting<sup>1</sup>.

The designs that we will refer to here speak about these habits and of a relaxed way of life. They are poetic visions of architecture for a leisurely life and the characters that inhabit them also assume this new condition, making us participants in their space and protagonists of their experiences.

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<sup>1</sup> To understand this idea of architecture as a model of living, the 1951 text “Bauen Wohnen Denken” (building, living, thinking) written by the German philosopher Martin Heidegger is fundamental. Heidegger states that “living means taking care of *Quaternity*” and this is split into four elements: “land, sky, the divine and the mortal”. That said, to live, man must respect this *quaternity* which is represented by the surroundings they are in, it is within that that the essence of living is found (Heidegger, 1994).

This attempt to reclaim the house of man would start just after the fifties, when architectural culture at the time started to make realisations that housing was no longer a “machine to live in” but in fact “the shell, the casing, of man” as put forward by Eileen Grey. From then on, human living would be looked into, not just from an architectural standpoint, but from the standpoint of philosophy and art, initiatives all geared towards the need to take the act of living into consideration to construct the house and take man back to the origins of living.

We will address this vision from two geographically disparate points of view –Spain and the United States-, though they are in reality quite similar in terms of ideology. Houses on the Spanish coast from this time period show the introduction of a concept that is more ideological than physical, that of the *week-end* as the publication AC stated. Architects gave in to their dreams of creating holiday homes on the coast. And this archetype of whitewashed walls and stones, with terraced roofs and sea views, this was now the epicentre of people’s holidays. Or at least this is what the GATEPAC<sup>2</sup> architects were aiming for, and as we will see, in a certain way, forty years on, Alejandro de la Sota would share this vision with Spanish precursors of architectural modernity of the 1930’s.

American architects at the end of the forties who until that point had been focussed on state housing plans, adapted to a society that that was calling for the new idyllic life that was being advertised in magazines, and was mostly geared towards soldiers who were coming back from the war. A new style of suburban living linked to cars, the emergence of the first shopping centres and new consumer products, such as the television and microwave. All of this “created a powerful dream of domestic wealth which collided with the austere architectural vision of the Modern Movement” (Sudjic, 1999: 54) creating the model of American suburbia but, in the hands of Architects like Paul Rudolph it resulted in the development of living models in perfect balance with the beautiful surroundings of Florida. Design was a way of expressing these ideas in both cases, loose and expressive in the case of la Sota, measured and bucolic in the case of Rudolph, both were capable of making us experience this new approach to architecture.

Alejandro de la Sota was an expert in dreaming up architectural spaces, capable of creativity in his imaginary sheltered universe through his reflections, but was reluctant to design before these hazy dreams has become concrete. Abogo- stated- “by not drawing one single line whilst our work is not defined in our minds” (de la Sota en Navarro, 2006: 118).

The Alcudia<sup>3</sup> project however, to which we make reference here, possesses perhaps features some of la Sota’s most beautiful designs that were devised for their architectures. They are not scarce, like in some projects, but in the lines, we can see an architect who is delighted to present a project which would mark a key professional milestone in his career. The dream of the Alcudia houses implies a change in some way, not just in terms of architectural ideas but also in terms of what the design refers to.

A lot has been said about these prefabricated houses, and the aim here is not to reanalyse the project, but to look with fresh eyes at these designs that have been so painstakingly done by an architect who was meticulous with his designs. If that was the case and Alejandro de la Sota preferred to

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<sup>2</sup> Jose Luis Sert along with Torres Clavé, Sixto Illescas, Subirana and others would in 1930 found GATEPAC, (Grupo de Artistas y Técnicos Españoles para el Progreso de la Architecture Contemporánea). It was a Catalan association which through a collaborative movement tackled complex problems at different levels, from houses to cities, coming through varied institutional programmes, and proposing a reinterpretation of European modernity. The publication AC was fundamental for the development of GATEPAC and its associated architects.

<sup>3</sup> Alejandro de la Sota was in charge of a town planning project in Alcudia (Mallorca) between 1983 and 1984 in collaboration with Mauricio Sánchez-Bella. The project was organised by a big multinational that was interested in building touristic housing on the coast, some fifty houses. At that time Alejandro de la Sota was seventy years old and had gone into retirement following his dealings with the Escuela de Madrid. The client, the multinational in charge of the project, started to doubt the viability of prefabrication of houses, preferring the traditional construction method. To such an extent to which they would construct a house model with traditional materials which de la Sota would end up been dissociated from. Finally, the relationship between the client and architect would break down and the project was not completed.

think rather than design, the Alcudia designs must have some occult motive<sup>4</sup> which led us to now be delighted with their fabulous perspectives (Fig. 1) that the Galician architect drew for these tiny houses situated halfway between the sea and the mountains.



Fig. 1. Alejandro de la Sota. Casas en Alcudia, Mallorca, 1984. Fundación Alejandro de la Sota

The Alcudia house designs show us a different way of life, of summer, of holidays and sunglasses, as de la Sota drew in his landscapes. The architecture itself can almost not be seen, it is hidden amongst awnings and vines. Contemplative scenes in which people experience a space and transmit their feelings through objects –the swimming pool, a sports car or a sunbed (Fig. 2). By doing this, de la Sota transports us to these spaces, we feel like protagonists within the perspectives. They are not measured designs, quite the contrary, they are expressive and at times colourful, but their effectiveness is very much evident. We are attracted to because they tell stories of the Architect's imaginary world.



Fig. 2. Alejandro de la Sota. Casas en Alcudia, Mallorca, 1984. Fundación Alejandro de la Sota.

<sup>4</sup> It seems that the Project promotor must have seen something in the elaboration of these views, as just before the project was abandoned, it seems that de la Sota was urged to make them in an effort to give the idea of reluctant ownership of the architect's ideas (Gallego, 2004: 40)

The Alcudia notes are not designs for the project, but designs for life. Of a changing way of life which needed to be reflected by architecture, and of an inhabitant that soon took control of a space that was their own. It spoke of dissatisfaction that man has with the house he lived in, which in many cases was not the fault of the inhabitant, but also the architect (Campo Baeza, 2000: 55). Architects that had forgotten how to dream, and had stripped houses of their essential spaces that were in contact with nature.

If the roofs of the Alcudia houses protected modern man, the canopy that juts off it liberates man's customs and habits, making for a flexible space that is open to its surroundings where they can recover contact with the surrounding landscape. It was not by coincidence when de la Sota designed his houses (Fig. 3), they represented the basic elements of a roof, woodwork and walls, to which he added a fourth element, the landscape.

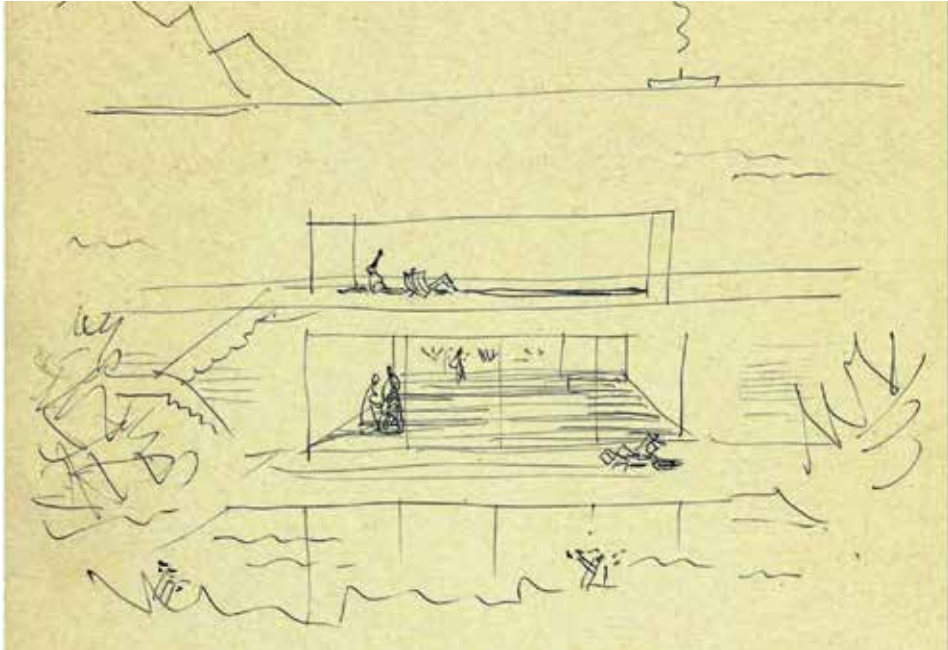


Fig. 3. Alejandro de la Sota. Casas en Alcudia, Mallorca, 1984. Fundación Alejandro de la Sota

De la Sota had it clear in his mind when, after visiting the site he stated that “the only way of making a group of people get along, side by side, is under a canopy on the beach”. And with this, as symbolised in his designs, the house sits on its landscape, and in doing so, becomes a place. A place which seeks to dissolve the geometry of a house and link it to the earth, as Wright stated, despite the lightness of the structure. Therefore, in his search for order, de la Sota converted part of the house into a threshold, making a clear separation between the public and the private, so that it would be a celebration of domestic life.

The Alcudia houses were located in almost chance way. De la Sota placed houses across the land as if he was merely creating a roof, a line between the sky and the land, that had sea views and sheltered man, a roof supported by just a few posts. Under this roof was the house, a constant reference to the horizontal nature of the sky and the horizon itself.



Much like Wright's Usonian houses, the Alcudia houses were directly on top of the land, on a "carpet" and with this, comes one of the most novel characteristics: its continuity.

The transition between the ground and the interior helps to characterise the flooring, and what happens in this transition shows the horizontal nature of the houses. The dissolution of the threshold happens thanks to a few elements; walls, the floor and the roof, but above all it happens in the spaces in between. De la Sota wanted from these spaces, typical of the traditional Mediterranean houses; covered spaces that are in between interior and exterior.

"From Pompeii, to Mies, in Spain these are not spoken of, the patio appears: an interior one if the house allows for it and next to it, made with walls, if not. It is a well-known fact that of having nature that is as closely linked to the landscape as that of a rural wall (...) within which the intimate life, covering the space with vines, wallflowers, awnings. We live within a small plot which we have converted into a big house" (De la Sota, 1984).

The Alcudia houses are not just spaces defined by their walls, but above all are the reasons that space exists beyond them. De la Sota shows us all of this in his perspectives, the spaces and the lives which the inhabitants live within them, as if it were a graphic depiction of the words uttered by the man who set a benchmark for Californian domesticity, Pierre Koenig:

"As living outside became more important, we feel that houses should reflect that. The exterior space became a continuation of the interior; buildings went down to floor level so that the exterior could continue on the interior. Glass was used to visually extend the interior space. The garage was moved to the edge of the building and exterior garages were introduced. The free floor allowed the family to better interact, especially during mealtimes. Eating, playing, and domestic chores were carried out in a shared space as opposed to different individual rooms. Architecture became a social study" (Steele on Koenig, 1998: 15).

If we have to profile an ideal in the link between architecture, the landscape and way of life, we have to mention American housing models of the fifties. In particular, we are going to refer to the houses Paul Rudolph developed in this period on the Florida coast, which was a product of the optimism that swept the United States after the war.

It is common, when looking at the topic of post war houses, to refer to specialised publications<sup>5</sup> that, along with different developers, held competitions and showed American society, that re-establishing the bases of houses by making them functional, technical and modern, was necessary. To do so, people often referred to *Case Study Houses* and California houses as a paradigm of this *American way of life*. We could say that Florida, and in particular the little island of Siesta Key, underwent similar development to California, but the overwhelming connection with nature and the territorial constraints made it a paradigmatic case.

Paul Rudolph started work on what would become one of the biggest domestic programmes of its time, soon after his career had started—at the end of the forties- and Florida was the chosen location for around fifty houses that were then developed over the following twenty years. In these Florida houses, Rudolph would begin to develop his graphic system in which, unlike Alejandro de la Sota's designs, his incredible precision and particular system of representation can be seen.

<sup>5</sup> Many of the big American architects of the 20th century dedicated part of the forties to the completions that were becoming popular and, faced with a lack of work, tried to respond to this formal and social search that the people found themselves in. Ralph Rapson won the *Blueprints for Tomorrow* competition with his *J. G. Lopez House* which the magazine *House and Garden's* organised in 1944. This completion also saw Marcel Breuer present his summer *cottage* model. In the same year, Rapson and his famous Rapson Rocker chair also won prizes in the *Equipment for Living* competition sponsored by the company *Hans G. Knoll Associates*, in which Louis Kahn and his colleague Oscar Stonorov their *Parasol* house model, along with projects from Serge Chermayeff, Charles Eames, Antonin Heythum, Joe Johansson and Eero Saarinen. Bioclimatic issues were even starting to be spoken about, like in the *Your Solar House* competition from *Libbery Owens Ford*, a glass company, which saw Alfred Kaster, John Lloyd Wright –son of Frank Lloyd Wright- Louis Kahn, Edward Durrell Stone and Pietro Belluschi participate, putting forward solar houses that responded to the individual climatology of each American state.

His designs show an intellectual attitude and his spatial capabilities conjure scenes that can transport us to invented times and places where architecture and nature show their symbiosis in perfect balance (Christopher, 2002: 54).

Lawrence Scarpa, one of Rudolph's collaborators, explained the process of his project through design as if architecture itself blossomed out from the lines that he drew. These designs were measured and precise because that is how his idea of design was. They did not wish to be shown as how they could be seen upon first viewing, rather that they were the fruit, in the words of Philip Johnson of the "speed of his mind".

"While working at his desk, he would move his hand over his drawing in such a way that he could better understand the actual scale and what it might be like to occupy the drawing, as if it were an actual building. He seemed as though he was actually inside the drawing. He would touch with his eyes and see with his hands. He always included human figures in his drawing, particularly in section and elevation drawings, to further understand how the scale of the space related to an actual person. For Rudolph the drawing was a building at full scale. This concept was the origin of his creative process." (Scarpa, 2009)

This was how the visions of an uninhabited paradise in Florida began, where matters such as location, relation to the landscape, the climate and the psychology of the interior and exterior spaces united by functionality, materials and the spirit of the time (Rudolph, 1956) were the determining factor of this domestic architecture. We started to see what we could understand as "abstract objects on the backdrop of idyllic landscapes" (Domingo, 209: 99), influenced on the one hand by the functional teachings of European maestros –Gropius, Breuer, Mies...- and on the other hand, by the focus of Japanese architecture.

If we look in close detail at his first designs, such as those that the architect drew for Alex Miller's house (Fig. 4) in 1947, we realise that Rudolph has manipulated our perspective, in this bird's eye view, to accentuate the dramatism and the poetics of the construction. This scene reminds us of Hiroshige's Japanese stamps<sup>6</sup> in which we can follow the design through the different levels of depth which overlap. Something similar happens in the design for the little guest house in Siesta Key, the *Cocoon House* (Fig. 5) designed for Ralph Twitchell<sup>7</sup>. The place jumps out at us like a glaze amongst which the architecture becomes intertwined: nature on the first level, the ground as a continuous, textured level, which takes us to the horizon where we see a parasol and the water, emphasised in black ink. The line on which the architecture sits is key in understanding the connection that Rudolph's architecture has with the landscape. We must also bear in mind the most representative of the architect's designs were his famous outward sections, which paved the way for skilful manipulation of the interior. Much like the constructive area of the *Finney guest house* (Fig. 6) in which technology mixes with the marvellous handling of interior textures and light and shade through lines and hatching in the elegant spaces.

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<sup>6</sup> We have to highlight the Japanese plum tree that Rudolph has designed opposite Miller's house in the style of the famous *sumi-e* designs that refer to the connection with the graphic system of Japanese prints. It is also possible that his admiration for Wright has led him to do this.

<sup>7</sup> Ralph Twitchell was one of the founders of the Sarasotta School which Paul Rudolph also belonged to.

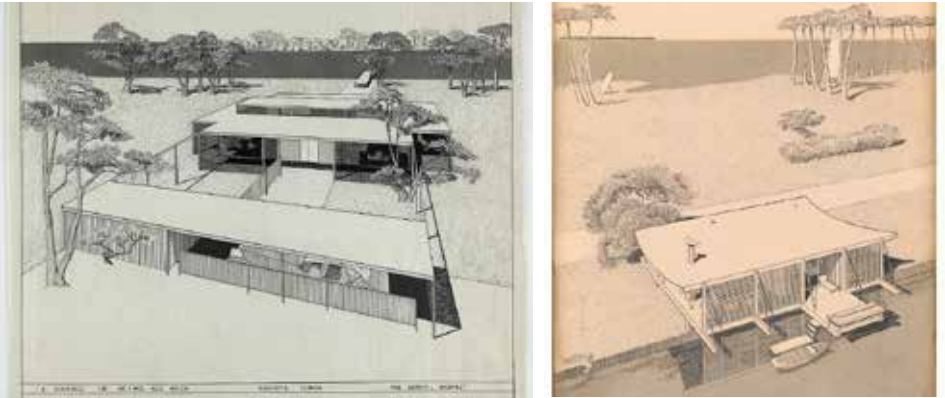


Fig. 4. Paul Rudolph, Alex Miller residence (project) bird's-eye view, rendering, 1947. Ink and adhesive shading film on paper (56 x 61 cm.). Library of Congress, LC-DIG-ppmsca-03525; Fig. 5. Cocoon house (Healy guest house), Siesta Key, Florida, Presentation drawing, 1950. Ink and tonal film overlay over graphite underdrawing (63 x 50.5 cm). Library of Congress, LC-DIG-ppmsca-39713

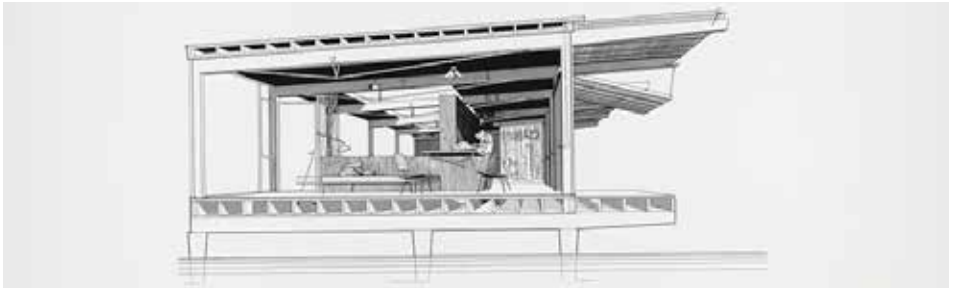


Fig. 6. Paul Rudolph, Finney guest house, Siesta Key, Florida (project), perspective section, rendering, 1947. Photographic print on resin coated paper: gelatin silver; (40.6 x 50.8 cm). Library of Congress, LC-USZ62-135200

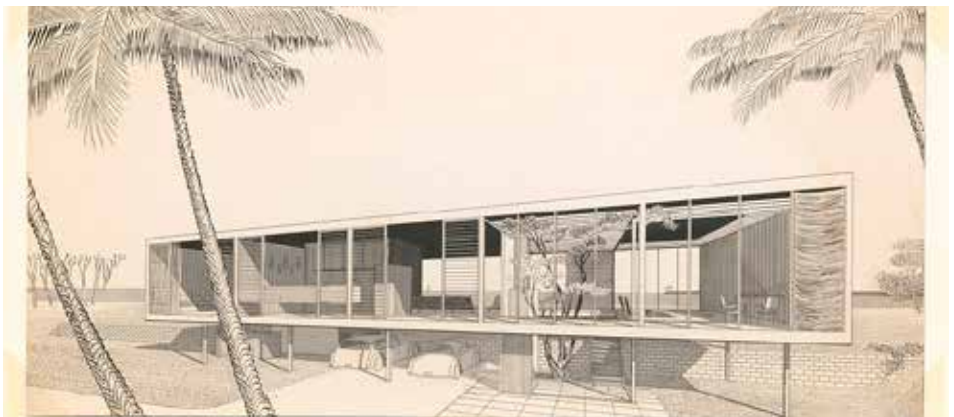


Fig. 7. Paul Rudolph, Walker guest house, Sanibel Island, Florida, front, perspective projection, rendering, 1952. Ink and adhesive shading film (35.5 x 73.3 cm). Library of Congress, LC-DIG-ppmsca-39712

We can see how the house takes off from the land, in the same way that the Cocoon guest house situated on the edge of the water did. This attitude from Rudolph towards the ground level suggests the evolution of a formal language (Domingo, 2009: 43) as a response to permanent peculiarities of the place within these Florida houses.

In Rudolph's first projects, such as the *Alex Miller residence*, the house anchors itself to the ground in search of horizontality and direct contact with the place it is situated. Little by little the Florida houses will start to move up from the ground level in search of views and better definition, we referred to this dream of an object on the landscape at the start.

This is the case for the *Walker guest house* (Fig. 7), suspended on pillars and geared toward a life that is completely linked with the outdoors. Here we can see the syncretism of Rudolph's work and how his design was capable of conforming to the atmosphere of the architecture that as was initially designed. In addition to what he learned from the maestros of Bauhaus and Wright he added in his personal vision in which local character had to be present. His designs show us sunny coastlines, powerful light, the warmth of the surroundings. These elements suggest perpetual summer happiness, where the modern house would be converted into a key player within architecture and would reflect an optimistic society, which would offer the house itself the possibility of a new way of life.

### **The site against the crisis of modernity**

The designs we present here belong to three architects who share a common bond in terms of their approach to the crisis of modernity; and specifically, how their stance on the graphic world is reflected. Hans Hollein from Austria, pioneer of radical architecture –a ground-breaking movement which brought about the premises of a postmodern spin which would come to the fore in the decade that followed-, and Cedric Price from England, whose focus was antimodernist –distancing itself from classic modernity-, in the world of megastructures, the imagery of *Pop Art*, short-lived technologies and the change of architectural scale, putting the very concept of Architecture and its relationship with man and its immediate surroundings in doubt. On the other hand, The luxembourger Léon Krier, from the postmodernist mind-set–with a regressive and nostalgic vision of classic and traditional models- defends more accessible, scaled forms of Architecture and town planning, which tie in with the history and culture.

Hollein (1934-2014) was one of the young architects who, in the sixties, during the full fragmentation of the modernist movement, positioned himself radically against it; and along with other names such as those from the Archigram and Coop Himmelblau groups, Cedric Price, Buckminster Fuller, Walter Pichler, Raimund Abraham, etc. created an architectural counterculture. In previous decades, no interest had been shown in architectural design providing for a visionary and futuristic world. Now it was done by way of the favoured and radical medium of photographic collage; applying colour using shapes cut out of adhesive materials such as *Letraset* and *Zip-A-Tone*, products that had only recently appeared on the market and were very popular.

Projects such as those carried out by Ron Herron, a member of Archigram, in his series *Walking Cities* were carried out using photos of his ink designs and were placed on photographic backgrounds. Hollein's works used photographic collages to juxtapose improbable objects amongst landscapes to make them look like inhabitable structures. The effect is striking as it gives a sense of reality.

In the image by Hollein (Fig. 8), we immediately interpret the plug as a building (due to its size and shape) juxtaposed in a rural setting. This photographic *collage* was part of a series of cognitive illusions that Hollein called 'Transformations', created between 1963 and 1968, many of which feature large objects located amongst landscapes: a theodolite on a hill, which looks like an observatory; an aircraft carrier amidst a rural landscape, which Hollein made look like a city (Fig. 9); or a large building

with the grille of a Rolls Royce radiator dominating the horizon of Manhattan. If we look at this as architecture, Hollein implies, it then becomes architecture (Bingham, 2013).



Fig. 8. Hans Hollein, *Highrise Building: Sparkplug Project*, 1964. Collage (12.1 x 18.4 cm). Collection of the Museum of Modern Art in New York, Philip Johnson Fund



Fig. 9. Hans Hollein, *Aircraft-Carrier-City in the Landscape*, 1964. Collage (21.6 x 1000 cm). Colección del Museo de Arte Moderno de Nueva York, Philip Johnson Fund. <http://www.hollein.com/eng/Kunst/Flugzeugtraeger-in-der-Landschaft>

An urban or rural landscape is often seemingly sterile, but here it becomes home to a monumental object. Hollein's designs are visual parodies of Le Corbusier's concept of architecture as an object on the landscape (*Vers une Architecture*, 1923), with its images of transatlantic liners, cars and planes (McQuaid, 2002). "On the drawing board, I have a snail shell that I got in Long Island, near New York. That will be the roof of a chapel", wrote Le Corbusier at the ends of the 40s, and this is an illustrative example of one of the most contemporary actions in architecture as an art form: changing scales. So, Hans Hollein proposes architecture in a *Ready-made* form, using a small and manageable object, whose shape he has embraced (like a model), and built in a life size scale. For Hollein, scale in the technical era does not have a "direct link with human beings", compared to Le Corbusier's system of proportions -Modulor (1943-1945)-, as he argued in his 1960 manifesto, *Plastic Space*.

Architecture is influenced by the conditions of our times. New spaces and contexts constantly broaden the architect's sphere of activity. Few assertions have shown such radical optimism in the capacity of the architect and their cultural consequences such as Hollein when he argued in 1968 that “everything is architecture” (Juárez, 2014).

Man creates artificial conditions. This is Architecture. Physically and psychically man repeats, transforms, expands his physical and psychical sphere. He determines “environment” in its widest sense. (...) There is a change as to the importance of “meaning” and “effect”. Architecture affects. The way I take possession of an object, how I use it, becomes important. A building can become entirely information—its message might be experienced through informational media (press, TV, etc). In fact, it is of almost no importance whether, for example, the Acropolis or the Pyramids exist in physical reality, as most people are aware of them through other media anyway and not through an experience of their own. Indeed, their importance—the role they play—is based on this effect of information. Thus, a building might be simulated only. (...) All are architects. Everything is architecture. (Hollein, 1968).

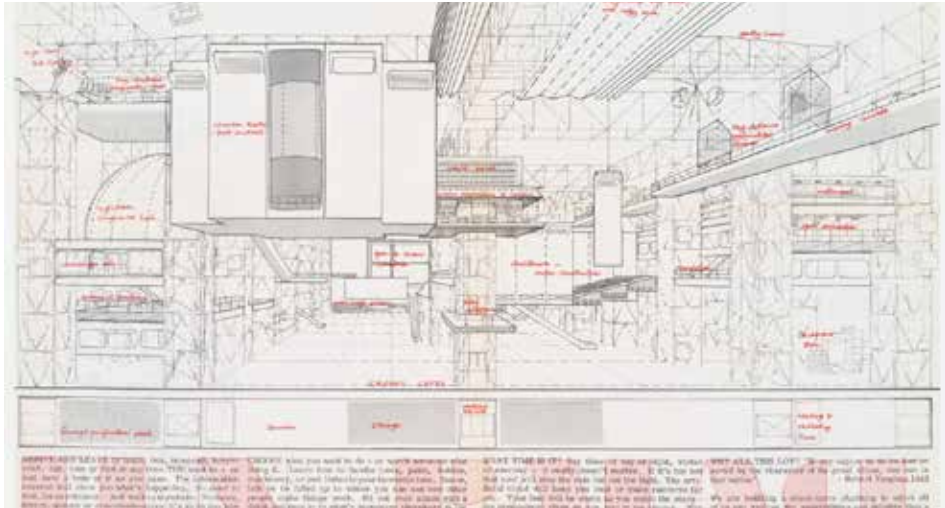


Fig. 10. Cedric Price, *Fun Palace for Joan Littlewood, Stratford East, London, 1959-61*. Gouache, pen and pencil on diazotype (44.5 x 83.8 cm). Jon Cross and Erica Staton, *Digital Design Collection Oproject, The Museum of Modern Art, New York*.

The Englishman Cedric Price (1934-2003) developed the consideration of time just as he had with space in his projects as an element of architectural composition. Between 1960 and 1965, Price developed the *Fun Palace* (Fig. 10), a project headed by Joan Littlewood, a renowned theatre director, who was looking for the development of something more than just a building, a “means, a service, a mobile space, a giant toy”. The idea of the *Fun Palace* was that it would host several events linked with cultural development for specific communities within a certain amount of time. In the words of Price: “this complex, which allows for auto-participative education and entertainment, can work alone—as a stand-alone centre for a finite time period—as well as being accessible to those who live and work nearby, it is accessible, thanks to its varied communication links, both regional and national” (Price, 1964).

The *Fun Palace* is similar to any of his other projects in terms of its role; a series of designs that are deeply architectural in nature that show nothing more than the project. Price’s designs are not

exactly eye-catching, they are grey and deeper than any others: disregarding the *collage* technique or any other techniques that are common to projects in the seventies, Price is able to focus all of his energy on architecture.

In this text, we have featured two designs of the *Fun Palace*, a central perspective and an aerial view for a helicopter (Fig. 11). In the first, Price gives us an exterior view, in the centre of the building, showing us a section of the underground, which shows us that it is not meant to give the perspective of a visitor. It was designed with black ink on a white page and also features Price's own handwritten comments in red ink and certain areas are darkened in grey.

The design shows the same idea which the project sparked:

The view is simultaneous and instantaneous, as is the *Fun Palace*. The idea of a centre where several things happen at the same time, wherever the space allows for it and there is a need for it, is signified by this perspective. Although the activities in the centre are not represented by humans drawn within the project, the specificity of the planned spaces and programmes signify its defined character, thanks to the handwritten comments. (...) Price, upon choosing anonymous and unspectacular architectural design, reinforces the idea of the insignificance of a shape in light of the supremacy of a programme (García de Cortázar, 2006).

The design is from the perspective of a helicopter (which, by the way, flies over the previous design) which is arriving at *Fun Palace*. It is able to transmit a complete idea of Price's complex design, through its technique, despite having only a partial view through the helicopter windows, and it was also taken 'whilst moving'. The movement is coherent with the idea of the project and how anyone may perceive it. The black card and white ink design also give the perception of a building, a space, architecture in use, fully functioning... at night.

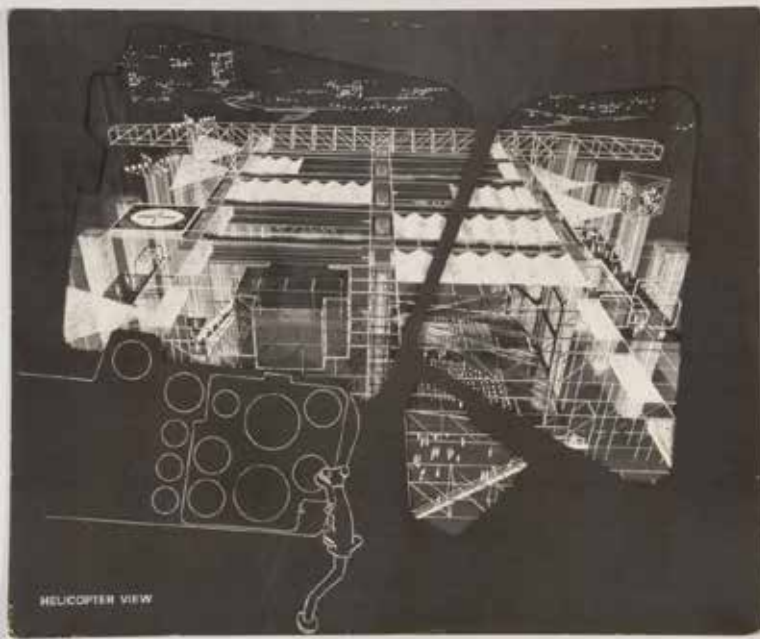


Fig. 11. Cedric Price, *Aerial view from a helicopter of the Fun Palace*, 1959-61. Card cut and struck onto photo paper painted with gouache paint (22.2 x 26.7 cm). Jon Cross and Erica Staton, *Digital Design Collection Oroject*, The Museum of Modern Art, New York.

One of the most influential ideologists and developers within the architecture world since the seventies arrived shortly after, with his unmistakable urban designs and his talents as a polemicist. Léon Krier (1946-) from an opposing ideology, proposed architecture and urban spaces defined by human scale, adapted to their location and natural and cultural conditions of their surroundings. Krier proposes the rationality and modernity of traditional urban development and architecture. His ideas are mostly showcased through eloquent and humorous ideograms, (Fig. 12 and 13) abundant designs and images in his projects. Krier argues his point using images without the circumlocution of prose. Designed through genius and grace, these works make a passionate argument against what Krier views as unquestionable teachings and unrecognised absurdities of contemporary architecture. In a time of energy crisis, he writes (and his designs show it), “build in the wrong places, in the wrong patterns, materials, densities, and heights, and for the wrong number of dwellers” (Krier, 2009). Each of these provocative and entertaining images by Krier are worth more than a thousand words on theoretical abstraction. Krier’s fundamentalism is evident in his drawings. The sketches are un-apologetic and uncompromising in their rhetorical force. He selects his targets with care and directs his graphic essays like an embedded sniper hidden deep in the enemy territory of modernist design discourse. There are no gray areas in Krier’s sketches, no shades of interrogation or fudges that may signal a white flag. One only finds the stark paleness of white voids interacting with the fierce direction of black lines pointing at the enemy: the modern city, its buildings and its architects (Burga, 2002).

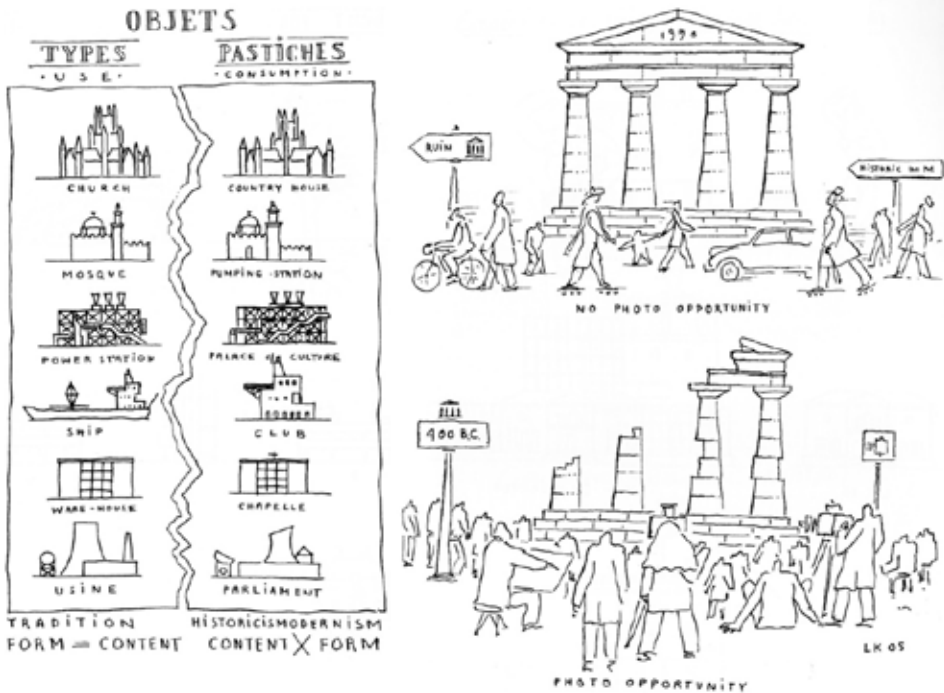


Fig. 12 and 13. Léon Krier. Drawings.



Krier himself confirms this in a 2015 interview, just as his designs show the self-evident; namely the categorical superiority of traditional architecture and urbanism. My caricatures reveal the scandalous contradictions and absurdities which we are daily obliged to swallow as normal, as unavoidable facts of life (Welton, 2015: 1).

### **Landscapers and “modern” designs: perspectives and manifestos**

We return to our introductory thread to justify the presence of various landscapers in this discussion –through dedication- of modernity: If other architects have tried to shelter the life of man by liberating customs and habits, dissolving the geometry of the constructed and linking it back to the earth, and their designs are a way of looking for this link, a threshold between artefacts and nature... perhaps there is no more clear cut bond to complete this search for dialogue between nature and landscape becoming a place, becoming a space, than in the designs of landscape architects; defining space in which nature, now seen as another architectural device, sits; communicating the aim of using the project to take hold of the poetic dimension... which occurs when properties of the place are combined and are approximated to man.

We believe that the three main designs that have been selected here are clear manifestos of this search. The three designs are monochrome and barely have any room to be underpinned by being filled in in black, with lines or dashes. And yet, in varying degrees of formalisation, they are quite precise in what they show us, from the most informal (Halprin) to the most crafted (Blom/Glemme) via the most detailed in what they look to recreate (Burler Marx in the expressiveness of the details of the exuberant Brazilian flora). The three designs allow us to glimpse the creator’s interest for other artistic fields and not just for example, the total artist, which we could label Burler Marx, the applied master that was Blom, the participation in the same design process in which Halprin involves collaborators and users (the first of whom was his wife, the choreographer Anna Halprin), on the west coast of America.

The three designs have all been created differently, maintaining direct contact since the beginning with the key architects of the Modern Movement (from Le Corbusier to Wright, Gropius to Niemeyer...) The three have all been fed by modernity as a main, direct source but refreshed their language once they found their own way. This would ultimately be different to the new collective. It is difficult to imagine Brazil’s landscape being created without Burler Marx, Stockholm’s 20th century parks without the head of department for parks and the humanised heart of Portland without the system of pocket-parks thought up by Halprin. This selection shows us these achievements.

The world renowned Brazilian landscaper Burler Marx (1909 Sao Paulo-1994 Rio de Janeiro) started his artistic career as a painter and never looked back, producing a huge quantity of designs and paintings. He felt the need to create and stated that although his varied fields of interest were all interconnected, he stated that they all had their own specifics ‘If I’m doing a painting, I’m doing a painting. If I’m doing a garden, I’m not doing a painting, I’m doing a garden’ (Nahson, 2016). We could find some contradiction amidst this and the extended vision of his conceptual work as an artist, his paintings, watercolours, plans, show that he saw the landscape like a painting. In his first painting phase (in the 1930s and 40s) he worked in a figurative way, strongly influenced by Cubism, Matisse and the Brazilian artist Cândido Portinari, and his repertoire included portraits, traditional scenes and exuberant still life paintings ((Hoffman & Nahson, 2016: 10).

The three selected designs could belong to this first period, exuberant traditional scenes?, although other similar designs refute that it was just a phase<sup>8</sup>. They represent “imaginative designs” of future projects and also refute the idea of looking at the landscape like a painting.

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<sup>8</sup>Here are similar designs for Brasilia (1961, Flora in the botanical gardens) showing the richness of a landscape ready to be inhabited. Also, the two that we have here in the same context seem to be from within the same decade, if not then there is an error on one of the dates.

Despite the simplicity that the lines show us, (they seem miles away from his other works that are bursting with colour) we can ask ourselves if here he is doing a painting or a garden. With regard to the title of one of them, “*Woman in the hammock*”, we are unsure if it is given by the author, it makes us think of the former. We also sense that the other is from the same series, with people bathing like in a work from Matisse. In the work for the Praça, the composition, discounting the tree canopy, looks exactly like a 1932 photo of the Schwartz house roof garden in Copacabana, Rio, a work by L. Costa and G. Warchavchik (see Cavalcanti, 2011: 45). Paintings or gardens are unbeatable examples of his attempts to bring nature and man together, the search for paradise in the metropolis, *A Permanência do instável*.<sup>9</sup>

In the first design (Fig. 14) for Teresópolis, Burle Marx ‘projected the frolicking nudes and Arcadian spirit of Matisse’s “Joy of Life” into the reality of a private garden’<sup>10</sup>. In the other work with the same atmosphere (Fig. 16, Rio de Janeiro) the figures are also relaxed, but they are dressed and socialising. In the picture of Recife (Fig. 15, Pernambuco) the pleasure that the natural surroundings give make it social and communal. The elements that make up this urban scene are the extensive covering of the tree, which people have gathered under<sup>11</sup>, and it blends with the shade of the neighbouring trees. The mass of vegetation in the foreground, along with the design of the courtyard floor is where he wanted to carefully illustrate that the grass is breaking through the gaps. It seems that both the baroque facades in the background and the animated people alike are guests in the festival of life. In the three cases, the landscape wraps itself around the people, in comparison with the landscape that divides people.

Burle Marx’s childhood visits to the Botanic gardens in Dalhem (Berlin) forever changed his understanding of the nature around him, that of his home country and that which he would focus on in his design. In the botanical gardens the landscape is interior, in general it is not divided, it wraps you up, you feel it, it is not intended for a wide-angle view but for detail over time which makes you see contrasts, rhythms, textures. He deservedly went on to develop successful structures for vertical gardens which in some way reproduce these curtains of exuberant vegetation.

The designs of one the apprentices who had learned from him clearly shows the teachings on the structure of systems thinking which Burle Marx learned from Olmsted and others, and which we look for condensed glimpses of in his work. Several notes intertwine in his plans: ‘the important thing is space, that volume is always interlinked with the existing space’, ‘continuity is very important...’ ‘a pedestrian footpath, like a meandering river and islands of plants’ ‘expanding and stretching along the way’ ‘groups of plants from here and there’<sup>12</sup>. We interpret that in Burle Marx’s designs, these ideas, whilst fully undertaken, do not have to be declared expressly, and the author recreates the “pleasure of life” in nature, whether it is a painting of a garden.

Nor does it encourage Burle Marx to compose these designs, as he did in a large number of his works, in clear pictorial references (Matisse, Van Gogh, Feiminger, Arp, Miró, Portinari...). Even if is to simply “liven them up”. Perhaps he did not approach them as if they were a painting or garden, he simply recreated in careful detail the pleasure of a relaxed, social life, wrapped up in the jungle.

<sup>9</sup> Subtitle of the retrospective on Burle Marx which was organised in Brazil/Berlin (2009) and later in Paris (2011).

<sup>10</sup> Mr. FitzGerald in the report on the “Roberto Burle Marx: Brazilian Modernist” exhibition, 2016 Jewish museum of New York, in the Washington Street Journal (<http://www.wsj.com/articles/roberto-burle-marx-brazilian-modernist-and-using-walls-floors-and-ceilings-beatriz-milhazes-review-1464126122>)

<sup>11</sup> Another small design that A.R. Oliveira selected for the first page of his book (2014 *Paisagens particulares. Jardins de Roberto Burle Marx (1940-1970)*) could also have belonged to the same series: People (two women there) together under the trunk of the big tree.

<sup>12</sup> Can be seen in Rizzo, G. 1992, *Roberto Burle Marx: Il Giardino del Novecento*. Firenze: Cantini.



Fig. 14. Roberto Burle Marx. Designed for the Wallerstein residence in Teresópolis 1938. Ink on paper (67.6x97.1cm). Burle Marx & Cia., Rio de Janeiro (Copied here from the catalogue/book Hoffmann & Nahson, p.19)

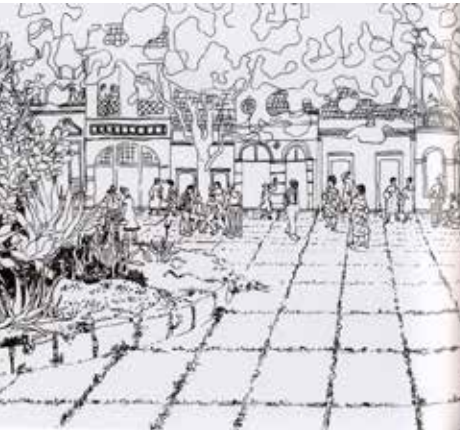


Fig. 15 and 16. Roberto Burle Marx. Detail of the perspective for the Praça Arthur Osies. Recife 1935. And Detail for the Louis Wallerstein garden in Teresópolis. "Mujer en la hamaca" 1948. Burle Marx & Cia. Here both images are copies from I. Montero 2001.

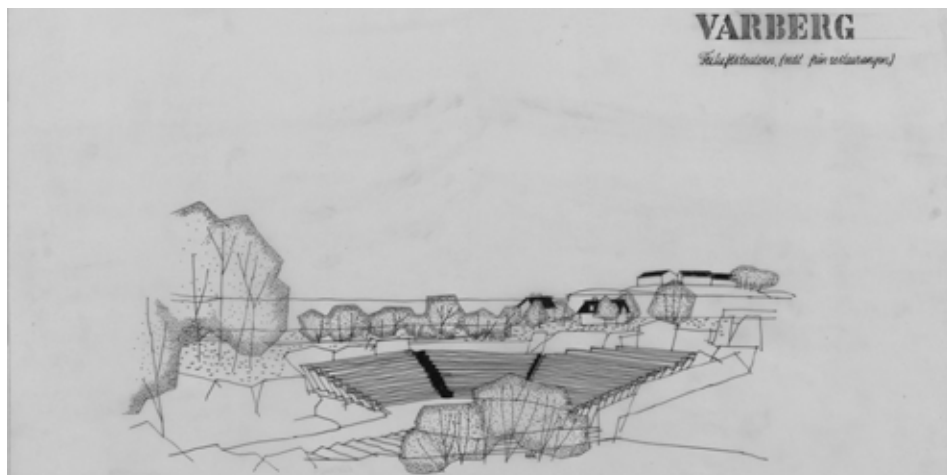


Fig. 17. Design signed by Holger Blom and Erik Glemme Architects S.A.R. 1952 (doubts with respect to the authorship). Varverg. Open air theatre, view from the restaurant. Stockholm, March. Ink. Original: Arkitektur- och designcentrum. Identificador: ARKM.1988-15-68. Source <http://www.play-scapes.com/wp-content/uploads/2009/01/holger-blom-stockholm-amphitheatre-plan-1024x716.jpg> (Last accessed, 10 abril 2017)

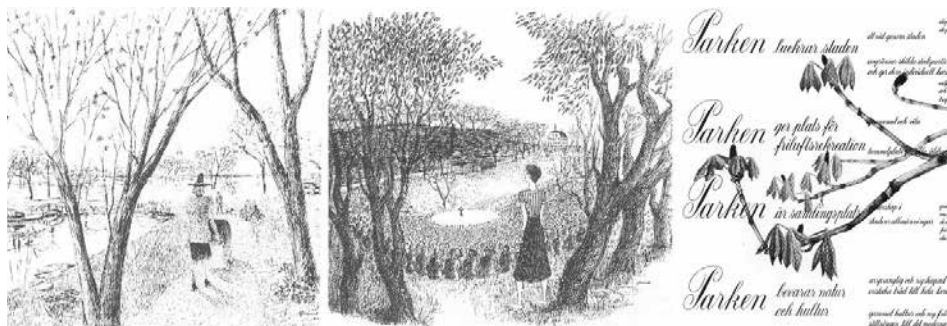


Fig. 18 and 19. Erik Glemme. Ink. 5. 1941. Part of the Norr Mälarstrand looking out towards the Rålambshovsparken; 6. No date(40-50s?) Plan for an open air theatre in Bellevue Park. Stockholm. 7. Holger Blome. 1946. Collage. Source for all three: Andersson, T. 1992

Holger Blom (1906–1996 in Stockholm), a formative architect, was head of Department for parks of Stockholm from 1938 until 1971. His mandate coincided with a glowing period for Swedish landscaping in general and that of the capital more specifically, helping to turn it into an international benchmark, later becoming known as the “School of Stockholm”. Andersson reflected (2008) on the limited use of representation that designers from the department used and of their lack of technical traits, paradoxically so in a period of such high quality, stating that there was no need to be exhaustive given the level of coordination between the different services, that the projects were done on site, and that both in the design and the construction, “adaptation” was the key word. This did not stop them from making plans in meticulous detail. An example of some of these plans is the work of the landscaper Erik Glemme (1905-1959), head of design until 1956<sup>13</sup>.

<sup>13</sup> For an example see Tegnerluden, 1942 (in Dpt. Public works, ref n°. of design 405.86. Available at <https://stockholmskallan.stockholm.se/post/9015> (accessed 10th April 2017); or that that represents the central piece of the three rock gardens of Vasaparken, ink (in Andersson, 2008:83, from Dpt. of parks).

In the design presented here (Fig.17) we see the names of Blom and Glemme. Blom was the manager and Glemme would design the piece represented here, which would then be developed a year later. It is difficult to attribute the authorship of this work to Glemme himself, given that the style of other works by him (figs. 18 and 19) are completely different. The geometrical approach helps us to see things from the architect's perspective. These other images could be additional entries in the same scene-sequence: from the Rålambshovsparken amphitheatre to the path along Norr Mälärstrand, to blurring the lines between park and city, between city and eco-region<sup>14</sup>.

The Maalaren lake also features in the main scene of the design, if we interpret it as the line on the horizon in the background. It is this geographic point of the amphitheatre where we can physically see the union, and metaphorically, the parks system concept as Blom understood it, essentially transmitting the philosophy outlined by Olmsted a century earlier with his *Emerald Necklace* for Boston.

That said, the amphitheatre clearly takes centre stage in the design, a clearing in the woods, which rolls out into the lake, a scene looking to welcome people to come and enjoy the union of land and water. It is an imagined space (the design dates back to 1952 and the amphitheatre represented was built in 1953, to commemorate the 700<sup>th</sup> anniversary of the city), the lines are sharp. This is the climax of a project in which vegetation and other landscape elements are pushed toward the perimeter of the space, creating an open centre that joins the vast sheet of water that is Lake Mälaren's surface. In materials and arrangement, the amphitheatre will reflect the elements of the archipelago landscape outside Stockholm (Wang 2016: 43). In a way, it literally presents the natural landscape in the heart of the metropolis, and in the centre, lies a space where people can congregate. The regional landscape, its nature, established the tone of things and recreated them, resulting in a more relaxed style of park design. If the design was used as a reference for the project itself, big details were not needed. All that was needed was evidence of the adequate site.

Fig. 6 is an advertising poster for the Parks Programme that Blom oversaw in 1946. It is a coherent layout, provocative and easy to understand, reflects four functions and benefits of the parks which will be used as a guide for the following plans and designs. The ideas are spread across a chestnut tree branch, and can be translated as:

1. The park "loosens" / depressurises (opens up) the city (and at the same time:)
2. The park offers space / gives plenty of space for recreation
3. The park is a place to meet, a meeting point.
4. The park preserves nature and culture... Another truly suggestive interpretation, and resonates in its English translation as 'The park preserves *nature and nurture*'<sup>15</sup>.

*The park must be a public space for festivals, concerts and religious and political manifestation. During this period, the City of Stockholm established "the Park Theatre", which still gives summertime performances in Stockholm parks*<sup>16</sup>. The clearing in the woods as seen on the design is open and lying in wait, for culture and children.

<sup>14</sup> The Bellevue park which represents Fig. 6 is much further North and on the outskirts of the city, close to Hagaparken, but in a similar position to this, facing a big sheet of water. With respect to Rålambshovsparken, it began to be organised in 1936, when construction started on the Västerbron bridge over the Mälälaren, and was gradually completed, to then be part of the final project organised by Blom/Glemme in relation to the lake (See Andersson 1993 and Sundström 2004).

<sup>15</sup> <http://www.play-scapes.com/play-history/mid-century-modern/advice-on-parks-from-holger-blom-stockholm/> (accessed 10<sup>th</sup> April 2017). Text and images taken from Arkitektur Museet, Sweden. Perhaps the change from Culture to Nurture is an error of the intended translation of the original poster, as it adds that Blom collaborated with many artists, with the result that sculpture became a recurrent feature of Stockholm parks, particularly play sculptures for children. Another explicit translation on Andersson 1993: 121 and Wang 2016: 11.

<sup>16</sup> *Ibid.* Blom the open-air theatre programme or park theatres with the actor and producer H. Hagerman in 1942, which still continues today.



In the plaza there should be events.... sculpture  
shows - concerts - dance events with dancers all  
over AND arriving to center space from above  
down stairs around fountain . . .

Fig. 20 L. Halprin 1965 Croquis de la Lovejoy Plaza, Portland. There is a version with spot colours

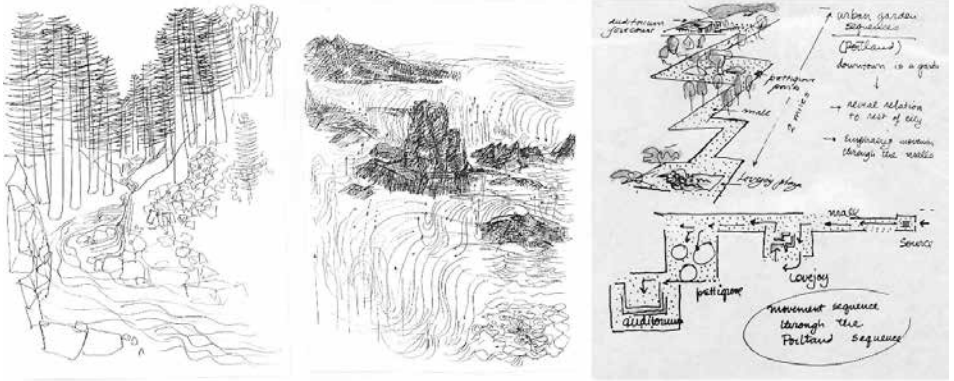


Fig. 21, 22 and 23. L. Halprin 1965

Lawrence Halprin (1916, New York- 2009, California) was a landscape architect, ranging from back yard designs to regional designs, who learned his trade amongst other modern architects from Wright to Gropius. The design we're looking at (Fig. 20) reproduces the fountain, a key component, which fills the first of three squares in the centre of Portland that were redesigned in the 60s, within a process of urban regeneration. Through this we can almost sense the sequence Halprin developed (Fig. 23, 1965-70), which extends to the woods that were used as references (also in Fig. 21), and that occupy (or deny again, as in the previous cases) the horizon of the design. The water that sloshes around and celebrates life is that of the interpreted nature, here amongst concrete slabs, and of the people who are waiting to complete the cycle, which is constantly renewed.

Speaking about the cycle, we refer to the design process known as RSVP Cycle (Resources, Scores, Values, Performances... o *Répondre Si l' Vous Plaît*) which Halprin introduces in his offerings with the desire to advertise open processes. The "scores and cartographic notes" (S) are as much tools for analysis, as collaborative intervention in ecosystems, both natural and social. Said method serves on a human scale, to the user experience and advocates the social impact of design. Halprin was always interested in exploring the inter relations between patterns in the different fields of art, dance also featured amongst these. 'Scores are *symbolizations of processes* which extend over the time' (Halprin, 1969: 1). He has other designs/diagrams that are expressly defined as cartographic notes, but following this philosophy almost any of his sketches could be understood in that way, in a process of continued learning.

'Water effects were carefully scored into the fountain by studies from nature. First I analysed the essential qualities of waterfalls in the High Sierra. I observed the effects of constriction on speed of flow; the effects of obstructions and how they break up sheetings of water... (Fig. 22)

With this scoring it's possible to coordinate a performance but it will only be partial, '(...) The open-ended element remains the people for whom the plaza fountain was designed. The fountain, once built, became, itself, a score for movement. The Performance (P) was not an end but a beginning in the cycle again. Though the environment itself is visually exciting it was conceived as a place for involvement; for physical interaction in which the constructed elements were there to encourage physical and emotional participation by the people of Portland (...) I hoped that we built would stimulate interactions between people and their environment (...) It happened' (Halprin, 1969:58). The architect Charles Moore confessed that when he went to work in Halprin's studio he was drawn towards working as a landscaper in general and more specifically this place for collective interaction, that so many exciting things happened all at once, amongst those were many

more *design drawings* compared to *technical ones*. Moore would become one of the designers that participated specifically in the design of the represented piece. And if for Halprin the real inspiration was his beloved High Sierra in Yosemite park, for Moore it was the image of a waterfall at the nearby Lake Tahoe –both in California-. It is a *challenging abstraction* of one or another natural place, it is an artificial space, without vegetation, and the design does not hide that<sup>17</sup>. In terms of the intermediate place (Pettigrove), *soft and green*, Larry has decided that it was *landscape and water* (San Francisco, 1986: 16-25).

For Halprin the work of an architect (landscape architect) was to show surroundings that would allow constant forms of pleasant movement so that they could offer us a constant sense of dance in our lives, create spatial ideas that provoke emotional responses. The main idea of a city in our times is to provide a creative atmosphere for the citizens, something that is only possible with a diverse city, that allows freedom of opportunities (Blancafort&Reus, 2015). The drawing invites us to *perform*. Let us try to exchange designs and creative contexts: The animated landscapes of Burle Marx could easily serve as an early entry *happening* of Halprin's... in the jungle, or the open-air amphitheatre of Blom/Glemme in the middle of a Nordic forest. Or the Stockholm influenced park theatres moving over to the aquatic scenery of concrete in Portland, imagining Viking lands in place of the Californian High Sierra. The spirit with which each design breathes is of the place it generates and there is no doubt that it approximates its characteristics to humans, above all as *homo ludens*. Because as Halprin would think, these areas as places are based on processes or open structures that will only be completed when they are interpreted (*Performance*). The tiny actors that Burle Marx continues to design that almost blend in with the forest are the indispensable components to help complete projects that Blom and Halprin's designs foresaw. In these designs the scale of the natural landscape overwhelms us, but we have total faith in it, the large and small gestures –the figures, the clearing in the woods, the water party- they humanise it, it invites us to join in.

## Conclusions

### The experience of the place

The three visions regarding the link between architecture and landscape that we have shown here are just a few strands of this unstable balance. Perhaps the best conclusion to this text would be that our understanding of a place cannot be universally defined. There are nuances and subtleties that make it hard to establish a real consensus.

What we have seen is that the different architects and landscapers we have referred to created their ideal places through their own experience. They all find themselves in an appropriate modernity, where modern architecture embraces a new vision marked by new times, by a way of understanding architecture and experiencing the landscape.

This means, just as we have seen here, creating a place through design, but above all through a personal response to a feeling that comes from understanding a place. A feeling such as transformation and integration, as a poetic dimension of nature.

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<sup>17</sup> Moore stated he still found it extraordinary the fact that *Larry* would persuade his Portland neighbours to accept things that they had never seen anything similar.



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## Drawing to design the Landscape

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### Abstract

The ability to foresee a transformation is necessary to elaborate a design. The drawing made by landscape architects to represent their idea, to illustrate the change imposed by their design, are very interesting in their way to fascinate the observer. The drawing is a tool to understand the existing condition and to express the key to the design. From Humphry Repton's "Red Books" to more recent examples, it is important to look at the drawings to understand the creative process, from the reading and the interpretation of the site (that is the main part -90%- of the design process), to the narration of the concept. Some authors developed a specific technique to represent the landscape, its elements and components, also by the building of a site-specific typological abacus, from which to enrich a new spatial articulation. The management of different dimensions is also evident in the representation of landscape designs, where the details and the general overlook mingle to propose a common theme or to evoke a particular sensation.



Fig. 1 Giampiero Cherubini, Overview of the design for the dismissed industrial area of Campi, Polcevera Valley, Genoa (from the Specialization thesis in Landscape Architecture, 1996, supervisors Proff. G. Ferrara, D. Meucci). In: G. Franchi, G. Lunardini (ed.), *Progetti di Paesaggio*, Genova, 1996, p. 64.

## Introduction

### Drawing as a method

Observing the drawings of some important landscape architects is an opportunity to understand the attitude of these authors towards the landscape design. The starting point is always the study of the site, the comprehension of the specific characters of each place or landscape, also in different dimensions. From the design of a garden to the plan at a large scale, a similar approach comes from the observation of the reality, where the practise of drawing help to focus on the most relevant elements. Macro and micro scales are both necessary to get different spatial visions of the place. This attention to landscape, by taking the time to draw it, let to achieve a sensibleness and awareness of amenable or susceptible focus points or potential areas. Drawing becomes a tool to make a quick synthesis of a place, to train and reinforce the capacity for a fitting-to-landscape design.

### Repton's Red Books

Drawing is a fundamental tool to read, understand and interpret the landscape. Through the representation of landscape the designer is able to get its peculiar characters, to reach an harmonious insertion of his intervention.

The most famous example of illustrations of landscape designs are the Repton's "Red Books" (so called for their binding), with watercolour drawings showing "before" and "after" views of the site, by a system of overlaying flaps, to reveal the effect of the intended design. It was a smart marketing mean to let the client understand, visualize and appreciate the proposed changes.

Humphry Repton<sup>1</sup> was the last great English landscape designer of the eighteenth century; following the teaching of "Capability" Brown, he gave a relevant impulse to Landscape Design by the promotion of his ideas about the latent potential of the natural characters of a site. The reading of the existing conditions was the beginning and the feeding of his designs. The work he described in the Red Books clearly tells about the principal styles and contemporary debates (between geometric and natural) of Landscape Design. The books also portray the author's techniques to disguise differing water levels, including perspective tricks, and to re-shape hills by planting. We can remark his attention to the use of cattle as a natural element to measure the spatial scale. His books became a success because of the simplicity to communicate how the design can transform the site, and were soon imitated in America<sup>2</sup>.

### Landscape Architects and Art

There is a strong link from Landscape Architecture and Art. In the passing from the end of the nineteenth century and the beginning of the twentieth century, in the drawings of some authors we can read the rupture from the classical tradition towards a new expression, following the new contemporary artistic movements.

Gertrude Jeckyll<sup>3</sup>, for example, was deeply influenced by Arts and Crafts principles, that she absorbed from John Ruskin and William Morris. Her famous "hardy flower border" creates a sympathetic relationship between house and surroundings, where each individual plant should be studied for culture, habit and foliage texture to give an appropriate effect to the garden.

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<sup>1</sup>Humphry Repton (1752-1818) published three main books, *Sketches and Hints on Landscape Gardening* (1795), *Observations on the Theory and Practice of Landscape Gardening* (1803), and *Fragments on the Theory and Practice of Landscape Gardening* (1816), containing drawings and material from his "Red Books", in which he drew more than 400 different designs.

<sup>2</sup>Bernard M'Mahon, irish-American horticulturist and landscape gardener (he worked for Jefferson's "Monticello" estate, in Virginia), copied Repton's ideas in his 1806 *American Gardener's Calendar*.

<sup>3</sup>Gertrude Jeckyll (1843-1932) created about 400 gardens in the United Kingdom, Europe and America. In her *Colour Schemes for the Flower Garden* (reprinted 1988), she describes her works on the modern use of the theoretical colour wheel and of "warm" and "cool" flower colours in gardens.

Her drawings, showing the plantation scheme, reveal an attentive study of colours, that remind us of the impressionist inclination. Jekyll's influence on garden design is still present today. She was a painter and a planting artist, with a special interest on science and botany. Her work is known for its bright colours and the brush-like strokes of her plantings. Looking at the images of her gardens we cannot avoid the comparison with the colours of Monet's pictures of his garden in Giverny, where light fragmentation is strictly interrelated to the different plants, with a very similar atmosphere. Another worldfamous landscape architect that was also an artist (ecologist, sculptor and naturalist) is the Brazilian Roberto Burle Marx<sup>4</sup>. His designs of parks, public urban spaces and gardens are works of modern art, and his drawings are at the same time an artistic opera and the representation of a landscape design. He influenced the garden design of the last century, bringing into light the lushing flora of his country, transferring traditional artistic expressions, folk art and graphic design to Landscape Architecture. The deep knowledge of the local flora let him design with a special three-dimensional attitude to the project, that the planimetries cannot translate. Some of his lines are still emblem of dynamic modern design (like the wave-shaped waterfront in Rio de Janeiro or the colourful sinuous vegetation masses used in many different gardens and parks), cultural reference and model to many contemporary authors.

### **Drawing to design**

Many important protagonists of Landscape Architecture have a special feeling with drawing. The first approach to a landscape is a drawing, as a matter of understanding, as a tool to individuate the palette of the different peculiar micro-landscapes that characterize it, to point out an abacus of different elements that constitute the landscape mosaic.

The ability to sketch a landscape is a key to the design process: primary tool to understand and to evaluate a site, it is fundamental to arrange the design, simulating a new transformation.

Pietro Porcinai<sup>5</sup> used to observe and study the site to find out the character of a place, from which he stated to design. His "before" and "after" drawings reveal his attitude and ability to interpret the existing landscape, respecting the environment. His proposal for the mitigation of military structures (Matteini, 1991, p. 43) superimposes a new design, taken from the rural landscape, disguising the ammunition depots by rows of trees that determine an agrarian scansion arrangement.

In the sketches (Matteini, 1991, p. 100) about the cliff at the foot of the Castle on the Bay of Paraggi (between S. Margherita L. and Portofino), in the Eastern Genoese Riviera, he shows how some intervention could not have a great visual impact, despite the needed changes to get a flat surface for a lawn, at the level of the balcony. His design of the ascending ramp to the castle is a masterpiece: the existing vegetation, enriched by new coherent planting, embrace and wraps the iron pillars that he built to raise its final part, to reach the main entrance.

Some of the most beautiful watercolours drawings of Italian renaissance gardens are the result of Geoffrey Jellicoe's<sup>6</sup> winning of the British "Prix de Rome for Architecture", in 1923. With John C. Shepherd, he travelled through Italy and decided to survey the Italian most important historical gardens as an attempt to diffuse their knowledge, preventing or stopping their decay. These studies brought him to Landscape Architecture; in the roots of his designs we can find many references to classical gardens. In the Moody Historical Gardens, in Texas, from 1985, he designs a sequence of little "green rooms", representing the history of gardens, that were conceived as a three-dimensional

<sup>4</sup> Roberto Burle Marx (1909-1994) was engaged for the conservation of Brazil's rainforests. More than 50 plants bear his name. He worked with Oscar Niemeyer, to create some of his most memorable works in Brasilia.

<sup>5</sup> Pietro Porcinai (1910-1986) is one of the most outstanding Italian landscape architects of the last century. He made designs in Italy and abroad at different scales, from gardens to public parks, industrial districts, motorways, applying the lesson of ecology to the urban contest. He worked hard for the development of landscape design as a modern profession in Italy.

<sup>6</sup> Geoffrey Jellicoe (1900-1996) was an important English Landscape Architect: his contribution to landscape design has been compared to that of 18th century landscape gardener "Capability" Brown.

history of Man, starting from the Garden of Eden. Jellicoe produced his original sketch after his first site-visit, and later he developed it in a series of drawings, in his illustrative and colourful distinctive style, on enormous sheets of paper. There is a relevant similarity in the series of square elements, to define a border in many of his designs. In 1980, Leonardo Benevolo called Sir Jellicoe to design the Ferrari Park in Modena<sup>7</sup>. In his proposal he draws a system of spaces for different activities, along a water channel (not realized). The Park is the transformation of a dismissed little airport, that was also an autodrome from 1950 to 1976: the actual configuration of the park presents many elements of Jellicoe's design, particularly the ground modeling, with the creation of a wooden hill, with more than 3.500 new plants, in the south-western border of the area, with pedestrian ways, allowing footing and running.

Carl Steinitz<sup>8</sup> is a pioneer in the exploration of the use of computer and technology for advanced spatial analysis for landscape planning. His works on large land areas focused on highly valued landscapes with specific pressure for change. He is a reference in the study of alternative sceneries and visual impact assessment; he was one of the first to apply perceptive analysis to natural parks planning and resources management. His most recent work (*A Framework for Geodesign*, 2012) proposes a methodological structure for collaborative design for the transformation of wide areas. He shows the importance of linking the information knowledge and the design process: his method is a systematic process of measuring, reading, surveying, modeling, interpreting, to design, evaluate and make decisions. It is a tool to create a design for sustainable future environments. To him, drawing is a natural way to observe: when I took him to the Cinqueterre, together with some other landscape architects, coming from different countries, I was amazed by his ability to quickly sketch many pencil drawings as we walked on the trails among the terraced strips, overlooking the sea. Learning from Ian Mc Harg's lesson to "design with nature"<sup>9</sup>, he takes from the comprehension of the landscape the inspiration to design and to plan strategies for its conservation and development. An interesting design by Andreas Kipar for the Krefen-Fischeln urban park<sup>10</sup> in Germany, the drawings of different types of landscapes that articulate the rural interclused area among urban areas and suburbs individuate a sort of grammar from which the design is built, repositing usual typologies added with new functions, at the borders of the central still rural area with the fields (a free horizon to look out). Starting from the initial studies of the types of landscape, towards a design proposal, the drawings tell the design process that constitute a new relationship between town and cultivated lands, that can be crossed and enjoyed by the citizens as a park.

<sup>7</sup> G. Jellicoe, *The studies of a Landscape Designer over 80 Years*, Aberdeen, 1996, p. 211; V. Bulgarelli, C. Mazzeri, *La città e l'ambiente. Le trasformazioni ambientali e urbane a Modena nel Novecento*, Carpi 2009, pp. 59-66; R. D'Agostino, *Il verde pubblico a Modena dal dopoguerra ad oggi*, in G. Botti, *Natura e cultura urbana a Modena*, Modena, 1982, p. 373.

<sup>8</sup> Carl Steinitz is Emeritus Professor of Landscape Architecture and Planning at the Graduate School of Design, Harvard University. He dedicated large part of his academic and professional career to improve methods for landscape designs, giving a relevant contribution to environmental and landscape design education. He is the main author of the book *Alternative Futures for Changing Landscapes* (Island Press 2003).

<sup>9</sup> Ian Mc Harg (1920-2001) in his famous book *Design with nature* (1969) illustrates the concept of ecological planning, setting the basic concepts for land-use analysis, that were later explored by geographic information systems, and defines the problem of development, presenting a methodology to select compatible solution. He set the founding of sustainable and regenerative design, in different operative fields, such as environmental impact assessment, new community development, coastal zone management, brownfields restoration, river corridor planning.

<sup>10</sup> The landscape architect Andreas Kipar (teacher of Landscape Design in the Landscape Architecture School of Genoa for several years) founded KLA in Germany and LAND (*Landscape Architecture Nature Development*, with Giovanni Sala) in Milan. The Fischeln-Krefeld urban park in Germany 2000-2003 (german landscape Award 2006) is conceived as a "park in progress", proposing an exemplary solution for low municipal budgets. The intensification of the edges introduce the perception of the rural remnant fields as an urban park of a different nature. [www.kiparland.com](http://www.kiparland.com)

## Drawing to tell

Many efforts must be devoted to the presentation of the design. In some cases the way to illustrate the significance of some actions, to point out the value of a place, is a design in itself. There are some examples where the existing conditions only need to be put in evidence or evaluated by a community's strategy. The landscape design becomes the ability to show those potential interesting resources, to let people see, understand and appreciate them. A story-telling design can be realized with very simple elements, that can give a high added-value to the area.

In the Metropolitan area of Milan, the Rice Park<sup>11</sup> is one of the most relevant example of urban agriculture, in Italy, where an integration between rural world and urban reality is realized by a participative design process, to preserve the identity of a unique landscape. Urban agriculture can strengthen the resilience of urban system and the capability to face access to food, employment, climate change, urban density, need of socio-cultural functions and eco-system services. The valorisation of an area of 600 cultivated hectares is a participative process to preserve a watered landscape by the constitution of an urban-rural park to point out the traditional vocation of the site, granting a biological alive maintenance and a competitive productive agriculture inside the town. The qualification of the landscape mosaic is produced by some intervention such as the planting of bands of shrubs and trees, the restoration of irrigation ditches and fountains (*fontanili*) and by a significant promotion of the site-specific quality and of its eco-systemic, economic and social role. The structural element is the Rice Road, a historic itinerary for a cycle-pedestrian way among nature, rural tradition and gastronomy, where, with the help of panels, urban signals, guides and maps, it is possible to learn from the landscape. The communication design is relevant: the panels contains many different information, fitting diverse readers, the long term scenery, by the sharing of farmers, residents and land-owners, is able to impulse fund raising for different actions.

## Conclusions

### Drawing to learn

The landscape architect's education is strongly influenced by the capability to draw. It is a skill to reach for all Landscape Architecture students: an ability to look, to understand.

Many of my friends and colleagues landscape architects, coming from South American Schools, have a strong education in landscape representation and relief. They frequently say that a drawing is better than a photo because it is able to represent the most relevant elements, making a selective evaluation and introducing a syththetic interpretation, while a photo is only a flat portrait without a personal interpretation.

Valerio Romani<sup>12</sup> teaches some techniques to realize some maps that enable the drawer to understand the morphology, the processes at the origin of some forms, and many other landscaping characters. The first one is called the "base morphology map": neglecting vegetal cover and human main buildings, it deals with the forms, giving an analytical approximation of landscape. It is drawn starting from classic topography, to study and apprehend, by the use of "*maxiclive*" (clivometric lines that are orthogonally traced from one principal level curve to the following one, crossing the secondary level curves, with an inter-distance representing the slope gradient –closer lines for more

<sup>11</sup> Gioia Gibelli (teacher of Landscape Ecology in the Landscape Architecture School of Genoa) designed the Rice Park strategy from 2008 (with the collaboration of S. Beretta, E. Pagnoni, S. Cimolino, S. Salteri), realizing some actions, step by step, for the non-profit Association of the Rice Park. In the park (pilot-project of the Agricultural District of Milan - DAM, instituted in 2011), the farmers are protagonists: preserving this rural landscape from the XV Century, they host today also innovative functions and activities (environmental, cultural, social and ricreative services, together with a consistent agricultural production), see A. Ghersi, *Sky mirror*, in *Architettura del paesaggio*, n. 32, 2016, pp. 38-41.

<sup>12</sup> Valerio Romani shows and explains different analysing and interpreting maps in his book, *Il paesaggio dell'Alto Garda bresciano* (from the morphology maps, to the reading of natural and human semiology). He taught Landscape Analysis in the Landscape Architecture School of Genoa.

slope- preferably in a scale 1:10,000). The result is an hand-made map that reports hydrography (with impluvium and concavities), morphology (tops, bumps, crests and folds, saddle stiches, spikes and backbones, conoids and molded shapes, ..), slope, altimetry, exposition of versants, but that, first of all, is an useful didactic exercise: the time spent in the drafting of this map let the student understand and acquire awareness of the morphology in a very deep detail and orient an accurate site visit. The aim of this work is also to guide the students to individuate the basic components of landscape, as they initially need to split landscape complexity in its different elements, foreseeing a successive recomposition and final evaluation to orientate and derive the design.

The Landscape Architecture degrees in Europe are actually in a phase of transformation: the teaching of drawing and surveying must remain as a basic fundamental element of the students' education, representing a real access-key to the landscape design.

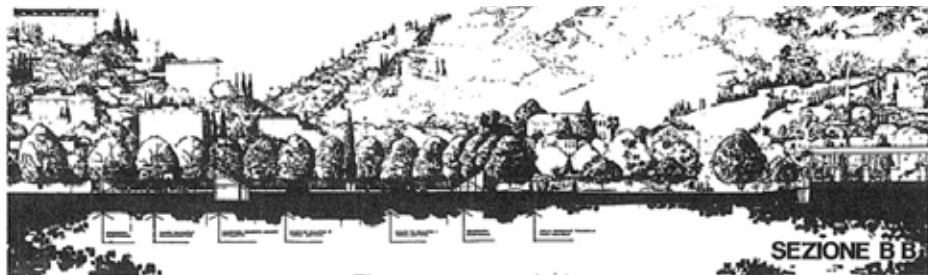


Fig. 2 Gino Soracco, Drawings for the redevelopment of the area near the entrance of the motorway in Rapallo (GE), from the Landscape Architecture Design Studio (Prof. C. Buffa), Specialization School in Landscape Architecture (Genoa). In: C. Buffa, F. Giannini (ed.), *Architettura del Paesaggio per Rapallo*, Genova 1994, p. 36.



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# Travel sketches as a means of knowledge: imaginary interview with Gaspare de Fiore

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## Abstract

Dal punto di vista tecnico gli appunti di viaggio sono una delle manifestazioni più immediate, del disegno, sono rapidi schizzi che chiunque, anche non particolarmente portato per il disegno, dedica ai ricordi di viaggio, fissando sulla carta con concisi segni di matita o penna, luoghi, momenti ed emozioni.

Artisti e pittori e architetti di tutti i tempi hanno schizzato appunti di viaggio e lo fanno ancora ai nostri giorni, anche dopo l'affermarsi della fotografia, riempiendo le pagine dei loro taccuini, oggi chiamati *sketchbook*, per le straordinarie capacità di rievocazione, di ricordo, di suggestione di tale tipo di disegno. In un lavoro del genere, pur così piccolo e rapido entra in gioco, la sensibilità del disegnatore, dalla scelta della giusta inquadratura alle precise proporzioni, dal segno sensibile al chiaroscuro messo nel suo esatto valore, il tutto nobilitato ed impreziosito dalla velocità di esecuzione che gli conferisce freschezza e suggestività.

Tra i vari viaggiatori-disegnatori non posso dimenticare Gaspare de Fiore, che ho visto all'opera ad Atene, a Istanbul, in Egitto, a Bali, a Praga, in navigazione lungo il Reno ma anche località italiane come Matera. Ed allora che cosa c'è di meglio di una immaginaria intervista al maestro?

## Introduction

From a technical point view, travel sketchbooks are one of the most immediate expressions of drawing. Anyone – even if not a natural – can use these quick sketches to capture on paper, with precise strokes of pen and pencil, every emotion triggered by the sight of landscapes, architectures and the experience of places and situations.

In the history of drawing, the notebooks and albums kept by nearly all artists undertaking the *grand tour*<sup>1</sup> around Italy are particularly interesting, as these artists noted down everything they saw or that stimulated their imagination while travelling.

Artists, painters and architects have always filled their *sketchbooks*<sup>2</sup> with drawings, and they still do today - even after photography<sup>3</sup> became popular -, because of its extraordinary evocative power.

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<sup>1</sup>“The period of the Grand Tour, which start in the seventeenth century and lasts for the entire eighteenth century, is extremely relevant for real-life drawing of old monuments and landscape as a necessary study for architects and artists”. I. Vinciguerra, 2010.”

<sup>2</sup>“Many of us prefer noting down our ideas on a sketchbook. I always have one with me, because a journey on a train or a moment of peace, always offer the chance to draw without being distracted. This is way we encourage our partners to always use sketchbooks and develop their drawing skills in parallel to other expressive methods (i.e. with computers). (Seth Rutt dello studio Hawkins\Brown)

<sup>3</sup>“With the camera I can reasearch, with my sketchbook I find time to draw an object to actually understand it” (Michael Patrick Cronan)



Fig. 1 Friedrich Bury, *Goethe and other artists in Rome*

The sensitivity of the person sketching plays an important role even in simple and quick sketches: suitable angulation, precise proportions, definite lines, and light and shade placed in its right value. All these elements are enhanced by quick execution, which gives freshness and suggestion to the drawing. Travelling (in Italy and abroad) completed the cultural, artistic, intellectual and scientific education of a great number of travellers, many of which left us their journals and sketches to describe the feelings inspired by the sight of ancient monuments and landscapes.

Johann Wolfgang Goethe described wonderfully in his famous sketchbooks the places, people and events he saw during his trip to Italy. Before leaving for this trip to Italy, Goethe wanted to improve his drawing skills so he could learn to sketch with ease. In his *Italian Journey*, published in 1816-17, Goethe wrote that the most important thing was learning to draw. He claimed that one must find an excuse to do it as drawing for the sake of drawing is like talking for the sake of talking: if you do not have something to express, if nothing excites you and you do not find a worthy subject, what use does your drawing have?

Among famous sketchbooks, one should not forget Delacroix's journals. He filled pages and pages during his trip to Morocco, in which he combined notes and sketches in a refined compositional synthesis. In his writings, Delacroix specified that the most important thing for him was learning to draw. He claimed that one must find an excuse for it as drawing for drawing is like talking for the sake of talking: if you did not have something to express, if nothing excited you and you did not find any worthy subject, what use would your drawing have. Lastly, Le Corbusier wrote -in a very concise order-, "the key is to look, observe, see, imagine, invent, and create". However, the most important thing is what. In fact, his sketchbooks, with quick, essential drawings, are not just notes. He needs them to understand the *aim of the project*: they are the basis of his projects.

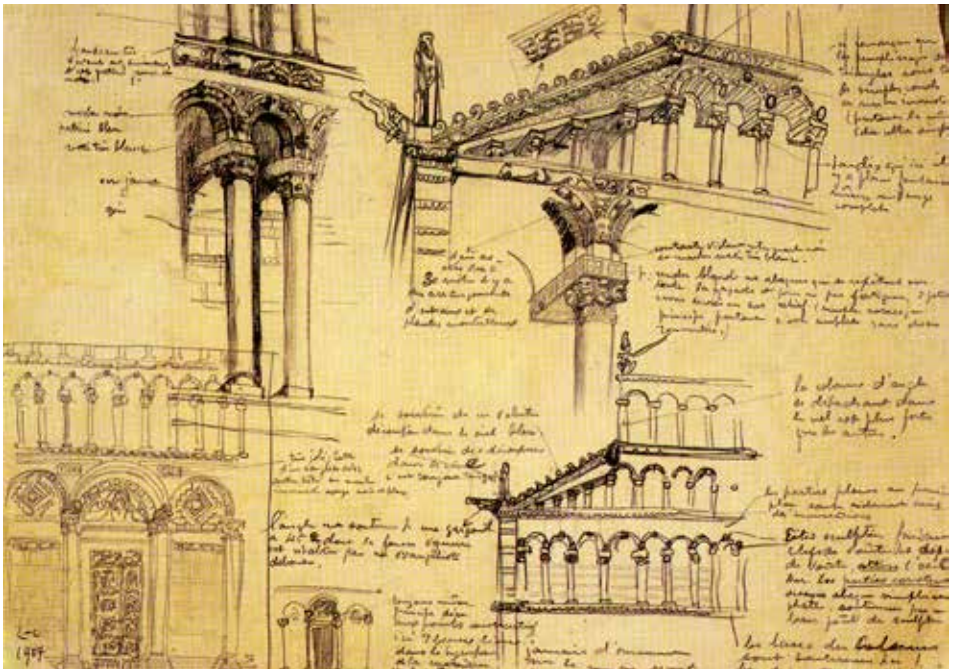


Fig. 2 The Corbusier, Details of the Cathedral of Pisa

With the advent of photography, the role of traveller/sketcher seems to have disappeared, but today there are many people that are passionate about this old and noble tradition and I had the honour of getting to know one of them: Professor Gaspare de Fiore.

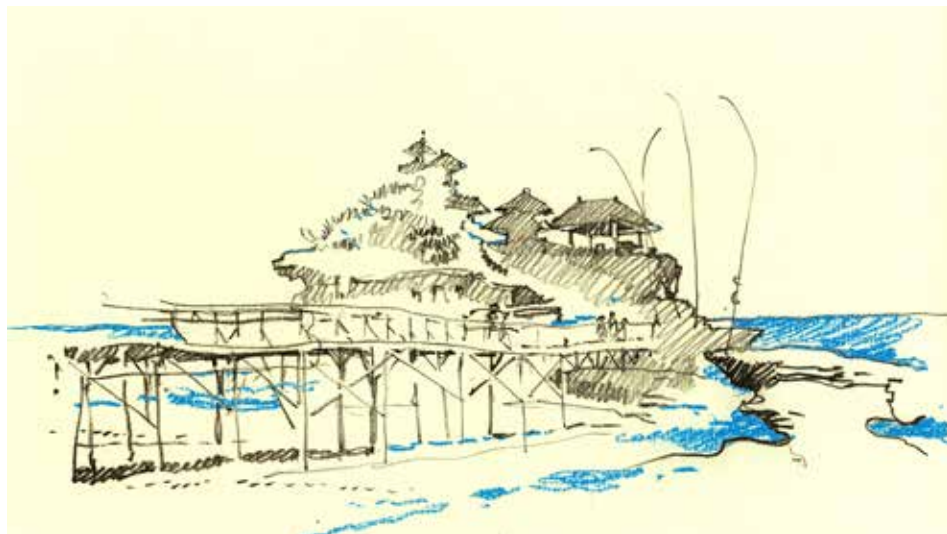
I travelled with Professor Gaspare de Fiore along some of the trips he enthusiastically organised to cement the friendship among professors in the field of Representation as well as to share his thirst for knowledge with friends. I witnessed Gaspare de Fiore at work in Athens, Istanbul, Egypt, Bali, and Prague, or when sailing across the Rhine, and in Italian cities, such as, recently, in Matera. On every journey, he took very few things with him, but all were indispensable: drawing paper, a soft pencil, sanguine pastel and a blue one for the sky. Whenever he was sketching on his drawing paper, a small crowd of friends and curious passer-byes gathered around him and watched him drawing, all amazed and a little envious, drawing just a few quick, but precise lines that took shape on the paper. Some of his friends, who silently gathered around him in admiration, described these magical moments as follows: “he was convinced that the experience of living just for a few days in a new place, seeing monuments and works of art in person, walking along foreign landscapes, and meeting people living in the cities or countries we were visiting, represented a vast heritage, which completed your personality. Travelling to art destinations enriched your character and gave you the opportunity to understand yourself better. And this would lead you to have new ideas, and consequently new research prospects”<sup>4</sup>. While the group of colleagues and friends walked distractedly to see or photograph the object or building we set out to visit, Gaspare stopped and quickly sketched not just the building, but, with genuine mastery, the sensations and the feeling that this object suggested.

<sup>4</sup> E. Vigna, 2001

I admired his sketches because they communicated deep feelings, which – I was sure – my technically perfect photos could never communicate. Being with Gaspare in those moments taught me a great deal about drawing and especially travel drawing. However, I would have liked to talk with him about that fascinating work he did, and now that he has “returned to his Father”, as he used to say, I cannot help but look at the prints of those sketches, which he used to give as presents, and reread his writings hoping to find the answers to my questions. So what could be better than an imaginary interview with our mentor?<sup>5</sup>



*Fig. 3-4 Gaspare de Fiore in Bali and Egypt*



*Fig. 5 Gaspare de Fiore, the temple in Bali*

<sup>5</sup>The “answers” of Professor Gaspare de Fiore are from the chart “Travel Notes” 12 drawings by Gaspare de Fiore.

## The interview

G. Gaspare, shall we begin?

D.F. Of course, let's sit here at the drawing desk; what do you want to talk about?

G. I would like to talk about travel sketching; I used to look at you drawing, but I never asked you anything about it – I would like you to enlighten me a bit on the topic!

D.F. “In the seventeenth and eighteenth century no erudite person or artist could ignore the Gran Tour, the trip to Italy. At the time, Italy was thought of as a happy place, because everyone found our country to be fun, sunny, with colour, flowers, sea and sky - here travellers became young again. They came here to see the monuments, ruins, art, women, and food, but they were actually looking for something inside themselves, they were looking for happiness. Rome was a mandatory stop as it was full of monuments where you could immerse yourself into the classical arts among the ruins of the great Roman civilisation. In Rome time seemed to pour out of stone and marble.”

G. Gaspare, you travelled a lot and you wanted to share this passion of the discipline of drawing with your friends, what does travelling mean to you?

D.F. “First and foremost you travel to find yourself and your identity, and to fill that void that, sometimes, we feel inside. You travel to find your roots. This thirst for knowledge, this constant search affects us all, young people included. Eventually, we all need to stop and ask ourselves where we are going, who we are - you know, the usual questions.”



Fig. 6 Gaspare de Fiore, Cairo: Cheops pyramid

G. Why are travel sketchbooks among the most interesting types of drawing?

D.F. “I think it’s because they unite two incredibly fascinating things: the first one is the sketch itself, which is the most spontaneous expression of drawing, so much so that it is specific to each person. The second is the concept of travelling as an adventure with literary and symbolic meanings, which is often seen not just as a journey through unknown lands and countries, but also as a metaphor for the journey of life”.

G. Why do you think we should draw when travelling?

D.F. Well, firstly, because when you draw, you “see”, you understand. Drawing becomes a fundamental element to understand what is in front of you. Not just to understand it, but to become involved with it. If you really want to see, you must draw.

We mainly draw for ourselves - drawing leaves something in your soul, mind, heart and hand, right inside of you, much more than a photo ... photos are a mechanical process which is a little detached from us. On the contrary, even a bad sketch carries a deeper meaning. We also draw for others, which we did more so back when there were no cameras. Drawing was a means to document and remember. Goethe was really proud to show his friends in Wiemar, and especially to his friend Charlotte, the drawings he did in Italy that enriched his literary journey.”

G. Among your many drawings, which one are you most fond of?

D.F. “It is the sketch that hangs on the wall of my study. It is a travel sketch representing a horse, seen from behind, with big hoofs and a long tail. On the horse there’s a Bedouin, slightly leaning on one side and looking towards a donkey next to which there is a coach with a horse.

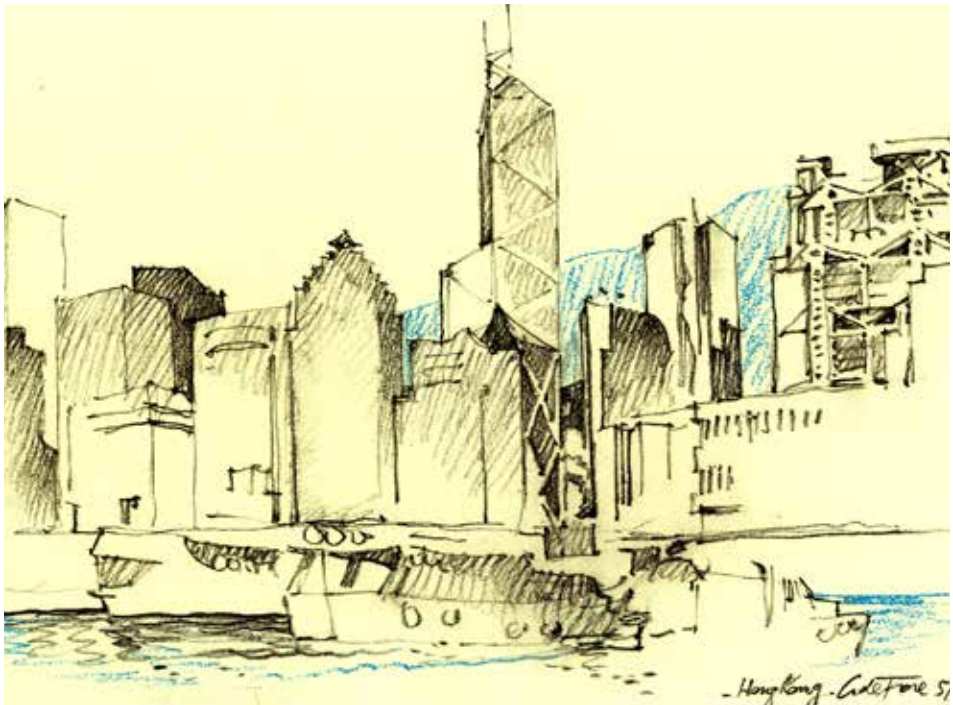


Fig. 7 Gaspare de Fiore, skyscrapers in Hong Kong



There is no driver on the coach - the horse is frontal, with packsaddle and blinkers ... All characters and everything else is still ... I saw this scene while I was looking for a hotel during a study trip to Egypt. We were caught in a sand storm and were forced to stop the car. I got out. There was a unique moment, where everything was still, waiting for the storm to pass.

Suddenly, something extraordinary happened: a gust of wind blew away the sand clouding the horizon, and there it was, all of a sudden, the pyramid of Cheops ... it was so big and close to us that it seemed like you could have touched it with your hand! I had never seen it and now I was looking at it in all its greatness, as if someone had just lifted the veil covering it. I had an envelope in my pocket, and on the ground there was some charcoal, left after a fire from the night before. I took a piece of charcoal and I sketched the scene. Suddenly another gust of wind blew the envelope, dragging it along the sand. When I went after it, I found that the wind, moving the envelope, had scrubbed out the charcoal lines, or more precisely, it had blurred them, "shaded" them. I could see the wind in the drawing now. I had never drawn the wind before and now that it presented itself it felt amazing".

G. What is your conclusion about travel drawing?

D.F. "Through a journey's stories and sketches we can see that travelling can become a means of identifying oneself. Travelling can fill the void inside us, which we sometimes feel. By looking around, jotting down our thoughts, drawing images as well as our feelings, we can for at least one moment stop in this race for our existence. We can listen to ourselves and look deep within our souls. I believe that this way of taking notes when travelling is a way to understand and find ourselves".

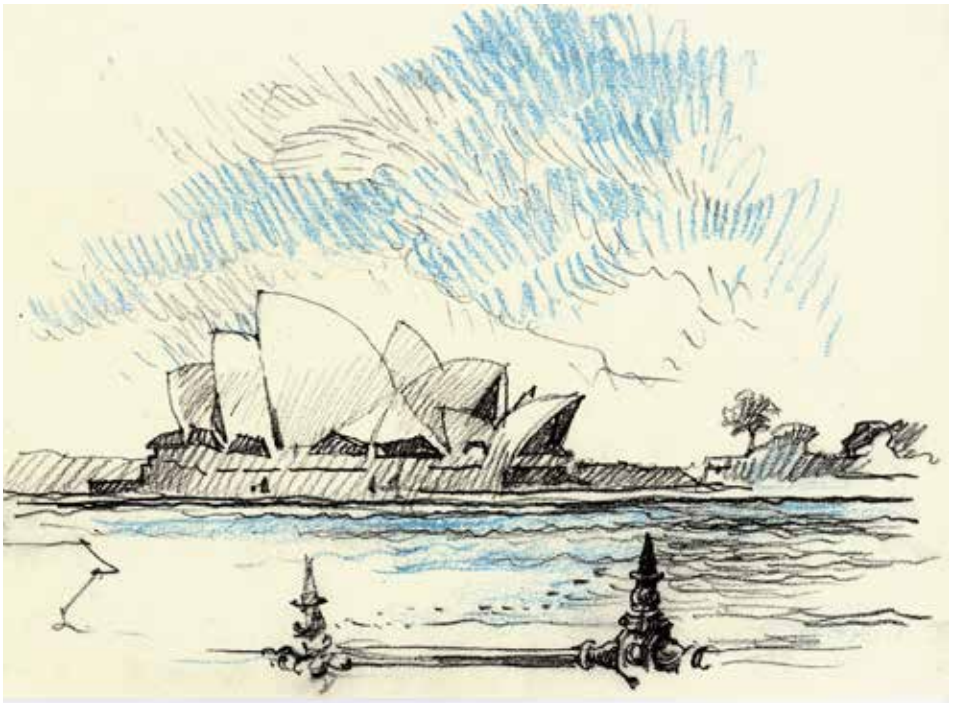


Fig. 8 Gaspare de Fiore, Opera House in Sidney

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## **Land lighting vesuvius project: 79a.d. - 2019a.d.**

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### **Abstract**

The meeting of the Architect Diego Repetto, the Lighting Designer Emilio Ferro, creators of the Land Lighting's concept and pioneers of this art movement, and Spacecannon SNe experience has developed a Land Lighting project unique in the world.

After 1940 years by the eruption of Vesuvius in AD 79, in August 2019 the project Land Lighting Vesuvius will allow to create a bridge of light able to join in the present a distant past with a future more and more near.

100/150 Xenon headlights in 7000watts power each will create an eruption of light that, thanks to its jets, will be visible in a 13 kilometers radius.

Overlooking the Gulf or embraced by the enchanting places which from all sides surround the flanks of the volcano, Neapolitans and not only will enjoy a unique and evocative vision.

In its history Spacecannon signed significant lighting events.

Among them the most famous are:

- *Tribute in Light*, famous art installation in memory of the victims of September 11, 2001. 88 Xenon headlights, positioned near the World Trade Center, generate two vertical columns of light projected into the sky designing the profile of the Twin Towers destroyed in the terrorist attack;
- *The Peace Tower* conceived by Yoko Ono. The achievement, in which the Italian company has been involved in all its phases next to Yoko Ono, was inaugurated in October 2007 on the island of Videy in Iceland, on the occasion of the 67th birthday of John Lennon.

### **Introduction**

Land + Art + Design + Light = Land Lighting.

In Land Lighting, light transforms the environment and landscape perception:

Thanks to the light the landscapes are renewed, they take on new forms, capable of transmitting to the observer the desire to investigate themselves and their past, present and future, interpreting the existing and building new narratives.

Land Lighting is strongly characterized by scenic lighting projects capable of returning new night scenery, where art, landscape, architecture and design are confronted with environmental and landscape sustainability issues.

### **Methodology**

The meeting between the designer Diego Repetto and Lighting Designer Emilio Ferro, creators of the term Land Lighting and pioneers of this artistic current, and Space cannon SNe's experience has generated an excellent Land Lighting project unique worldwide.

In the 1940s from the eruption of Mount Vesuvius of 79 A.D. in August 2019 A.D., the project of Land Lighting *Vesuvius: 79A.D. - 2019A.D.* allows to create a bridge of light capable of joining in the present a far past with an ever closer future.

The date of the eruption of Mount Vesuvius of 79 A.D. has been identified in a letter from Plinio il Giovane addressed to Tacitus<sup>1</sup> and attests around 24 August.

However, some archaeological finds suggest that the eruption occurred in the autumn, probably on October 24 of that year<sup>2</sup>.

Vesuvius, considering its official date (August 24, 79 A.D.), woke up at nine o'clock in the morning; however, the actual eruption began only one afternoon.

Inside the volcano, a duct caused by a series of explosions due to the sudden transformation of the water in to gas encountering the magma climbing up. Then a column of gas, ashes, pumice and pyroclastic fragments rose for about 15/20 km above the volcano and created a cloud that dimmed the sun<sup>3</sup>. The height of Vesuvius is over 1,200 meters and rises within a caldera of about four kilometers in diameter.

The caldera represents what remains of the great eruption of the 79 A.D.: one of the largest and spectacular volcano eruptions and one of the first to be documented (Figure 1)



Fig.1 Satellite image from <http://vulcan.fis.uniroma3.it/italia/campania/vesuvio/index.html>

The eruption has been represented over the centuries in various artworks, including: *Vesuvius from Portici* by Joseph Wright of Derby del XVIII sec. (Figure 2) and *Vesuvius* by Andy Warhol of 1985 (Figure 3)



Fig.2 *Vesuvius from Portici* di Joseph Wright of Derby del XVIII sec.

In 1969, the artist Gianni Pisano of the Non-existent Gallery performed the performance *The Vesuvius Awakening*, an artistic installation that caused a stir in the press of the time. The same artist in an interview on May 24, 2015 at Il Mattino states: «[...] we made a stir. We simulated an eruption, by burning dozens of cobwebs, the crater filled with smoke, we panicked».

With reference to the above-mentioned Land Lighting project, which takes the title *Vesuvius: 79A.D. - 2019A.D.*, becomes the union trade between the past and the future: 100/150 7000watt Xenon headlights will give rise to an eruption of light that will be visible in its 13km radius (Figure 4). Headlights are placed within a circular perimeter in a suitable location near the crater, in order to create a three-dimensional mega-beam.



*Fig.3 Vesuvius by Andy Warhol of 1985*



*Fig.4 project simulation of Land Light Vesuvius: 79A.D. - 2019 A.D.*

The one-night event could be complemented by an iOS and Android-related application to local and / or national radio transmitting a soundtrack that can amplify the emotional aspect: every viewer would enjoy the show of Land Lighting in an unprecedented way, interiorizing the moment in the absolute respect of those who are close to it.

The potential for tourism is infinite: viewers will enjoy a unique and evocative vision of the “light” eruption by sea from the Gulf of Naples, from the archaeological site of Pompeii (Figure 5), from the same National Park Vesuvius, etc.



Fig.5 project simulation of Land Light Vesuvius: 79A.D. - 2019 A.D., seen from the archaeological site of Pompeii

A special occasion to speak in the world of Italy and to celebrate an event that marked the history of the Beautiful country and collective imagination.

Land Lighting, an expression that sums up the concepts of Land Lart and Lighting Design, has seen various applications in the past, especially to celebrate memorable moments that have marked the history of humanity or major international events.

In his story, Spaccannon SNe has signed major events with leading stars, including the *Tribute in Light* in New York and the *Imagine Peace Tower* in Reykjavik.

The *Tribute in Light* is the famous artistic installation in memory of the attacks of September 11, 2001; 88 Xenox headlights, positioned near the World Trade Center, generate two vertical columns of light projected toward the sky, in order to simulate the Twin Towers collapsed in the wake of the air strikes (Figures 6 and 7)



Fig.6 image of Kim Carpenter, [http://www.flickr.com/photos/kim\\_carpenter\\_nj/](http://www.flickr.com/photos/kim_carpenter_nj/)



Fig.7 image of Tarek Awad, <https://www.flickr.com/photos/awadoftarek/>



Since 2003, it is regularly lit up on the night of September 11 each year.

The design idea, born in the post-disaster week, sees the protagonist Philip K. Howard, who wrote to then-mayor of New York, Rudolph Giuliani, asking him to consider installing two giant headlights at the site, projecting their lights in the sky.

In order to realize the memorial, after several considerations, the public administration decided to contact lighting experts specializing in intense visible lights at a distance: the Italian company Spacecannon SNe. Another challenging challenge, which involves the Spacecannon SNe, is the Imagine Peace Tower (Figures 8 and 9). At the beginning of 2006, Yoko Ono contacted the Italian company's president, Gianmaria Rivetti, entrusting him with the task of providing the machines to give light to the "Peace Tower" installed on the island of Videy in Iceland near Reykjavik for the sixty-sixth anniversary Of the birth of former Beatle John Lennon.

The company, the world leader in lighting engineering and in the design and implementation of ambitious scenic set-ups, has thus taken care of the whole project of illuminating the Peace Tower designed by Yoko Ono and inaugurated in October 2007 at 22 (Italian Time).

The monumental light beam, as described by the Washington Post, projects the words "Imagine Peace" in 24 languages and remained operational until December 8, 2007, when New York John Lennon was murdered.



Fig.8 image from <http://testitradotti.wikitesti.com/wp-content/uploads/2011/10/Imagine-Peace-Tower.jpg>

In an interview with The Republic in October 2007, Gianmaria Rivetti of Spacecannon SN says: «It was Yoko Ono's dream; Had started talking about it during the Olympic Games [2006], here in Turin, when he attended the Opening Ceremony, reciting the very words of "Imagine".

There he had the opportunity to know the company directly, because we were managing the complex of Olympic lights, but we had already heard about the *Tribute in Light* in Manhattan, in memory of the victims of September 11, where we recreated with Light bundles of the Twin Towers silhouette. The Xenon headlights produce a light that is very close to the solar one. Using them for a work so full of memories and hopes is a great new emotion for us».



Fig.9 image from <http://www.iceland.is/press-media/events/imagine-peace-tower-relit-on-spring-equinox-/191/>

## Conclusions

Paul Klee affirmed in the literary work *Theory of form and figuration*:

«Art does not repeat the visible things, but it makes it visible because the artist contemplates the things that nature places under the eye already formed with a penetrating eye. And the more he penetrates, the easier he can move the point of view from today to yesterday; The more it enters into the mind, instead of a definite image, the only, essential image of creation as a genesis»<sup>4</sup>.

The project of Land Lighting *Vesuvius: 79A.D. - 2019A.D.* represents a new visual, artistic, emotional and landscape frontier; Paraphrasing Maziar Yaghmai, will be a megagalactic event<sup>5</sup>.

A company of this magnitude has never been realized in the Beautiful Country and in the world, what will be created is a unique international event able to project Italy, the Campania Region, the city of Naples and the neighboring municipalities all 'Vesuvius' area into a "visual channel" that will inevitably affect the collective imagery for a long time.

Through this great land-lighting gesture of one night, the geographic scope of the intervention would benefit from various benefits, including, socially, creating new economic opportunities for both the local population and tourism.

As in the case of Tribute in Light, New York's dramatic experience, it would be a "postcard" capable of renewing and revaluing the image of the territory, becoming a symbol of a memorable event and of the geographical context and social.

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## The image of the contemporary landscape. Draw for knowledge and planning.

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### Abstract

The definition of landscape, as expressed by the European Convention (2000, Florence), involves the awareness of its dual nature: on the one hand the perceptual-subjective aspect and on the other the natural-scientific aspect that will determine the complexity of this concept.

If the representation is the process by which the perceptions, images and information, are reworked and interpreted, in which the drawing has the role of language, represent the landscape is, therefore, a fundamental step for the knowledge and the development system of complex factors, of different nature interacting with each other, which contributes to its final communication.

The drawing is, therefore, a basic knowledge tool for landscape architecture, able to manage, process and interpret multidisciplinary aspects that characterize this discipline.

This article will focus, through examples of contemporary representation of the landscape, such as the drawing is used by architects, both traditional techniques and in the forms allowed by modern information technology, to analyze the context and to express design ideas.

The objective is, to understand how the contemporary landscape is represented and to identify which are the most widespread and effective mode of communication of design ideas.

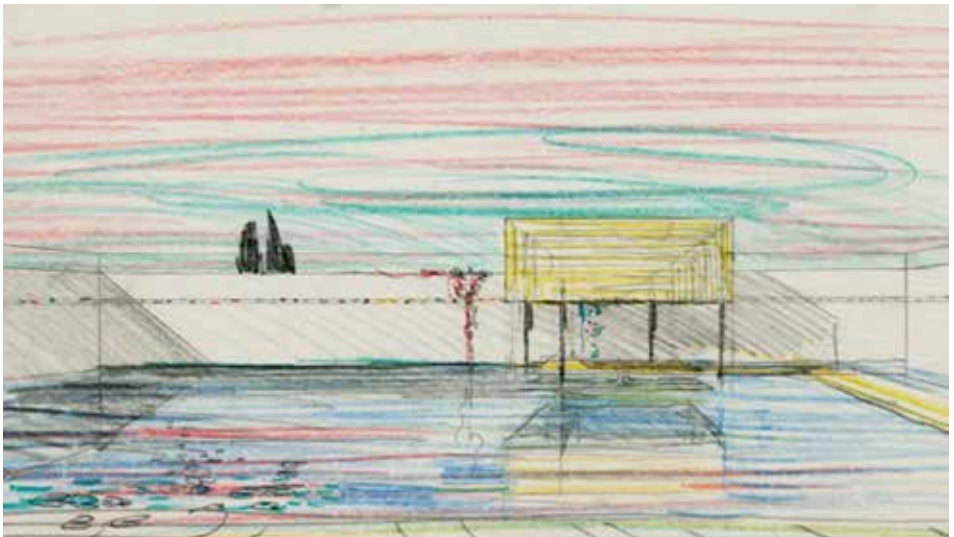


Fig.1 Carlo Scarpa, drawing for Tomba Brion, Water pavilion, San Vito d'Altivole 1969-1978

## Introduction

“Voglio vedere le cose, non mi fido che di questo. Voglio vedere, e per questo disegno. Posso vedere un’immagine solo se la disegno.” (Carlo Scarpa)<sup>1</sup>

Drawing is a fundamental part of both the student’s landscape architecture design and the design phase for the landscape architect; Only through analytical observation and subsequent synthesis in graphic signs, in fact, knowledge of the object takes place. His role as a fundamental tool in design has ancient roots and is traditionally linked to the basic formation of the architect: for Vitruvio architecture is science “adorned by many doctrines” where the architect must master the “disegno perché egli sia capace a potere cogli esemplari miniati mostrare ogni qualunque forma voglia fare d’alcun opera”<sup>2</sup>. In the Renaissance treatises on architecture in general, drawing is the means by which to know, study and transmit classical architecture (Vignola, Serlio, ...).

Particularly in the *De Re Aedificatoria*, Leon Battista Alberti, one of the leading Renaissance architects, dedicates the first chapter of his treatise to Drawing, defining architecture as follows: “Architecture as a whole is made up of drawing and construction”<sup>3</sup> giving to drawing a fundamental role in the process of architectural production. The design was the tool used by scholars who in the 17th century began the Great Tour, the study trip through the main European cities where Italy with its architectural-landscape beauties was a privileged destination; M. P. Gauthier has left many survey drawings of his period of study in Genoa where he reproduced the relationship between the Genoese palaces and villas with their formal gardens.

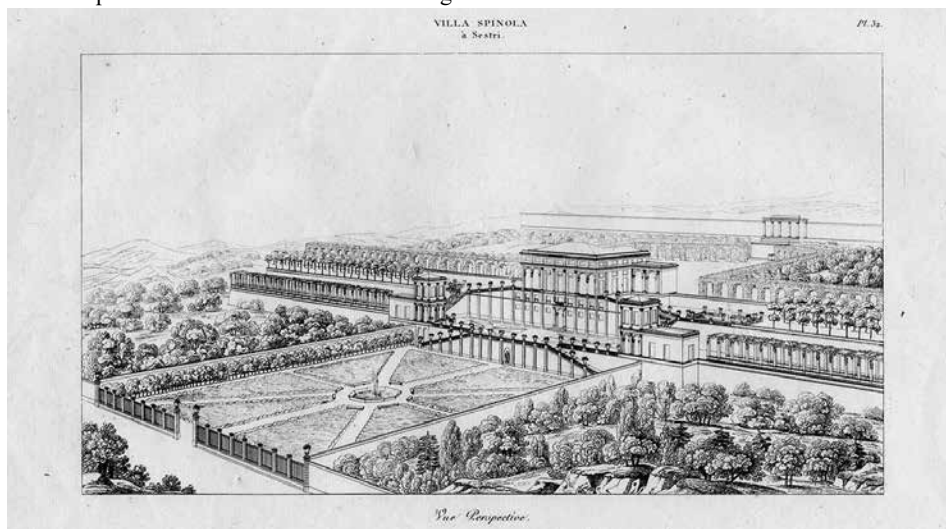


Fig.2 M. P. Gauthier, Perspective view of Villa Spinola, Sestri Ponente Genoa.

In the 18th century with the emergence of scientific cartography, thanks to the invention of precise measuring instruments, the representation of the territory is distinguished from landscape views mainly related to visual-perceptual aspects.

It is not by chance in the same historical period, the term landscape architecture was introduced by Gilbert Laing Meason in 1828 with its book “The Landscape Architecture of the Great Painters of Italy” used for the first time in relation to the relationship between architecture and natural context in great Italian pictorial landscapes depictions.

<sup>1</sup> Gellner E., Manuso F., Carlo Scarpa e Edoardo Gellner. *La chiesa di Corte di Cadore, Electa*, Milano 2000, p. 38.

<sup>2</sup> Dell’Architettura di M. Vitruvio Pollione, *Libri Diece*, translation of Baldassare Orsini 1802.

<sup>3</sup> Leon Battista Alberti, *De Re Aedificatoria*, First Chapter: Lineamenta- The Drawing 1483

From the standpoint of representation, this clear separation determines the production of very different formal designs where the landscape becomes the subject for perceptual-visual representations influenced by the new landscaping taste developed in the 18th century.

The landscape-perception relation still plays a key role in this discipline so as to be part of the landscape definition derived from the European Landscape Convention (Florence, 2000): “Landscape designates a certain part of territory as perceived by populations whose character derives from the action of natural and / or human factors and their interrelations”



*Fig.3 Village S.Lazzaro e S.Teodoro colored waterproof etching by G.Piaggio and Del Pino 1818 ca (Collezione topografica del Comune di Genova).*

The advent of information technology in the 80s, with its new and powerful expressive capabilities, not only does not disregard the traditional drawing of the primacy on the genesis of the architectural idea, but generally reinforces the need for the landscape architect to know the tools and theories at the base of drawing and representation in order to better control and manage the great potential that these tools offer.

“Il luogo per me privilegiato in cui l’abitare viene continuato e migliorato al fine di rendere la vita degli esseri umani sempre più libera e felice è il disegno. Esso è lo spazio dell’idea, l’ambito tematico nel quale la scrittura architettonica si definisce, la dimensione conoscitiva e creativa che si articola in un’internità e un’esternità, nel senso che il pensiero deve trovare il modo di sottrarsi alla indivisibilità in cui è avvolto fino a quando è ancora nella mente per farsi immagine comunicabile, giudizio esplicito e tendenzioso sulla realtà e sulla sua trasformazione.”<sup>4</sup>

<sup>4</sup> Franco Purini, from the *Lectio Magistralis*, Genova 11 Maggio 2016

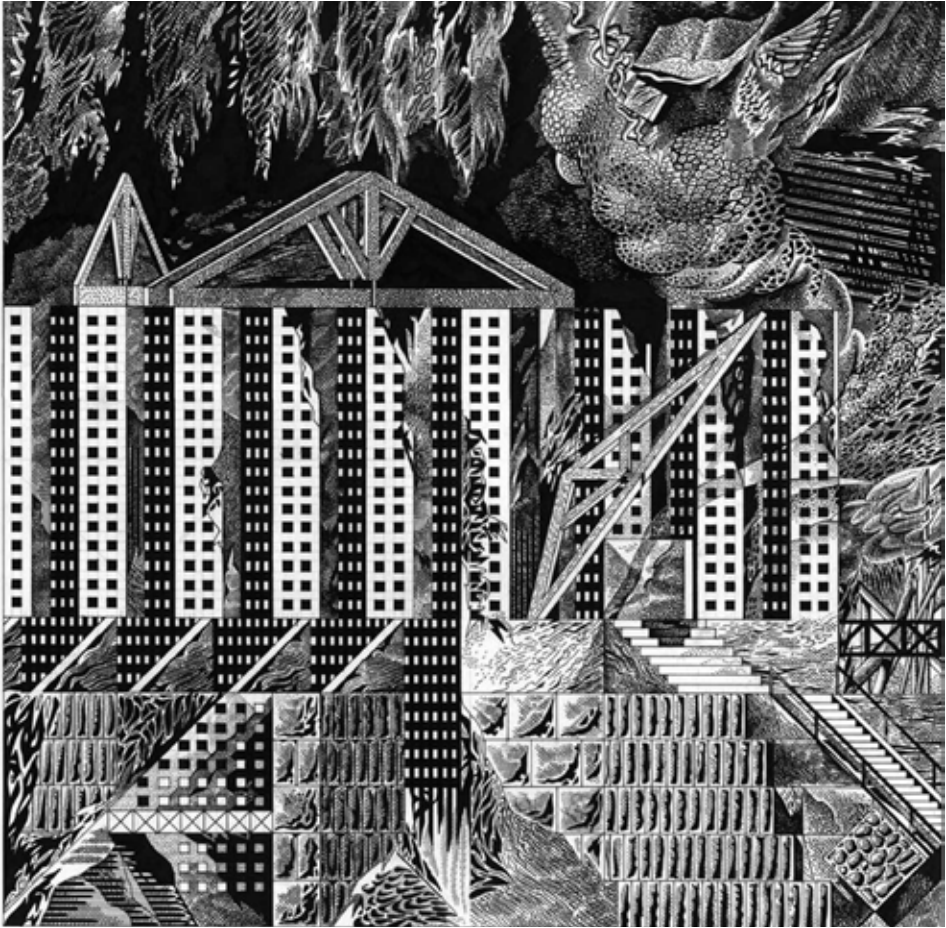


Fig.4 Franco Purini, *Il tempio colossale abbandonato*. Permanent Collection Francesco Moschini e Gabriel Vaduva A.A.M. *Architettura Arte Moderna*

### **The contemporary drawing of landscape architecture**

“Whether capturing masterworks, analyzing the archetypal, or traveling to see at first hand the great buildings and landscapes, drawings developed from critical observations coerce us to better understand the subject.”<sup>5</sup> (Walter J. Hood)

What do you mean by contemporary landscape design in this essay? In general, the landscape design has much older origins than the term landscape architecture: Giotto, for example, often uses landscape views to set the scenes of St. Francis’s life in his cycle of frescoes at the Basilica of Assisi. From the point of view of representation, these drawings play a fundamental role in the use of the pseudo-perspective that Giotto introduced in this type of depictions.

<sup>5</sup> Walter J. Hood (Professor of Landscape Architecture & Environmental Planning and Urban Design, University of California, Berkeley) from *Color field*, AAVV (by M. TRIEB), *Representing Landscape Architecture*, Taylor & Francis, New York, 2008

What you want to highlight, however, is the relationship that the contemporary landscape architect has with the drawing in the light of the new possibilities offered by information technology so it was decided to limit the field of analysis to design drawings from the '80 to our day.

Drawing is a knowledge-based activity where graphic conventions express the will of design; it is a mental synthesis and, for that matter, it is a fundamental part of all design reasoning.

The drawing has different forms of expression depending on the objectives that the representation is intended for, predominantly linked to the different stages of the creative process: sketch plays a key role in defining project objectives while plans and sections are related to project communication already defined. The drawing is the visual language of the landscape architect who makes possible and visible through the images the project while representation is the method with which the project is expressed.



Fig. 5 Giotto, *Storie di San Francesco, Frescoes of the Basilica of San Francesco Assisi.*



Fig. 6 Walter J. Hood, *drawings for Hilltop Park, San Francisco CA*

### Sketches and the evolving of design idea

“Drawing is the work of designers. Whether is done with a computer or a pencil, drawings are what we actually make. No matter how much we think of ourselves as builders and makers, landscape architects like myself almost never actually built or make anything physical ourselves. Someone else does, and almost always from our drawings.”<sup>6</sup> (Laurie Olin)

Architectural design sketches are, without shadow, formal arguments useful for solving the functional and aesthetic problems that are encountered at the initial design stage.

These thinking tools serve to explore design ideas in every aspect and through continuous redrawing of an idea, create a thought path that can lead to the ultimate design solution.

Sketches can be made with different graphical techniques (pencil, china, watercolors, colored pencils, pantones) and can use different geometric techniques (perspective, assonometry, orthogonal projections)

Sketches can be made with different graphical techniques (pencil, china, watercolors, colored pencils, pantones) and can use different geometric techniques (perspective, assonometry, orthogonal projections)

<sup>6</sup> Laurie Olin (Practice Professor of Landscape Architecture, University of Pennsylvania), *Drawing at works: working drawings, construction documents*, AAVV (by M. TRIEB), *Representing Landscape Architecture*, Taylor & Francis, New York, 2008

but in any case remain the expressive form of a long work of Mental processes aimed at defining the design idea. Choosing a graphic technique does not rule out the use of another: it is common for architects to choose different tools together to express their design ideas by mixing signs and colors to better communicate a concept.

“Sketching in about exploration, about learning to see places and architecture through the graphic experience”<sup>7</sup>.

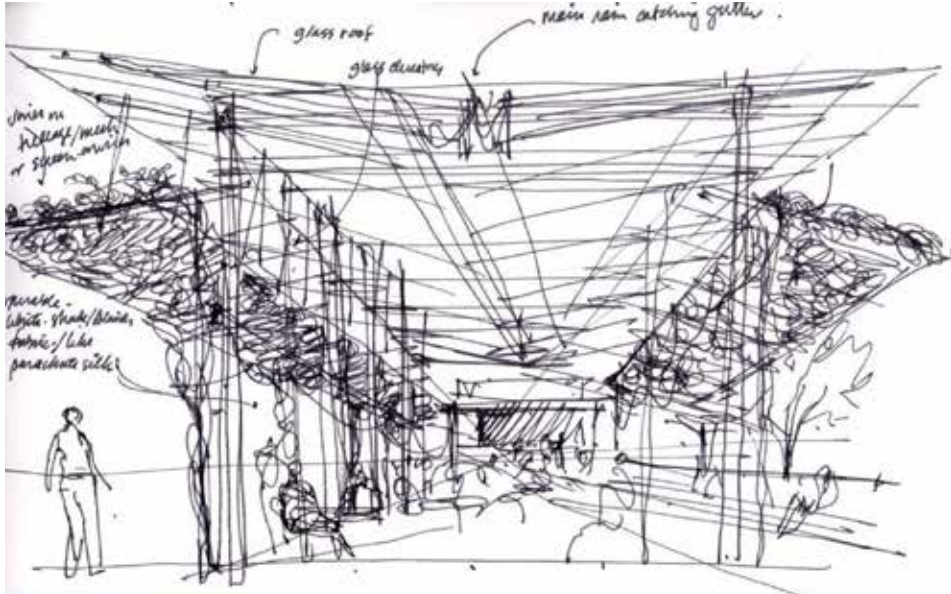


Fig.7 Laurie Olin, sketches from the Simon and Helen Director Park project, Portland OR.

### The communication of the project: technical drawings and renders

“A plan presents a view that never exists in reality. It’s a convenient fiction, and like the section and elevation, a fiction that denies human binocular vision, saccadic visual reception, the curvature of the earth and the effects of atmospheric distortion. It’s a utopian form of representation....”<sup>8</sup> (Marc Treib)

If the representation of the project is to be “abstract, simplified, readable, and communicative”<sup>9</sup>, all of these features are found in technical representations (plans, sections, elevations) where graphic conventions play a fundamental role and are universally acknowledged and recognizable.

Until the 1980s this type of drawing was entirely handmade: technigraphic, quick, squares were always present in an architecture studio.

The advent of information technology and the rapid diffusion of hardware and specific software for the architecture have radically changed the practice of architect’s work for centuries linked to manual skill in technical drawing.

<sup>7</sup> Brian Edward (Architect and Professor at Edimburg College of Art), *Understanding Architecture Through Drawing*, Taylor & Francis, New York, 1994

<sup>8</sup> Marc Treib (Professor Emeritus of Architecture, UC Berkeley College of Environmental Design) *On plans, AAVV* (by M. TRIEB), *Representing Landscape Architecture*, Taylor & Francis, New York, 2008

<sup>9</sup> Thorbjorn Andersson (Landscape Architect), *From Paper to Park*, AAVV (by M. TRIEB), *Representing Landscape Architecture*, Taylor & Francis, New York, 2008



An epochal change not only from a practical point of view, with only one file today you can print endless copies of the same design, but also and above all of thinking thanks to the new design possibilities that these tools have introduced.

From the standpoint of representation, however, there is a continuity of thought and theory that information technology has not changed: graphic conventions have remained unaltered and all the baggage of theoretical knowledge related to descriptive geometry remains of paramount importance to a professional who wants to exploit modern technology without being a mere technical user.

The most interesting novelty introduced by the computer revolution, from the point of view of the drawing, are the render: images made to the computer that can describe a design idea in an effective and direct way.

They are often compared to design sketches but the substantial difference remains the project phase in which they are made: sketches remain a product of the initial phase, drawing for design choices, while the renders are highly communicative products but made at the end when the idea has already been fully developed.

## Conclusions

The drawing of contemporary landscape architecture has undergone remarkable and rapid changes linked mainly to information technology that has expanded its capabilities by opening the door to the development of new and interesting design and representative paths.

However, it remains clear how manual design is an essential skill for a good architect who wants to express, experiment, explore and develop his own ideas, qualities recognized by world-renowned architects such as Laurie Olin. The manual skills in the design and use of modern forms of representation offered by technology information are not mutually exclusive, but together they form an essential and useful knowledge of the architect to design the contemporary landscape.



*Fig.8 Laurie Olin, render from 30th Street Station District Plan, Philadelphia PA*



Fig.9 Thorbjorn Andersson with sweco architects, drawings for The physic garden at Novartis Campus, Basel, Switzerland

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## Once I was drawing with the pencil

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*“[...] Once I was drawing with pencil, as one of my teachers taught me, Professor Gaspare De Fiore, he stated that pencil is ductile and, if desired, corrects the trait. But in the years I have abandoned pencil pencil, basically for laziness. The pen helps you to think. When you make a sign with the pen you have to think it well to avoid mistake [...]”<sup>1</sup>*

### Introduction

The sign left by a pencil, its path is a clear, understandable lexicon. In this age, where digital becomes a clear language at every latitude, I write pencils and pens because, well, the design fascinates and conquers, stimulates and curts. It happened in the past, it still happens today. However, it is necessary to recognize the functions of the drawing, because it has a logical path, made of step. The first step is to know: drawing, from a young child, we learn to look, observe and understand. Growing up, “filtering” the images and scattering, it approximates. Depending on its cultural inclinations, educational or personal trails, we become urban observers, we look from a particular point of view from the bottom.



Fig. 1 Mario Manganaro, Matera (2006)

<sup>1</sup> <https://youtu.be/jR00MMixNuw>. Homage to Mario Manganaro. Mario Manganaro, a generous researcher. UID Italian Drawing Union. University of Basilicata - DiMEM Department of Mediterranean European

## Methodology

The understanding of technical design becomes a primary element in knowing the representation, whether architecture or landscape. [...] *The rules exist and we must know them well enough to be able to break them [...]*<sup>2</sup>. If we think of the Egyptians we see that their representation is symbolic and evocative. It is symbolic because it does not represent the real, evocative because it reminds us, always with the same traits, what we want to tell, but still follow a fierce geometric and representative methodology. [...] *For the construction of the tomb of a Pharaoh, it was for phases and stratifications: there was, first of all, the spreader of the walls, the one who prepared the support upon which the designer and then the painter acted. In essence, three separate people could work on a wall. [...]*<sup>3</sup>. If in the representations found in the Cheops Pyramid (Fig. 2) each character, decorative, religious, symbolic, has definite, precise details; In the narrative depicting the Journey of the Dead (Fig. 3), all the figures are referred to in a quick and summary section. Indeed, the hieroglyphs are italic as stretched over a great papyrus. And again, to tell about drawings and pencils, if we look at some tombs found in the Valley of the Queens, we better understand the path of drawing, representation and pencil stretch, which can be corrected. Figures 4 and 5 are pictures of the tomb of Queen Sat-Ra, wife of Ramesse I and mother of Sethi I. This burial was first discovered by the archaeologist Wilkinson during his expedition to Egypt in 1828 but was again buried because More, in those days, one must discover and find out. It was numbered, Tomb No. 38, geographically positioned and abandoned again. In 1903, the Schiapparelli - Ballerini Expedition, reopened, I analyze the architectural form and the decorative apparatus. The parietal decorations that appear to us as unfinished sketches make us see the stage of the drawing preceding the pictorial writing. The red ochre sign shows the uncertain hand of a first designer, where shapes and figures have relationship and posture errors. But you can also notice the dark shapes, with a safe and accurate stroke, of high quality decorative, capable of the master painter.



Fig.2 Image from the Cheops Pyramid, the representative canons pose the Pharaohs, Queen and Deities in the foreground, larger than the other narrators. Fig. 3 The Sun Travel in the World of the Dead, drawn from the Book of the Dead of the Amduat.

Another tumulus tells about the representative path of Egyptian pictorial and bas-relief decorations, which tells how the “pencil” path came to pass, comes from the Tomb of Horemheb (KV57)<sup>4</sup>, already general of the Egyptian army. And the last Pharaoh of the Eighteenth Dynasty. The discovery of this burial was done thanks to Theodore Davis and Edward Russell Ayrton in 1908. Thanks to them it was possible to understand that for the first time, from the historical and artistic point of view, the parietal decorations, in which the king prevails in the presence of various Divinity, are not only

<sup>2</sup> cfr. Previous note: Homage to Mario Manganaro

<sup>3</sup> Maura Boffito, Presentation History Lessons, Representation 1A - ICAR / 17, academic year 2011/2012.

<sup>4</sup> KV57 (King's Valley 57): The tombs were ranked in 1827, numbered 1 to 22, by John Gardner Wilkinson in geographic order. From No. 23 the numbering follows the order of discovery. It is recalled that the numbering of the tombs does not follow the chronology of the kingdom, but was arbitrarily assigned by John Gardner Wilkinson in 1827.

painted, but in bas-relief<sup>5</sup>. The narrated story is that of the Book of Doors in place of the Mduat. The narration, which has come to us incomplete<sup>6</sup>, shows drawings just sketched by the hand of the preparer, but we notice the later sections of the painter's corrections. There are the proportional calculation grids (Fig. 7), where, as I mentioned at the beginning of this paper, deep knowledge of geometry allows for correction, but also valuable artistic divination.



Figures 4 and 5 Images of the unfinished tomb of Regina Sat-Ra



Fig. 6 Horemheb's Tomb finds, unfinished bas-reliefs and the entrance stele

The passage from thought to sign has become enriched over the centuries: the designs of the Lascaux caves<sup>7</sup>, where animals are depicted with vivid detail, with many views, positions and attitudes, have a rapid graphic line. The drawing, which in itself is not elaborate, stops the moment, telling of a movement is a prehistoric frame.

The design becomes technical and precision and again the geometry starts to represent.

<sup>5</sup> For Historians Horemheb represents a Pharaoh of Transition, which changed many of the habits until then consolidated: from religious worship to agricultural cultivation, to pictorial representation by introducing the bas-relief technique, leaving behind the pictorial.

<sup>6</sup> For a long time it was considered that the incompleteness of the decorations was due to the abandonment of the tomb, but the long duration of Horemheb's reign suggests that this feature was desirable.

<sup>7</sup> The Lascaux Caves are a cave complex in southwestern France, near the village of Montignac, in the Dordogne department. They were discovered on September 12, 1940 by four French boys: Marcel Ravidat, Jacques Marsal, Georges Agnel and Simon Coencas. To paint these animals were used colors in nature: lands such as yellow and red ocher. The colors were applied with the fingers, blown with the mouth and distributed with vegetable fiber pads or using rudimentary brushes.

There is geometry in Japanese ideograms (Fig. 8), recorded in a regular polygon. The comic in all its historical and pictorial variations (Fig. 9).



Fig. 7 Paleolithic rock engraving of the Lascaux caves. Horse, about 18,000-16,000 years ago. Red oak, charcoal and graffiti on limestone. Cave of Lascaux, Dordogne, France. Fig. 8 Graphic technique pictorial of Japanese ideograms.

At the end of the nineteenth century, during their journeys, nobles from all over Europe took part in drawing on a notebook. Then, in their patriots, the memory and image of large cities and landscapes of great visual impact (Fig. 10). Although the Gran Tour was over for a long time, young Le Corbusier in 1905 undertook a trip that will take him to Italy. In Figure 11, the landscape that returns on a sheet, using graphite and colored pencils, speaks with an instant technique, however, where setting the margins of the drawing, layout and layout are accurate, the representation of the site is very Evocative, almost a photographic layout.

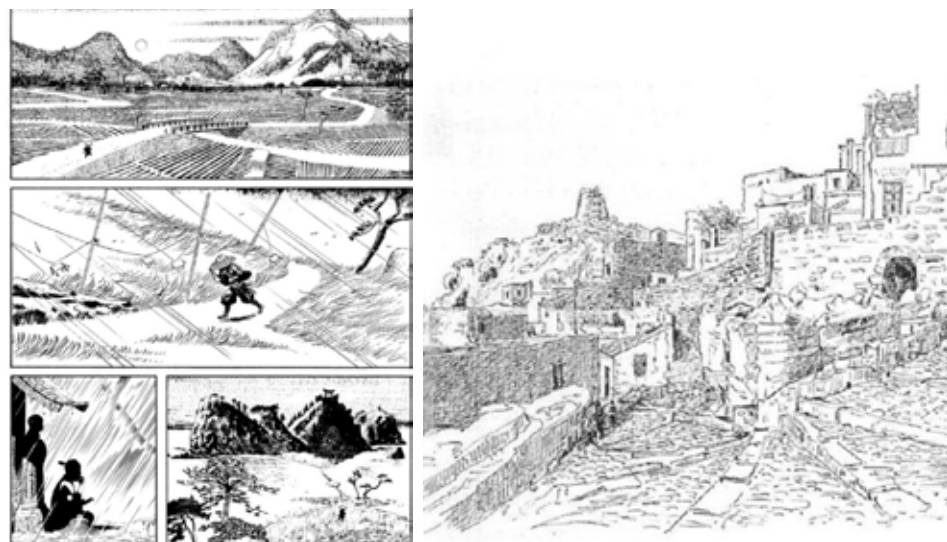


Fig. 9 Representation of Japanese landscape in a comic strip of Recchioni and Aicardi. Fig. 10 Entrance to Ustica di Salvatore Leonardo d'Asburgo (1875 ca.)



Fig. 11 Le Corbusier, *Paysage*, 1905, graphite pencil and colored pencil on paper

The design, in all its variants, meets all those who feel the need to represent and communicate. The same Bruno Munari stated in 1968 that: [...] “Visual communication is all that our eyes see”[...]<sup>8</sup>. The present representation of the city, the landscape (urban and suburban) has many elements that characterize it. Buildings, roads, structures, monuments are a constant view to our eyes, whether they are architectural or ordinary citizens, we all have the same vision: from below. Foster, with a few traits, gives a clear and definite project idea, nothing escaped, and his idea is expressed with a few strokes of pen (Fig. 12). Norman Foster knows geometry and uses it to express a project idea.

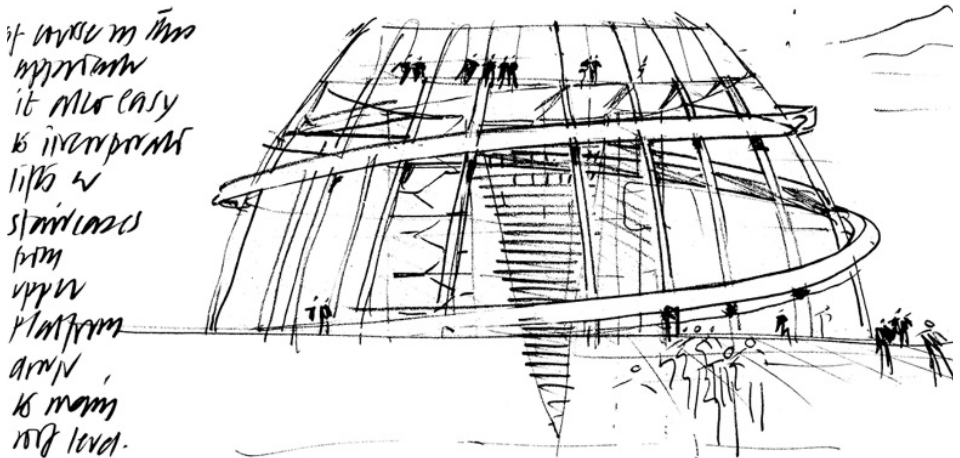
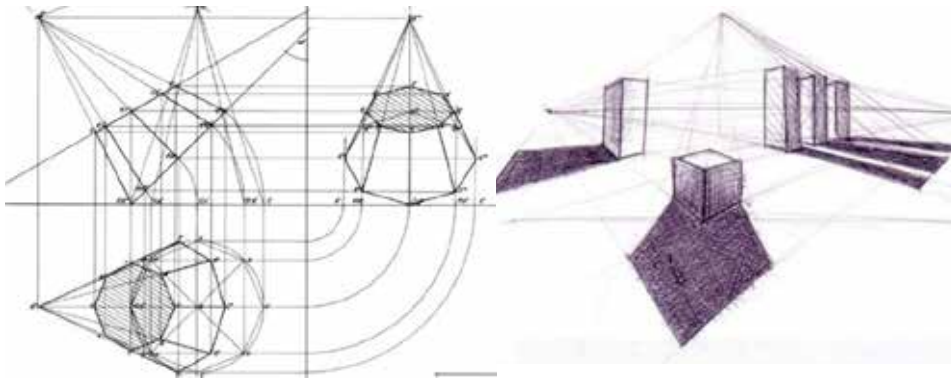


Fig. 12 Norman Foster, *projects and drawings*

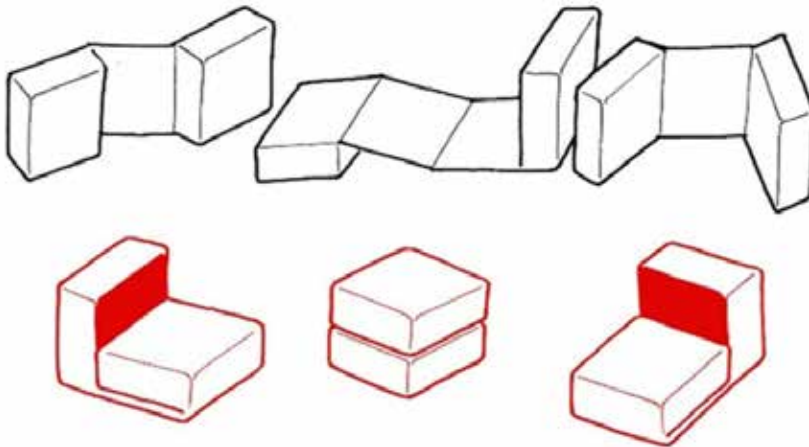
Although many graphic info progresses have been made, geometric rules have been used to move from the simple geometric design of a straight pyramid to orthogonal projections, to sketches of the urban project, stylized with solid and shadows in perspective (Fig. 13).

<sup>8</sup>B. Munari, *Design and visual communication*, Laterza, Bari 1968



*Fig. 13 Geometry of a straight pyramid in orthogonal projection, dissected by a plane a. Fig. 14 Solid with shadows in perspective*

Elementary geometric grids and modules, used to give shape not only to architecture and landscape, but also to the design of furniture and furnishings (Fig. 15).



*Fig. 15 Grids and modules, use of geometry for design*

Always geometry and its representation are used for educational purposes, as methods of learning on the themes of past and modern architecture, the example of Ville Savoy by Le Corbusier, which has become a major didactic model and study of architecture (fig 16). The use of graphics programs, such as SketchUp<sup>9</sup>, has led to remarkable graphical evolution, many university degrees take advantage of this software for educational purposes, one of the versions is free, easy to use, very intuitive and It represents three-dimensional objects, giving textures, lights and shadows. A simulation of reality.

<sup>9</sup> Sketchp is a program that allows you to create three-dimensional drawings with extreme simplicity, it has become very famous because everyone can create what they want with ease! This software was initially developed by a company called @Last (founded in 1999 by Brad Schell and Joe Esch).



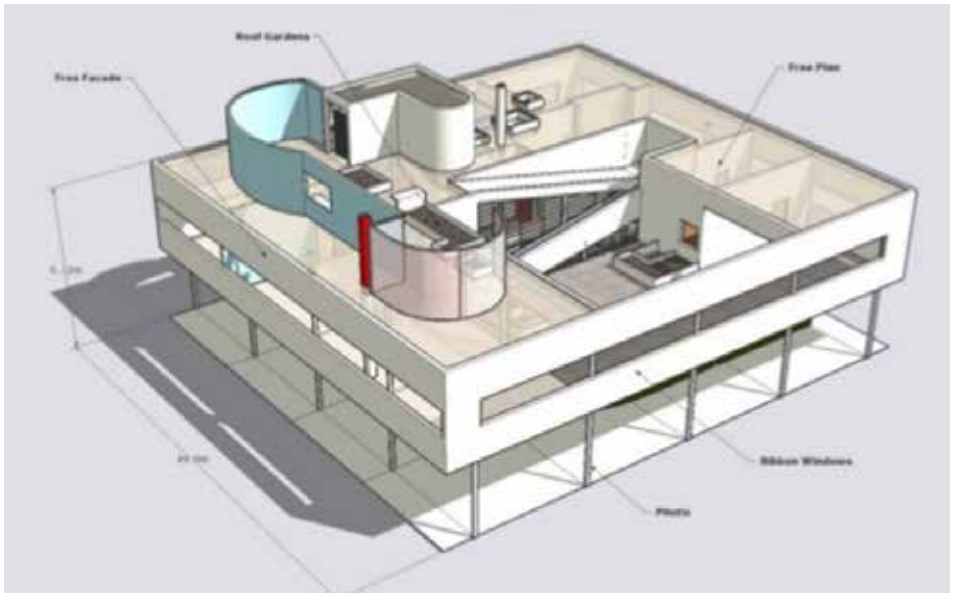


Fig. 16 Digital Evolution, Vile Savoy in a 3D Graphic Return obtained by processing a CAD drawing with the SketchUp modeling program

*Those who fall in love with science without science are like the jockeys entering the navy  
Without a rudder or compass, they never know where to go. Practice must always be built  
Above the theoretical good, of which the perspective is guide and door,  
and without this nothing is good.  
(Leonardo da Vinci)<sup>10</sup>*

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<sup>10</sup>Painting Treatise (16th Century), Part Two. The error of those who use the practice without the science



## Between utopia and reality: visions and pre-visions in *Machinae Novae* by Fausto Veranzio.

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### Abstract

Fausto Veranzio (Faust Vrančić, 1551 - 1617) humanist, philosopher and Dalmatian historian, known for its *Dictionarium Quinque Nobilissimarum Europae linguarum, Latinae, Italicae, Germanicae, Dalmaticae et Ungaricae* (Venetiis, 1595) and *Logica Nova* (Venetiis, 1616) was, curiously, a forerunner of the Machine revolution, that will own the revolution of science and technical progress during the Industrial Revolution. Trained at the University of Padua also in mathematics, lover of science and the progress of mechanics and engineering, he publishes at the end of the sixteenth century a “visionary” treaty, where instead his visions will translate in actually built. His treatise on *Machinae Novae* (Venetiis, c. 1595 or 1616) is anticipating scientific and technological advances that will find fertile ground in the eighteenth and nineteenth centuries. The Veranzio design is not only imaginative illustration of a machine or a work of engineering, is rather precursor sign of a refined technology that will be developed in the following centuries. The suspension bridges imagined and designed by Veranzio are, for example, precognitions of an engineering that will be declined, with infinite facets of sign and design, with the introduction of cast iron, iron and steel in Architecture, almost two centuries after publication of his treatise. In this short note we will tell the traces, the visions and pre-visions of a Renaissance man who anticipates, with his ideas and his projects, the Iron architecture design and especially the suspension bridges.

### Introduction

After the fall of the Western Roman Empire (476 A.D.) Western Europe falls into a state of scientific “slumber” effectively interrupting the development of science and technology. Conversely, the rise of Islam in the seventh century A.D. paves the way for new advancements in astronomical, mathematical and mechanical sciences, so much so that the historical period from the eighth to around the thirteenth century A.D. is rightly defined the Golden Age of Islamic sciences, a crucial period in the history of science [Alrushaidat, 2007]. Within this timeframe, Middle Eastern scholars initiate a work of great cultural depth, translating into Arabic the scientific and philosophical texts of such Greek scholars as Archytas of Tarentum (428 - 360 B.C.), Eudoxus of Cnidus (408 - 355 B.C.), Aristotle (384-83 - 322 B.C.), Archimedes (287 - 212 B.C.), Ctesibius (285 - 222 B.C.), Philo of Byzantium (280 - 220 B.C.), Heron of Alexandria (I century A.D.) and many others.

In a relatively short span of time, theoretical and applied sciences are developed thanks to the vision of the Abbasid caliph of Baghdad, Abū Ja'far 'Abd Allāh al-Ma'mūn (786 - 833), who founded one of the most important centers of studies that human history has ever seen, known as Bayt al-Hikma (بيت الحكمة or “The House of Wisdom”). Scholars who operated there include the likes of al-Khwārizmī (780 - 850 ca.), al-Kindī (801 - 873), Ḥunayn b. Ishāq (704 - 761 c.), Thābit b. Qurrā

(830 - 901), al-Rāzī (865 - 925) and, in particular, the inventors of hundreds of mechanical devices, the Banū Mūsā brothers (9th century A.D.), alongside mechanical and experimental scientists like Abū 'Alī al-Ḥasan ibn al-Ḥasan ibn al-Haytham (c. 965 - c. 1040), Abū al-Rayḥān Muḥammad ibn Aḥmad al-Bīrūnī (973 - 1048), Ibn al-Shāṭir (1305 – 1375) and above all Abū al-'Iz Ibn Ismā'īl ibn al-Razāz al-Jazarī (1136 – 1206).

These scholars develop astronomy, physics (optics), mathematics (algebra and geometry), hydraulics, and especially machinery. Donald Routledge Hill (1922 - 1994) points out in his introductory essay to the work of the Arab scientist al-Jazarī [al-Jazarī, 1974; Routledge Hill, 1991], that these machines could “operate for long periods of time - hours, days or even longer - without human intervention”. It was, in fact, a rediscovery of ancient mechanics but perfected with new knowledge, especially in the field of hydraulics, a discipline that Arab scientists had developed with great success. By using water to operate, these machines were able to accomplish different automatisms that could be used to open and close water intake valves, vary the direction of the water flow and, as Hill writes, for primordial “auxiliary safety devices” developed to control and regulate these mechanisms.



Fig. 1a al-Jazarī's elephant clock. Fig. 1b al-Jazarī's candle clocks. Fig. 1c al-Jazarī's hydropowered perpetual flute. Fig. 1d al-Jazarī's reciprocating pump, from *The Book of Knowledge of Ingenious Mechanical Devices* [al-Jazarī, 1974].

In the ninth century A.D., the Banū Mūsā brothers or “sons of Musa” (Abū Ja'far Muḥammad ibn Mūsā ibn Shākir, Aḥmad ibn Mūsā ibn Shākir and al-Ḥasan ibn Mūsā ibn Shākir), invent fountains able to change the direction of the water flow at predefined intervals, mechanical watches, containers that automatically pour beverages using mechanical systems using floaters, valves and syphons. As Jim al-Khalili (1962 -) [al-Khalili, 2013] writes, they also built life-sized robots, such as the so-called “tea girl”, an automaton able to actually serve tea, and the flute player, another automaton that is thought to probably be “the first example of a programmable machine”. In 1206, three centuries before similar mechanisms appeared in the West [Nadarajan, 2007], al-Jazarī completes his treatise “Compendium on the theory and practice of mechanical arts” (لمعل و لمعل ان يب عمجال) (للي حل ا عانص يف عفانلا) in which he illustrates machines and devices for lifting and distributing water, candle and water clocks, musical automatons and a hydraulic pump capable of converting the rotating motion of a waterwheel into the horizontal movement of a piston, thus pumping pressurized water [al-Hassan, 1979].

<sup>1</sup> A handwritten copy of the treaty is stored in the Topkapi Sarayi library in Istanbul, Ahmet III MS, 3472.

## Medieval mechanics and the machine revolution

A profound discrepancy takes place in the Western world between theoretical and applied mechanics - as indeed had always happened in the Greek world where “this beloved art of mechanics” was considered an art which made use of “objects that were suitable only to common and uncouth workers” [Plutarch, *Parallel Lives*: Marcello, 14, 17,19]. The application of simple machines such as the lever, the inclined plane, the wedge and screw by scholars such as Jordanus de Nemore (13th century), or the scientific but philosophical and theological doctrine of William of Ockham (1300 - 1350), the impetus of Jean Buridan (Johannes Buridanus, c. 1300 - 1358) and even the development of geometry by Albert of Saxony (Albertus de Saxonia, 1193 - 1280) and Nicolas d’Oresme (14th century) – a disciple of Jean Buridan - paved the way in the thirteenth and fourteenth centuries for the important contributions made by Leonardo da Vinci (1451 - 1519) and the mechanical developments made by the engineers of the Renaissance [Gille, 1980; Galluzzi, 1996].

Nevertheless, the scientific field is crossed by architects and architectural scholars such as Jacopo Barozzi da Vignola (1507 - 1573) [Corradi & Filemio, 2005], and a slow conquest and acquisition of principles takes place through the use of simple, intuitive tools like simple machines [Duhem, 1902; Duhem, 1903; Clagett, 1972]. The development of mechanical objects by Simon Stevin (1548 - 1620), and later Salomon de Caus (1576 - 1630) would introduce the concepts of equilibrium and work, essential tools to start the great development of seventeenth century mechanics with Marin Mersenne (1588 - 1648), Gilles de Roberval (1602 - 1675), Pierre Varignon (1654 - 1722), Christian Huygens (1629 - 1697), and to undertake the scientific revolution of the seventeenth and eighteenth centuries which would bring new mathematical tools of differential and integral calculus into modern mechanics [Corradi 2002; Corradi 2003].

The Renaissance is thus the moment of maximum brilliance in machine “invention”, developing imaginative contraptions for war, to raise water, to build mills, to build bridges to cross rivers, to sail the seas and travel under the sea, even if - as Paolo Galluzzi writes - “il ‘rinascimento delle macchine’, [è] sovrastato e oscurato da quello delle lettere e delle arti / the ‘renaissance of the machines’, [is] dominated and overshadowed by that of literature and the arts.” [Galluzzi, 2001: 942]. In fact, the first strictly technical manuscripts start to appear towards the mid fourteenth century, and are particularly characterized by their illustrations. In his *Texaurus regis Francie*, Guido da Vigevano (1280 c. - 1349 c.) depicts technological objects and ingenious devices that shine a light on medieval mechanics [Bibliothèque nationale de France: cod. lat. 11015; Ostuni, 1993]. In *Bellifortis*, Konrad Kyeser (1366 - d. after 1405) illustrates (about 1405) war devices to be used by the powerful rulers with whom he collaborated [White, 1969].

Referencing and quoting from classical and modern authors, these authors not only wrote in a high-level literary style, but illustrated mechanical devices (especially for warfare) to solve everyday manufacturing problems that would grow the welfare of the population in times of peace: mills, winches, systems for raising water, and so on. In little more than two centuries, Filippo Brunelleschi (1377 - 1446), Mariano di Iacopo known as “il Taccola” (1381 - 1453), Roberto Valturio (1405 - 1475), Francesco di Giorgio Martini (1439 - 1501), Agostino Ramelli (1531 - 1608), Giovanni Fontana (1540 - 1614), Fausto Veranzio (Faust Vrančić, 1551 - 1617), Vittorio Zonca (1568 -1602) and Giovanni Branca (1571 -1645) - to name only the most notable - initiate a technical and scientific revolution which would result, on one hand, in the development of mechanics and especially mechanics applied to machines and buildings, and on the other in the invention of imaginative machines, archetypes of the modern mechanical revolution – which would spring from the Industrial Revolution in the second half of the eighteenth century [Ashton, 1948] – characterized by the use of generalized machines operated with mechanical energy due to the discovery of new energy sources such as fossil fuels.

A century before the important innovative proposals by Leonardo da Vinci (1452 – 1519), this set of mechanical anticipations started a scientific revolution of machines which would reach its climax with the scholar from Vinci and in his manuscripts, which go beyond mechanics in the strict sense of the term, but also channel architecture, science and building technology in general. Galluzzi still emphasizes how “Leonardo non appare più come un profeta visionario e inascoltato, ma viceversa come l'uomo che più eloquentemente ha saputo dar voce e visibilità grafica alle utopiche aspettative circa le possibilità delle tecniche entusiasticamente condivise da molti artisti-ingegneri del Quattrocento / Leonardo no longer appears as a visionary and unheeded prophet, but vice versa as the man who most eloquently was able to give voice and visibility to utopian expectations about the possibilities of techniques enthusiastically shared by many artist-engineers of the fifteenth century” [Galluzzi, 2001: 942]. Brunelleschi, Taccola, Valturio, Francesco di Giorgio Martini, Ramelli, Fontana, Veranzio, Zonca, Branca are artists-architects-engineers, men of science and literature, in the true sense of the term Renaissance, able to address and discuss artistic and scientific topics at the same time. Valturio's siege tower and warship are an example of ‘artistic engineering’ where the machine is based on the iconographic representation of a dreamlike fantasy that anticipates the war machines of centuries to come.

Leonardo is not only a visionary prophet of the following centuries' technological revolution, but also represents the turning point for the utopian vision of the technical possibilities already announced by the artists-architects-engineers of the fifteenth century; his ‘inventions’ are a transmigration of imaginative and revolutionary ideas in the field of mechanics, engineering and architecture that would foster characters such as Filarete (Antonio Averulino or Averlino; 1400 c. - 1469), Aristotele Fioravanti (1415 - 1486 c.), Francesco di Giorgio Martini, Fra ‘Giocondo (Giovanni Monsignori, or Ognibene, known as Fra Giocondo, 1433 c. - 1515), Leonardo da Vinci, Giuliano da Sangallo (1445 - 1516), or Gregory Georgius Agricola (1494 - 1555) and many others, the early adopters-promoters of a renaissance of the machines, true expression of the technical-scientific revolution of the Enlightenment period and nineteenth century. Their projects range from the architecture of palaces and fortresses to the construction of bridges, waterways and dams; the invention of a new way of building fortifications and war instruments, the design and construction of aqueducts, and even machines and devices to improve work and bring new technologies in the various fields of manufacturing, quarries and mines; or even machines to enrich the imagination of theater performances and courtyard parties, with tools that produce special effects that affect the attention of spectators.

Through the writings of these scholars, the culture of machines spread out in the cultured circles of courts and thinkers whose widespread proliferation is evidenced by the numerous manuscript copies preserved in the most prestigious libraries of the world. Although at times incomplete and lacking of content, they collect numerous *Quesiti et inventioni diverse*, to quote the refined mathematician Niccolò Tartaglia (1499 c. - 1557). In *La Nova Scientia* [Tartaglia, 1558] and *Quesiti et inventioni diverse* [Tartaglia, 1546] Tartaglia develops mathematical sciences (arithmetic, geometry, algebra, statics, topography, artillery, ballistics, fortifications, etc.) that are the basis of the revolution of the Renaissance machines. The illustrations linked to the first Renaissance editions, which include the machines (*machinatio*) of the *De architectura* by Vitruvius (c. 80 B.C. – c. after 15 B.C.), serve as an example for the editions of the Treatises of the artists-architects-engineers throughout the Renaissance; an extraordinarily rich apparatus of evocative images in various forms of expression becomes a necessary corollary for the description of ‘new’ machines. Furthermore, because the textual description of the object or invention is no longer enough to describe individual details, specifics and innovations which scientific and technical knowledge has not yet reached, illustration becomes an indispensable addition that explains the project idea down to its finest understanding.

Artists-architects-engineers are thus able to approach, describe, illustrate and explain with adequate discernment and expressiveness the themes of architecture, engineering, and machinery. Francesco di Giorgio emphasizes that those who write treatises on architecture and machines without possessing the fundamentals of drawing are poor in content, and points to how Leonardo da Vinci proudly claimed himself a “*omo senza lettere / man without letters*”. In fact, understanding the enormous divulging potential of illustrations, artists-architects-engineers made a mature and conscious use of drawings with the intent of integrating and enriching the content of their writings. The philosophy of nature becomes that of science and technology, and illustration becomes the tool for its declination in distinct and different forms of human planning. Drawing - and the geometric aspects of drawing - becomes a sign that announces, exhibits, tells the idea or project and transcends into a real, palpable object; an instrument that unearths the ability of observation, planning and mechanical skill to interpret the mysteries of nature and of human ingenuity.

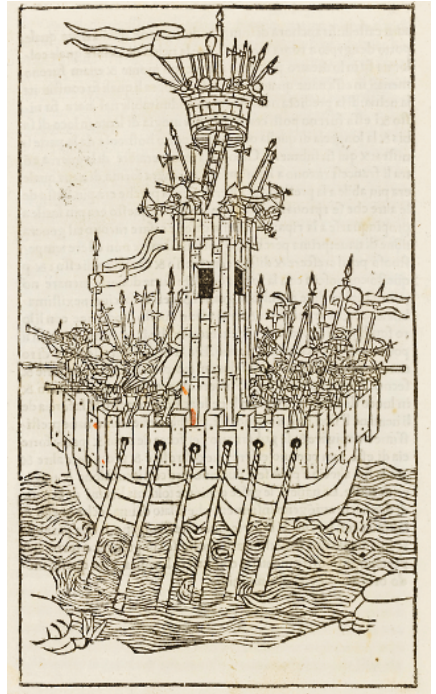
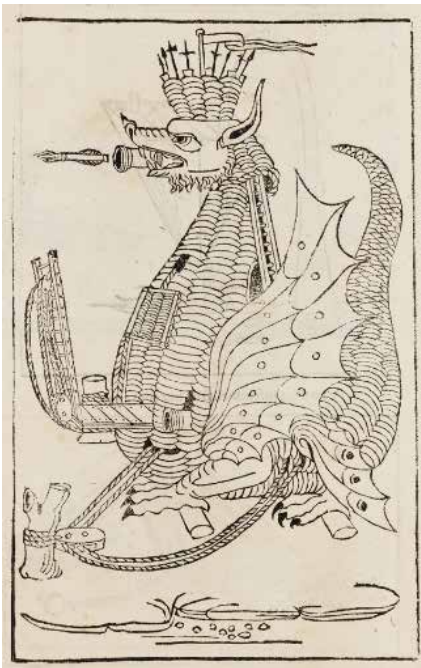


Fig. 2a “*Machina secondo li populi de Arabia de combatter citade grade et piena de Homeni de ponti de scale de varii instrumenti bellici*”. Fig. 2b *War Ship*, from Roberto Valturio, *Opera de facti e praecepti militari*. Verona: Bonino de Boninis, 1483.

### **Fausto Veranzio: visions and pre-visions in *Machinae Novae***

However utopian and idealistic, Dalmatian humanist, historian, and philosopher Fausto Veranzio – a lover of science and of the progress of mechanics and engineering - no doubt falls among the precursors of the machine revolution, which would command the progress of science and technology during the great era of the Industrial Revolution.

Trained at the University of Padua also in mathematics, in 1595 (and 1617) Veranzio publishes

*Machinae Novae* (Venetiis, 1595 and 1617)<sup>2</sup>, a “visionary” treaty written in a strictly mechanical-constructive sense, that brings together scientific and technological advancements with ideas and projects, some of which would come to life a few centuries after his death. Despite the extraordinary quality of this book, the author had no help by editors and financed its publication at his own expenses, having to interrupt its distribution due to lack of funds, making it very rare to find. The treaty on the *Machinae Novae* (new machines) most contributed to the popularity of Veranzio as an ‘encyclopaedic’ scientist. It presents numerous technological innovations (49 engravings which describe 56 different machines, devices and technological projects), which include vehicles with leaf spring suspension, different types of windmills (one windmill has a horizontal rotor with blades as the ones you see today in the turbines) and agricultural machinery for hay harvesting, threshing, and cleaning grain, a badminton archetype, flat elastic suspension springs, wheels and printing machines, sundials, clocks, and cable cars. *Homo Volans* is a precursor of the parachute, and although Leonardo da Vinci drew and described a similar device in the *Codex Atlanticus* (Atlantic Codex), Veranzio was the first to publish his invention, which was slightly different than Leonardo’s [Škoberne, 1957; p. 26] and was proven functional by the 1617 experiment which comprised jumping from the San Marco bell tower in Venice [Rathbone, 1943: 172]. Soon after, he developed various types of suspended bridges, drainage systems, machines for balancing wave tides – also addressing the problem of Venice’s power by means of wells and projects for river regulation during his stay in Rome – portable vessels able to sail against tides, and so on. His treaty is full of illustrations, each accompanied by a description written, incredibly, in 5 different languages (Italian, Latin, German, Spanish, French) [Da Pozzo 2006]. These are not “inventions” and perhaps not even innovative ideas, but probably represent a synthesis of his knowledge in applied mechanical arts and in constructions. A peculiar character of Veranzio’s treaty is that it demonstrates how drawings are not just an imaginative illustration of some machine, but rather the blueprint for refined technology that would be developed in the centuries to come. In fact, the suspended bridges Veranzio drew and imagined are forerunners, for instance, of the wide range of bridge engineering plans made possible by the introduction of cast iron, iron and steel in architecture, which would occur almost two centuries after his publication. These could be defined as visions and pre-visions by a Renaissance man who anticipates, with his ideas and his projects, not only the design of machines but also the design and project of iron-made architecture, such as the suspended bridges which would begin to be developed with the Industrial Revolution of the eighteenth century making use of new materials in the construction industry. Veranzio’s new machines surely refer to the *Machinae* designed by architects and military engineers like Andrea di Pietro Palladio (1508 – 1580), the previously mentioned Agostino Ramelli, Domenico Fontana (1543 – 1607), Jacopo Strada (1507 – 1588), Giambattista della Porta (1535 – 1615), all architects-builders of architecture and fortifications, philosophers and humanists who also tackled mathematical sciences and technical disciplines. However, the main characteristic of Veranzio’s work is the simplicity and clarity with which he writes about his ideas and presents technical solutions for them. In this short note, we will not deal with the entirety of Veranzio’s treaty, but face a unique aspect of his *Machinae Novae* regarding bridges, because his drawings are the archetypes of the revolution of bridge construction that would begin in the eighteenth century, in which masonry bridges transitioned into iron bridges, as arch bridges turned into truss bridges, suspended and cable-stayed bridges [Corradi, 2017].

<sup>2</sup>The *Machinae novae* treaty poses some bibliographic problems, since it is not dated and the surviving copies are not identical. The work consists of a title page, forty-nine boards and five explanations of the boards in the different languages: Latin, Italian, Spanish, French and German. Each copy has a different layout and some copies do not contain the explanations of the machines in five languages; it can be assumed that the work was published only once since it seems that all the tables are descended from a single matrix. The publication dates of 1595, 1605 and 1617 that appear in the literature and in some library catalogues may be incorrect because prints of the treaty were probably completed in the first half of 1616 (or maybe the last two months of 1615); In fact, in the month of July 1616 several of Veranzio’s friends thank him for sending his book.



## Between utopia and reality: the bridges of Fausto Veranzio

The construction of bridges, associated with the subject of statics, fascinated the Dalmatian scholar, so much so as to anticipate by around two centuries projects for modern truss bridges, suspended and cable-stayed. This section of Veranzio's manuscript indirectly shows his deep understanding and knowledge of Simon Stevin's work on statics [Stevin, 1586]. Furthermore, based on the technical developments of masonry arch bridges, his illustrations show a gradual passage to the construction of truss bridges made of wood or bronze, lenticular truss bridge, suspended and cable-stayed bridges made of iron and the innovative idea of putting into motion sliding ropes around pulleys. These are anticipations of modern techniques and construction technologies that would be employed after the first Industrial Revolution.

The history of bridge construction dates back to the origins of architecture, but that of the construction of arch bridges, truss bridges, of those suspended and those in iron is instead a very recent one [Séjourné, 1913-1916, Mesqui, 1986; Marrey, 1995; Prade, 1986 e 1988]. Indeed, the first truss bridges were made of wood – for instance the bridge built by Giulio Cesare (101 or 100 B.C. - 44 B.C.) to cross the river Rhine [Gaius Julius Cesare. *De bello Gallico*. Liber IV, 17-18.] developed during the Medieval period [Coppola, 1996], and were of great success during the Renaissance thanks to the intuitions of Andrea Palladio (1508 - 1580) and, in the Alpine valleys, thanks to the ingenuity of Swiss carpenter brothers Johannes (1707 – 1771) and Hans-Ulrich Grubenmann (1709 – 1783) who built wood bridges of impressive length<sup>3</sup>. A collection of images of the bridges by the Grubenmann brothers can be found in the work of John Soane (1753 – 1837) [Maggi and Navone, 2002]. In antiquity, suspended bridges were made with rope structures of natural fibers, like bamboo, willow or woven leathers, and were built mainly in the Far East and Latin America. The Chakzam Bridge was a suspension bridge on the Yarlung Tsangpo river at Jagsamka, near Lhasa in Tibet. It was built in 1430 by Thangtong Gyalpo (1385 - 1464) and it was also known as Chakzampa, the “Iron Chain Maker”, with a central span length estimated at around 137 meters. It was probably the first suspension bridge built with iron chains in the world.

This, however, is not the place for a narration on the history of bridges, for further details please refer to [Troyano, 2007]. In summary, the development of bridges, especially suspended bridges, sees the first applications since the nineteenth century in the United States thanks to the early experiences of James Finley (1756 - 1828) with the construction of a suspension bridge with chains on Jacobs Creek in Pennsylvania. Later, the construction of suspension bridges moves to England where the Union Bridge (1819-20) was built by Samuel Brown (1776 - 1852) on the Tweed River, and then the bridge over the Menai River (1819-26) designed by Thomas Telford (1757 - 1834); and, again, in France by brothers Camille (1793 - 1852), Jules (1796 - 1868), Paul (1797 - 1875), Charles (1798 - 1856) and Marc (1786 - 1875) Seguin, with the introduction of suspension cables instead of iron chains [Seguin, 1824], such as with the Tournon bridge (1825). In Italy the Ferdinando bridge over the river Garigliano (1832) is the first suspension bridge with forged chains, and was designed by Luigi Giura (1795 - 1864).

The importance of the construction of suspension bridges in the first half of the nineteenth century is also evidenced by Claude Louis Marie Henri Navier (1785 – 1836) whose research was commissioned by the French government to learn about the state of bridge construction in England [Navier, 1830]. An important innovator was John Augustus Roebling (1806 - 1869), who developed suspension cables and made significant improvements to stiffen the deck of bridges subjected to strong

<sup>3</sup> An interesting synthesis is in the Planche XV (Charpente, Ponts) of *Encyclopédie ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers* by Denis Diderot (1713 –1784) e Jean-Baptiste Le Rond d'Alembert (1717 –1783). In particular, the Fig. 117 from *Encyclopédie* shows the insight of Veranzio expressed in Table 30: *Pons Duarum Trabium*, from *Machinae Novae*. See also fig. 14 (Tome 7, p. 252) the work of Eugène Viollet-le-Duc (1814 – 1879): *Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle*. Paris: A. Morel, 1854-68.

horizontal forces due to wind action. Although his suspended railway bridge over the Niagara River in 1851 was a great achievement, he is remembered particularly for the construction of the Brooklyn Bridge (1883) on the East River, connecting Manhattan to Brooklyn.



Fig. 3 “View of the Chain Bridge invented by James Finley” also known as Chain Bridge at Falls of Schuylkill, Philadelphia, Pennsylvania (1808) [The Port Folio vol. 3, no. 6 (Philadelphia: Bradford & Inskip, June 1810), p. 441-453 (original from Harvard University)]. The Jacob’s Creek Bridge was the first suspension bridge with iron chains (span length 21 meters, 3.81 meters wide deck).



Fig. 4 The Union Bridge (1819-20) crossing the River Tweed between Horncliffe, Northumberland, England and Fishwick, Berwickshire, Scotland, built by Captain Samuel Brown. This wrought iron suspension bridge with iron chains has a single span of 137 m. [Drewry, 1832; p. 37-41].



Fig. 5 Menai Suspension Bridge from Life of Thomas Telford, civil engineer. Ed. by John Rickman. London: Payne and Foss, 1838. The Menai Bridge was the first important modern suspension bridge with a span of 176 meters. The deck was suspended by sixteen iron chains, each composed of 935 iron bars, for a total of 2,000 tons of wrought iron, from two masonry towers at either end.

It is within the origins of the suspension bridge, but more generally the idea of different bridges from traditional masonry arch bridges, that the visionary projects of Veranzio can be assigned. The Dalmatian inventor describes and illustrates pre-visions of bridges in the near future, the construction of these “new machines” to cross the rivers. In fact, even traditional bridges in wood and masonry are affected by the visionary aspect of Veranzio’s personality and inventions. A forerunner of modern times is the wooden girder bridge (*Pons Duarum Trabium*); the bridge becomes a compound and composite structural system where the girder is supported by a wooden truss (Fig. 7a), or an arched bridge (Fig. 9b) with a bronze, box girder (*Pons Aereum*), or even a composite truss bridge girder with a rectilinear lower current and an arched upper current (*Pons ligneus*) with stiffening diagonals serving as tie rods and struts (Fig. 8a).

In the same illustration (Fig. 8a) Veranzio also imagines a lenticular bridge, a precursor of the Royal Albert Bridge which crosses the River Tamar in Saltash, or even more the Ouaquaga Lenticular Truss Bridge built (1888) at Windsor and Colesville (Broome County, New York) over the Susquehanna River [Guise, 2007] and the bridge with two overlapping arches, archetype of laminated wood structures. The masonry bridge itself (*Pons Lapideus*) is not devoid of invention in the work of Veranzio, being an arch bridge with a steel chain system to reinforce its circumference, necessary to eliminate the thrust produced by the arch itself, supported by vertical tie rod stiffening (Fig. 9a).



Fig. 6a This bridge, consisting of two spans of 85 m. each, linking Tournon-sur-Rhône to Tain-l'Hermitage, put into service on 25/8/1825, was actually the first large suspension bridge in continental Europe. The bridge, suspended by eight iron cables, has a total length of 170 m. [Cotte, 1986]. Fig. 6b Elevation and plan of the bridge on the Garigliano (1832), Luigi Giura design (1826); see: *Di un nuovo ponte sospeso a catene di ferro sul Garigliano in Annali Civili del Regno delle Due Sicilie T. 1. Napoli: Dalla Tipografia del Real Ministero degli Affari Interni, 1833; p. 41-51 (span length: 80.40 m.s.; wide deck: 5.50 m.)*.

The *Pons Canabeus* (Fig. 10a) thus becomes the most innovative visionary project because it anticipates the construction of suspension bridges [Grattan Tyrrell, 1911: 202-256] by almost two hundred years, while the *Pons Ferreus* (Fig. 11a) anticipates cable-stayed bridges in wood, iron and concrete, and conceives of the modern cable car (*Pons Unius Funis*) (Fig. 7b). The originality of Veranzio’s vision lies in his project design. The suspension bridge is a bridge with two suspension cables that support the wooden deck through a series of tie rods, which, in turn, support the wooden girders, joined to each other by ropes. The presence of the pulleys, which support the tie-rods, such as those, which allow pulling on suspension cables, reveals the truly innovative nature of the idea of Veranzio; the bridge can be registered and put into force with just the use of pulleys that allow the cables to be pulled. A certainly “modern” technology which pre-announces the control systems and pulling action of suspension cables. The cable-stayed bridge is completely innovative. The masonry anchor pylons which support the deck anticipate the architecture of the suspension cable support towers of suspension bridges such as those that would be used in the nineteenth century by Telford for the Menai Bridge and the Conwy Suspension Bridge (1822-26), and again by William

Henry Barlow (1812 - 1902) and John Hawkshaw (1811 - 1891), based on a previous project by Isambard Kingdom Brunel (1806 - 1859), for the Clifton Suspension Bridge (1864) on the Avon, or the Brooklyn Bridge (1883) by John Augustus Roebling (1806 - 1869). The *Pons Ferreus* imagined by Veranzio anticipates, in the sense of planning, the Victoria Bridge in Bath built in 1836 across the River Avon and is a significant anticipation of the Albert Bridge over the River Thames in West London, designed and built by Rowland Mason Ordish (1824 - 1886) in 1873, and of the Bluff Dale Suspension Bridge near Bluff Dale, Texas, built in 1891 across the Paluxy River, spanning 69 m.

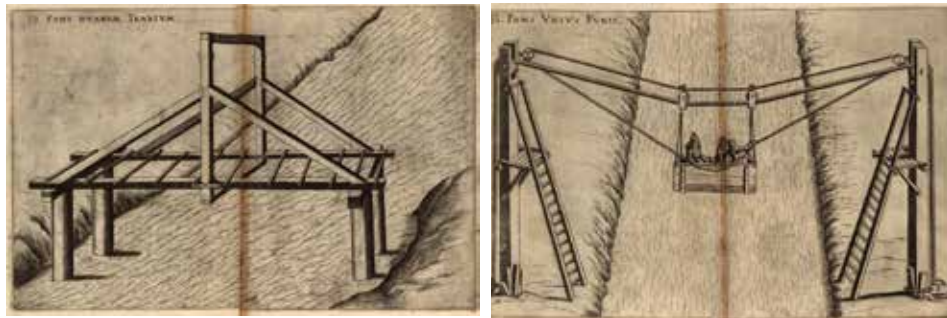


Fig. 7a *Pons Duarum Trabium*. Fig. 7b *Pons Unius Funis*. Adam Wybe o Wiebe (1584 -1653) was the first, in 1644, to build a cable lift system, on a hill in Biskupia Gorka near Gdansk.

## Conclusions

The work of Fausto Veranzio is therefore rightfully placed among the Renaissance advancements in science and techniques - in particular those disciplines that have marked the history of Architecture and construction in an artful and scientific way of building. These are projects that describe the ideas of the Dalmatian scholar at an illustrative and not phenomenological level, probably due to the lack of scientific and technical knowledge necessary for their construction. They are, however, visions and pre-visions of a new way of imagining the construction of machines in a broad sense, looking beyond the knowledge of the time and anticipating discoveries from the first Industrial Revolution in the field of materials and construction technologies.

Veranzio's bridges, in particular, anticipate the transformation in bridge construction, which would take place especially with the discovery of new materials: cast iron, iron, steel and reinforced concrete. This discovery would significantly revolutionize the architecture of the nineteenth and twentieth century indicating new paths of formal and constructive research. In particular, Veranzio's foresight anticipates the design of wooden, stone and iron bridges, and pre-announces the studies conducted by Thomas Farnolls Pritchard (c. 1723-1777), designer of the first iron bridge in history. In little more than a century, the history of bridges would, in fact, see a change from traditional building techniques, ensuring that arched bridges would slowly give way to truss bridges, suspension bridges and cable-stayed bridges with a number of interesting variations of a new formal and constructive model, precisely due to the discoveries in science and technology and the introduction of new materials into the history of building [Masiero and Zannoner, 2013].

Veranzio was therefore a man of great scientific horizons, also engaged in lexicography, philosophy, theology and technology. His work on *Machinae novae* is, full-fledged, an aperture to the technical innovations, to the projects and constructions of the following centuries and shows exceptional individual creativity in engineering and in particular in mechanics. He "created the basis enabling engineers from the turn of the 20<sup>th</sup> and the 21<sup>th</sup> century to cross natural barriers with a ... long cable-stayed span and ... suspended span" [Mistewicz, 2012; 115-116].

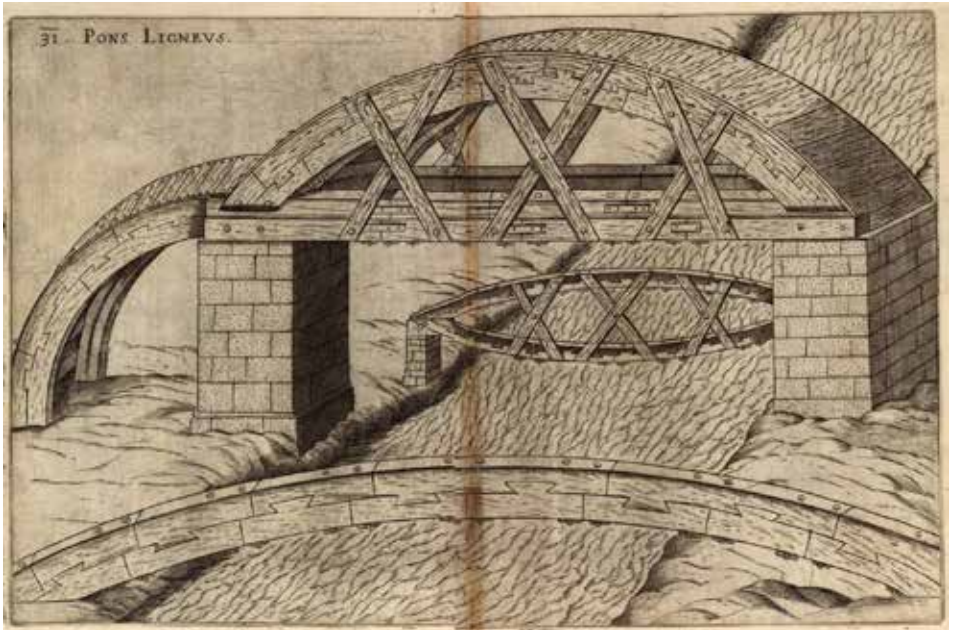


Fig. 8a Pons Ligneus, wooden girder bridge. It is the archetype of the trusses that will be developed in the nineteenth century as a result of studies on the static graphic by Karl Culmann (1821 – 1881) and then Luigi Cremona (1830 – 1903).



Fig. 8b 1858: construction of the Royal Albert bridge. Fig. 8c 1888: Ouaquaga Lenticular Truss Bridge built. It is composed of two identical lenticular trusses with an overall length of 105 m. [Historic American Engineering Record; Library of Congress HAER NY,4-OUAQ,1-3]. Pons Ligneus is similar also to Bardwell's Ferry Bridge, built in 1882, a lenticular truss bridge spanning the Deerfield River in Franklin County, Massachusetts.

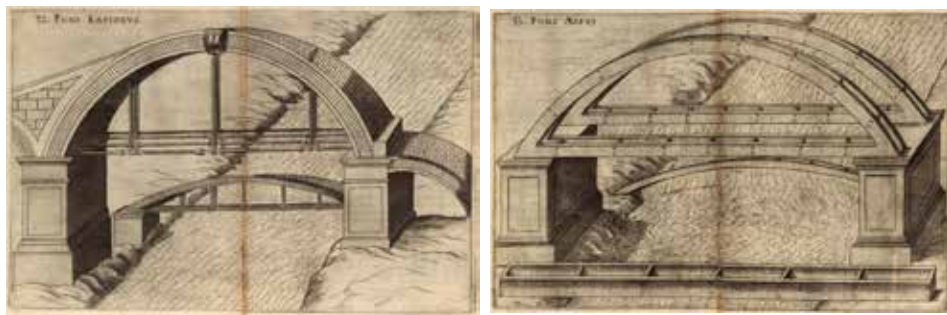


Fig. 9a Pons Lapideus. Stone bridge with a chain system to counter the horizontal forces. The vertical rods are a mechanical device that serves to prevent the deflection of the horizontal chains. Fig. 9b Pons Aereus. It is a cast iron bridge with box-like structure.

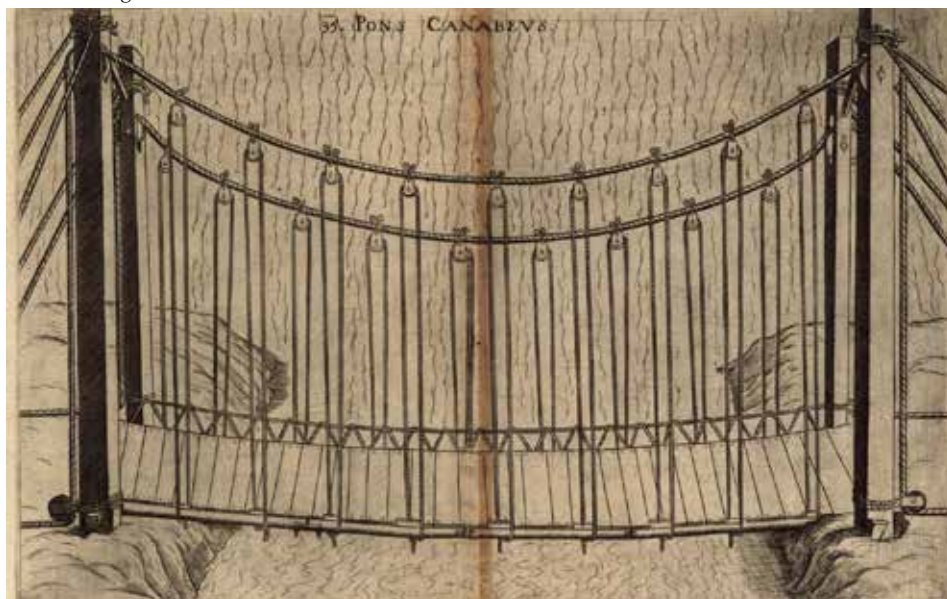


Fig. 10a Pons Canabeus. The suspension bridge is a bridge with two suspension cables. These cables support the deck by means of a series of tie rods; the tie rods, in turn, support the girders, spliced together by ropes, and the wooden deck. Fig. 10b 1822-26: Conway Bridge (Carnarvonshire, North Wales), Printed by Wm. Potter & Co. [National Library of Wales], 99.5-metre-long suspension bridge span; Fig. 10c 1864: Clifton Suspension Bridge [National Museum of Wales], 214.5-metre-long suspension bridge span.

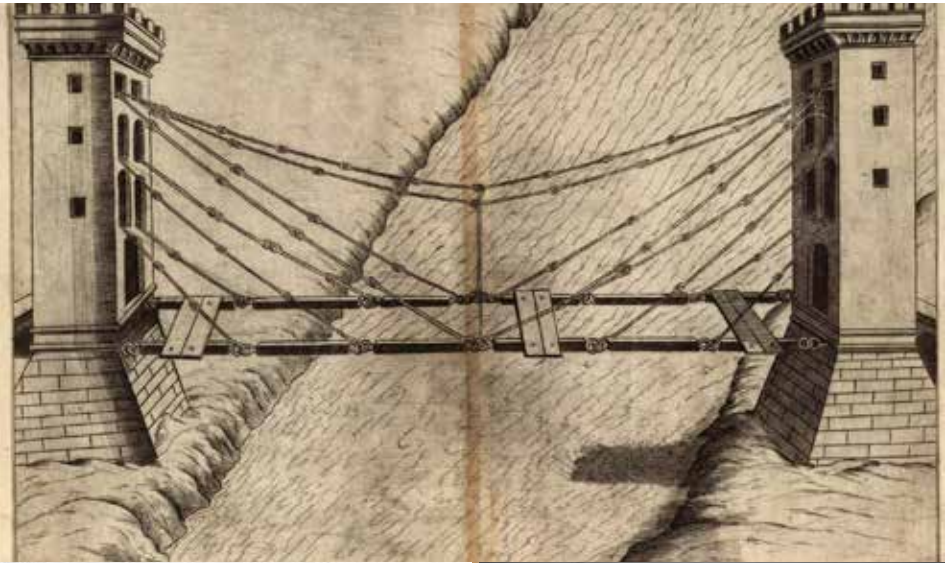


Fig. 11a Pons Ferreus, cable-stayed bridge with a tie rods anchored to masonry towers system. Fig. 11b 1873: Albert Bridge in the Illustrated London News. Fig. 11c 1891: Bluff Dale Suspension Bridge.

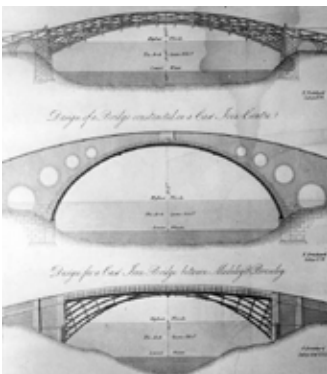


Fig. 12 Three designs for cast iron bridges by F. Pritchard, 1773 - 1775 [Ironbridge Gorge Museums Trust]

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# **Redrawing suburban boundaries Man-environment approach for railway station district in Perugia through perception strategies and ecological reconnection**

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## **Abstract**

In front of the national call to suburban boundaries requalification, the research presents the results of collaboration between Perugia Municipality and the group of expert of representations and architecture who has developed the project That will be Realized next year (more of 16 millions of Euros). Beginning with the centrality of perception, the research approach based on man-environmental solution is the basis to stop the deterioration of the district around the railway station (Fontivegge) in Perugia. The project acts in multiple ways: parks, urban mobility and reconnection. The intervention in the ecological parks gives more value to the main basins of the area with a process of improvement of user services and space, with environmental quality and ecological value. The draft increases the existing vegetation, especially with the use of edible plants, and involves the construction of urban gardens for the local community to generate the re-appropriation of spaces by the community itself. The idea is to create a public space to promote the urban vitality of the entire district, becoming an attractor for the community and for it to become a district of safety supervision. The aim of the project is to retrieve the urban space, in the new relationship between man and environmental, redrawing urban landscape for a new image of the city. The proposal is resulted financeable, and it is foreseen in starting in the next coming months.

## **Introduction**

Since the government of local territory by local authorities is very complicated to handle, Government has published an announcement addressed to all the metropolitan cities and provincial capitals; the announcement was entitled “Notice to present new proposals for the organisation of the Special Program for an intervention to requalify the urban area and the safety of the suburbs”<sup>1</sup>. The goal of the course is to requalify all urban areas that are in a situation of economic and social exclusion, with building deterioration and lack of services. The interventions, to be implemented without additional consumption of soil, could cover one or more of the following types of action:

- improvement of the urban quality projects;
- maintenance projects, re-use and re-adaptation of public areas and existing buildings, for purposes of public interest;
- projects directed to the enhancement of regional security and urban resilience;
- projects for the strengthening of performances and of the scale of urban services, including the development of practices of the third sector and civil service, all with the aim of social inclusion and the creation of new metropolitan and urban welfare models;

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<sup>1</sup> Official Gazette 127 of 06.01.2016

- projects for sustainable mobility and the adaptation of infrastructure for social and cultural services, for education and teaching, as well as cultural and educational activities promoted by publics and privates.

This path has become for many common an opportunity to rethink the next city. In this case, the study of the Municipality of Perugia, the theme of this intervention, the challenge has been addressed to local administration in collaboration between the Department of Civil and Environmental Engineering. The research, and particularly the studies of the representative area, have become the essential tool for innovating urban development.

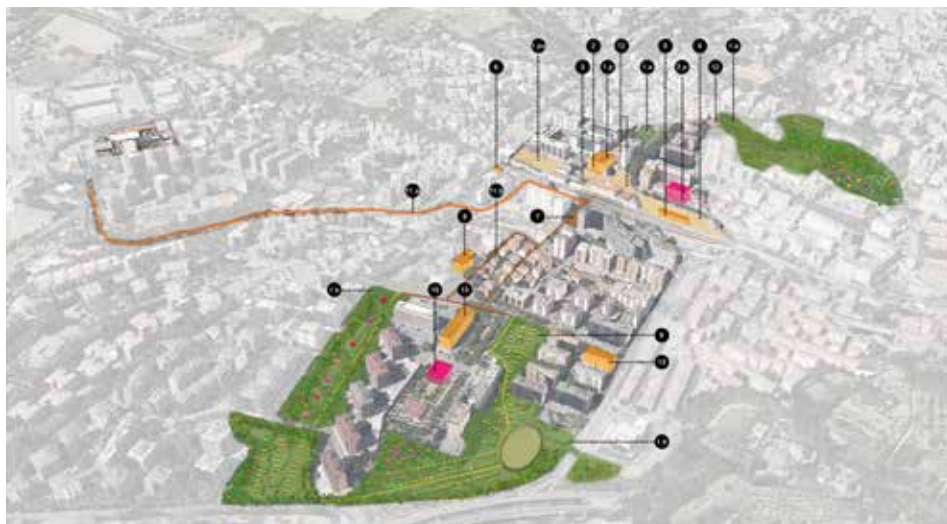


Fig. 1 Masterplan

## Methodology

The announcement finds its cultural reasons in the concept proposed by senator Renzo Piano about the urban mending<sup>2</sup>, main theme of the design hypothesis, which actually, in the study case, are transfers to the suburban relationship - central of the relationship between town and country.

Briefly, the proposal could be read as a simple redesign of a new large square of the station, a proposal developed mainly by the City, and the reconnection of these spaces, in front of the break represented by the same railway infrastructure.

The narration of the project, based on the themes of public space, can begin with the reconnection of the railway in the valley with the rest of the Fontivegge district: the two cut areas from the train tracks (as it always happens) and its appurtenances, actually have similar logics, with a strong residential vocation. It is here that is located an important polarity of the intervention, the current subordinate, insecure and poorly resolved, where, even if it is guaranteeing the access, it lets other identified itself by a simple and degraded shelter. The proposed design relies on the deep regeneration of this area, to be converted into a square of access to the station, centre of attraction and convergence space of the slow mobility, thought the cycle path to the Thirties areas.

The idea finds its foundation on the creation of a public space able to promote urban vitality, an

<sup>2</sup>R. Piano, *Mending and urban regeneration for the new Renaissance*, rip. [www.fondazioneitalcementi.it](http://www.fondazioneitalcementi.it) in [2016]; <http://renzopianog124.com/> [2016].

attractor for young people and a local presence so important and fundamental for the needs of security. The square is intended as a place where people of social groups, various cultural and demographic meet and enter into different relationship, a space where public life is centred on communication<sup>3</sup> and vision<sup>4</sup>. The parameters that define the spaces are the easy interpretation of the surrounding environment (legibility)<sup>5</sup>, the opportunity to obtain additional information through the exploration (mystery) and the ease of finding a shelter (refuge)<sup>6</sup>. The project sees then a complete redesign of the site, where it wants to return to a “original landscape”<sup>7</sup>, functional to accessibility, with a square that gradually descends towards the entrance of the underpass, placing at the centre pedestrian and cycle flows.

A red septum separates and protects the place from vehicular traffic, with respect to which it is still identified for the centrality of the flows present therein<sup>8</sup>. The same perceptual pole<sup>9</sup>, if the side of the road is designed as the shelter of the bus stop, for pedestrians and citizens who wants to stay by and spend some time in the terraced steps, it becomes the scenery flat of projections of sensors filming and cameras set to make the place “mirror of the society”<sup>10</sup> as well as great monitor where youth associations of the city and the neighbourhood can communicate.

The idea of the square, in the ordinary usage completely changed compared to the one in the past, it is then the identification space<sup>11</sup> and meeting which breaks the outskirts of the “identical city”<sup>12</sup>. For many psychologists, the attractiveness of a public space is commensurate with its ability to see others as well as to be seen and to express themselves freely. If in the rural and traditional Italian culture, the town square can encompass the image of the city itself, in the modern world as well, in the visual preeminence<sup>13</sup> the contemporary square wants to focus on those aspects related to the memory of the visitors<sup>14</sup> and consciousness of citizens, who are the keepers of their community’s values. The square becomes a fluid entity, so that these pieces of the city are a collection that contains within it other collections, some of which are intersected between themselves: a city “per parts”, and not made in “pieces”<sup>15</sup>, in which the underpass to the station is the hub of hubs of pedestrian paths and the place that opens to a path connected to discovery. A uniform ramp redraws the underground walkway, and the space created in the past for the removal of architectural barriers, completely unused, turns into a greenhouse to enrich the naturalness in built.

The needs to respond to the tensions of a “place searching for an author”, the pursuit of beauty and art as a means and not as an end<sup>16</sup>, they all then condense in the inlet of participatory co-design perspective which sees in social cohesion the centrality of urban mending path: with the support of local schools and city, the space wants to be characterized with tiles designed by children on the theme of “the city’s image”.

<sup>3</sup> M. McLuhan, *Understanding Media: The Extensions of Man*, Gingko Press, Berkeley 1964.

<sup>4</sup> G. Kepes, *Language of Vision*, Paul Theobald, Chicago, 1944.

<sup>5</sup> K. Lynch, *The image of the city*, Joint Center for Urban Studies Series Cambridge, Harvard-MIT in 1960.

<sup>6</sup> M. Clemente, *Liveliness and livability of urban space. Perception of well-being and public space design*, in *Proceedings of the International Conference on Changing Cities II Spatial Design, Landscape & Socio-Economic Dimensions*, Gospodini A. (eds.), Porto Heli, Greece, 22-26 June 2015.

<sup>7</sup> F. Purini, *Spazio e Parole*. In *Nel Progetto. Spazi e Parole di Franco Purini*, F. Moschini, G. Neri (eds), Kappa, Rome 1992.

<sup>8</sup> R. Arnheim, *The Dynamics of Architectural Form*, University of California Press, Los Angeles 1977.

<sup>9</sup> D. Appleyard, K. Lynch, JR Myer, *The view from the road*, MIT Press, Cambridge in 1964.

<sup>10</sup> W. Benjamin, *The Work of Art in the Age of Mechanical Reproduction*, in “Work of Art”, Brodersen XV (1936).

<sup>11</sup> K. Lynch, *The Good city form*, Joint Center for Urban Studies Series Cambridge, Harvard-MIT in 1984.

<sup>12</sup> M., Petranzan, G. Neri, Franco Purini. *La città Omologa*. Il Poligrafo., Padova in 2005.

<sup>13</sup> F. Purini *Twelve fragments to draw the design ... Roman Letter to Margaret De Simone*, in “Palermo: The words and signs” Necklace Stone, 2 (1982).

<sup>14</sup> M. Feyles, *For the phenomenology of memory studies*, Franco Angeli, Roma, 2012

<sup>15</sup> C. Alexander, *A City is Not a Tree*, in “Architectural Form”, 172, 1965

<sup>16</sup> M. Duchamp, M. Sanouillet, E. Peterson, *The writings of Marcel Duchamp*, Da Capo Press, New York, 1973

It follows that such a place is filled with colours, that the protagonists, their relatives and friends, find in this one identity space, themes which bring to discouragement, especially for chromatic reasons and perceptive, the degradation of spaces caused by writers.

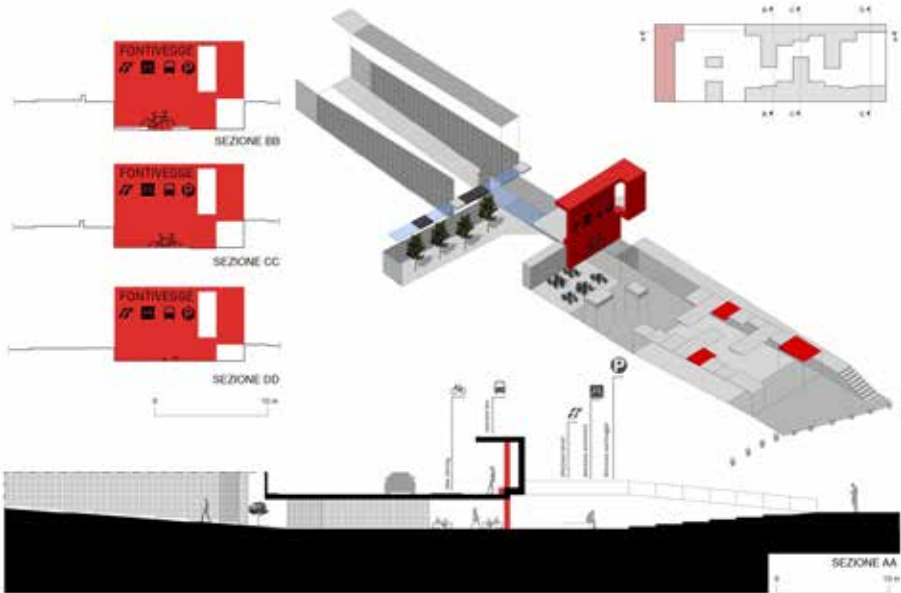


Fig. 2 New square

This same space then runs from one side to the station, the new square and to the interchange with Minimetror's entrance, on the other side it gradually diffracts in the neighborhood characterized by small houses of the beginning of last century.

The square now becomes the meeting place of unity and fragment, between accessibility and use, nature and artifice, with modernity who has made an essential feature for the habitability of the site. The city "per parts", all connected, intersected with each other, one depending on the other, leads then to connect the appurtenances, in a time sequence to constitute the *unicum* that is the city itself. And the path, in the relation between identification and orientation<sup>17</sup>, stands as the main structure of the urban mending. On such system, the cycle path finds a formal and spatial dominance to connect the adjacent districts of the city. The path, the first in the urban city environment section, redesigns an access to the interchange centre transport terms in order to break the absolute dominance of cars in favour of a new measure human-centred.

Valorisation of soft mobility is going to be implemented through the tarmac repainting of all Thirties areas that are all divided and yet connected in a network model functional for the discover.

A specific strong colour pervades and dominates the urban space redevelopment, materializing in the coloured and printed tarmac according to researches that can be provided, considering the aim of participative and open paths, with the support of construction/architectural engineering students. The paths will then enrich with naturalness chromatism with fundamental "edible landscape" to strengthen connective value of the ecological redesign. It is also wanted, for all

<sup>17</sup>M. Filippucci, *From the urban form the image of the city. Perception and representation at the origin of the built space*, PhD thesis, Sapienza University of Rome, Doctorate in Representation and Survey Sciences, XXIV cycle (2012), rep. in hdl.handle.net/10805/1506

these reasons, to satisfy the spontaneous naturalization processes, there where, perhaps due to negligence, the vegetation has grown, redefining its relationship with the man-made infrastructures and connoting cement and infrastructures. The pedestrian network now becomes functional to the green infrastructure system and the polarity of the parks, which at the same time are organically functional to the system for pedestrian and bicycle paths that unfold inside them.

The research on perception and vision are linked on the objective of remaking the space liveable, known and personal. The concept of place has a purely operational value, linked on the quality, on relation between all parts. The enhancement of shared values between environmental consciousness<sup>18</sup> and its almost mythical<sup>19</sup> meaning<sup>20</sup>, “exemplary model of all rites and all significant human actions”<sup>21</sup>, it stands as a strategy to tell the city, through its inhabitants’ lives.

The project’s hypothesis is that through the upgrade of green infrastructure<sup>22</sup> if possible to reconquer the man-made space in order to replace at the centre of the project the citizen as main protagonist and keeper of that good as the city and its environmental are.



Fig. 3 Thirties Areas

The redesign of the man-made space aims to contribute to biodiversity conservation by increasing connectivity of urban green spaces and its reconnection with the ecological network. At the centre stands the dynamics of perception<sup>23</sup>, which gives value to the relation between man and territory that enhance the entire landscape. The natural area in the urban landscape shows itself as a fragmented

<sup>18</sup>E. Jelin, *Towards a Global Environmental Citizenship?*, “Citizenship Studies” 4, 2000

<sup>19</sup>C. Jencks, *Meaning in architecture*, The Cresset Press, London in 1969

<sup>20</sup>R. Barthes, *Semiology and urban planning*, in “Op. Cit.” 9, 1967

<sup>21</sup>M. Eliade, *Traite d’histoire des religions*, Payot, Paris, 1948

<sup>22</sup>[ec.europa.eu/environment/pubs/pdf/factsheets/green\\_infra/it.pdf](http://ec.europa.eu/environment/pubs/pdf/factsheets/green_infra/it.pdf)

<sup>23</sup>L. Ancona, *Perception dynamics, scientific and technical*, Edizioni Mondadori, Milan, 1972

residue<sup>24</sup>, whose bourgeois origins has hibernated its transformations, stuck in the design in which she was born, unable to evolve and respond to contemporary needs. Unresolved places<sup>25</sup> and removed<sup>26</sup>, “Third Landscape”<sup>27</sup> who, perhaps fortunately, did not find strong levers able to overtake private economic expectations, these spaces, considered today unsafe, are essential elements for an urban mending that finds in the ecological centrality of a model, also cultural, to live with new responsibility and involvement the urban space<sup>28</sup>. The strategy that can be appealed to a “pervasion of the Green” aims to promote a reappropriating of places: identity and identity-making<sup>29</sup> become compliant characteristics from which it is possible to achieve innovative management solutions based on the participation, joint planning, the involvement and social cohesion, in order to also ensure long-term sustainability of interventions<sup>30</sup>.

A strong central strategy on the creation of more than 400 vegetable gardens has devised thinking these spaces in a new way: no longer places of anthropization where wild species are hunted, or of unauthorized constructions and living, but vegetable gardens definable “BioDiverse”, where it attests, in a central semantic inversion, the union between the functionality of the space for man and the possible advantage for wild species.

In addition to the gardens, the entire infrastructure is characterized by fruit trees, an agriculture invasion in the country in order to restore a culture of care and integration of urban spaces between town and country. The goal is to draw an “eatable landscape”, according to the Anglo-Saxon idea of *edible landscape*<sup>31</sup>, a functional structural biodiversity to create corridors<sup>32</sup> for wild species compatible with urban environment, which is useful for the absorption of CO<sub>2</sub><sup>33</sup>, and, where it is compatible, primary good for mankind<sup>34</sup>. These infrastructures, in their flowering and fruiting cycles, can assume a central attraction for a value of perception, for their colours, their flavours, their characteristic smells. These elements will then enhance in residual spaces with specifically connotations in order to become inclusive and attractive for disadvantaged groups and for citizens with disabilities. Accessibility is alloying with attractively, with educational paths and forests, connected to the adjoining schools, where the game, directed broadly to everyone, enhances places as multifunctional.

The sustainability of the action is guaranteed by an action of recovery from that fundamental primary resource that is water, which will be used to supply more than six hectares of urban green as well retrained. The Fontivegge area in fact, is characterized by the presence of a large groundwater level problem<sup>35</sup>, that was solved in these years with a system of pumps and abstraction that until now

<sup>24</sup> C. Battista, *Environmental fragmentation, connectivity, ecological networks*, Province of Rome, Rome, 2004

<sup>25</sup> Vulgari De Architectura. *Survey unresolved urban places*, R. de Rubertis, Soletti A. (ed), Workshop, Roma, 2000

26R. de Rubertis (eds), *The city removed. Instruments and criteria for the investigation and rehabilitation of degraded urban margins*, Workshop, Roma, 2002

<sup>27</sup> G. Clément, *Manifeste du Tiers paysage*, Éditions Sujet, Objet, Paris, 2004

<sup>28</sup> J. Brown, N. Mitchell, M. Beresford, *Protected landscapes: a conservation approach links That nature, culture and community*, In J. Brown, N. Mitchell, M. Beresford. (Eds) *The protected landscape approach: linking nature, culture and community* : International Union for Conservation of Nature, Gland 2005.

<sup>29</sup> G. De Fiore, *Travel Notes, in the image of European cities*, V. Volta (eds), International Conference Proceedings, Brescia 2 to 3 April 2004 Tamellini, Legnago, 2005

<sup>30</sup> A. Farina, *The cultural landscape as a model for the integration of ecology and economics*, in *Bioscience*, 50, 313-320, 2000

<sup>31</sup> R. Creasy, *Edible Landscaping*, Sierra Club Books, San Francisco, 2010

<sup>32</sup> K. Bohn, A. Viljoen, *The Edible City: Envisioning the Continuous Productive Urban Landscape (CPUL)*, in *Open House International*, 34, pp. 50-60, 2009

<sup>33</sup> J. Zhang, YH Sui, *Selection and Design of Ornamental Plants for Low-Carbon Urban Landscape: A Review*, in *Applied Mechanics and Materials*, 174-177, pp. 2314-2317, 2012

<sup>34</sup> J. R Leake, AA Bradford, JE Rigby, *Health benefits of 'grow your own' food in urban areas: implications for contaminated land risk assessment and risk management*, in *Environmental Health*, 8, 2009

<sup>35</sup> PV Righi, G. Marchi, G. Dondi, *stabilization through drainage wells of a landslide in the city of Perugia*, in *Acts the XVI National Conference Geotechnics*, Bologna, 14-16 May 1986



was flowing into the sewers and that instead, in our proposal, it is channelled and distributed in a water supply system with storage tanks and drip systems controlled.

The innovative management system clearly involves a complication of the management of urban space, as if the popular tradition says that “the garden wants the man dead,” it is unthinkable that such a complex system does not have deep problems with implementation. But the challenge undertaken was born from the profound reversal of the territorial government<sup>36</sup>, a concrete application of the bottom-up strategy that will be needed to be accompanied and supported, but which can bring those rich rewards associated with participation and social cohesion<sup>37</sup>.

## Conclusions

The smart city, the overlap of technology, engages in the path of urban, in those stratified signs that make resurface the sense of a space full of history so that it becomes a “place”<sup>38</sup>. One of the reasons for the failure of the contemporary city is the loss of sense of their dialogue stratification, a condition that leads to create either new images, which however stop at the banality of the spectacle, or efficient models, certainly capable of ensuring easy guidelines<sup>39</sup>, but also herald a loss of the sense of identity. It is the side effect to the definition of space<sup>40</sup>, who has replaced the place, with the loss of the value of the sign<sup>41</sup>, which liquefies in the loss of human scale. The dialogue between the individual protagonists of urban space configures the close correspondence between *urbs* and *civitas*: in the centre is placed man, his language skills, his ability to create culture, his will to communicate their identity, aesthetic intentionality leading the dialectic between individual city and multiple city. The question of the relationship between technology and cities, the city connotation with smart landscapes, it is finally expressed as a substantial anthropological problem hinged on the sense of the report on which is based the concept of city.

The image then makes a “re-velation” in the sense of place, as it manifests itself but at the same time it hides, because implicitly pours itself in an identity language that requires a coding, and this preserves the narrative of its history. That’s why the landscape and the smart city find their foundation in the relation, which is expressed in a full participation, too often evoked only in a fantasy, for the conflict connected to Sartre’s hell which is the other<sup>42</sup>. Moreover, the limits of a society made on liquid relations, realize that the future is in the path of intelligence shared and widespread. Loneliness kills the intelligence of the city and its landscapes, while instead, in experience, relation, they live bonding with unity and fragment, between tradition and innovation, between time and space, however, in relation.

<sup>36</sup>M. Bassoli, E. Polizzi (eds.), *The governance of the territory. Participation and representation of civil society in local politics*, Franco Angeli, Milano, 2011

<sup>37</sup>C. Pahl-Wostl, M. Hare, *Processes of Social Learning in Integrated Resources Management*, in *Journal of Community & Applied Social Psychology*, 14, 193-206, 2004

<sup>38</sup>C. Norberg-Schulz, *Genius Loci: Towards a Phenomenology of Architecture*, Academy Editions Ltd, New York, 1996

<sup>39</sup>D. Katz, *Gestaltpsychologie*, Benno Schwabe, Basel, 1944

<sup>40</sup>B. Zevi, *How to See the architecture*, Einaudi, Torino, 1948

<sup>41</sup>P. Klee, *Das Denken bildnerische*, Benno Schwabe & Co., Basel, 1956

<sup>42</sup>JP Sartre’s *Huis clos*, Gallimard, Paris, 1944

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## Drawing Around the Corner

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This story begins with an image: a photograph portraying an absorbed Ludwig Mies van der Rohe hieratically staring at a model of Farnsworth House [fig. 1]. What exactly is he looking at, with such an intensity and concentration is difficult to tell. But, here's a good guess: he is watching the corner.



Fig.1 Ludwig Mies van der Rohe at MoMa

While for all his life Mies has obsessively looked for God in the details<sup>1</sup>, the corner detail - where the conflict between two converging and discordant directions resolves itself - is certainly his *pièce de résistance*. To look at an orderly sequence of the corner details Mies designed for the skyscrapers built during his “American” period, for example, becomes for the viewer an experience of patience and delight: fifteen different solutions for as many buildings, fifteen variations at times nearly imperceptible of a single theme stubbornly coming back, again and again [fig. 2]. And, naturally, we would just be looking at fifteen “photo finishes”, stills of an unrestful flood of preliminary sketches, where the distance separating a good architect from a poor architect is measured in a few centimeters, if not millimeters.

<sup>1</sup>The proverbial “God is in the details” is commonly credited to Mies, even if there is no written record of him containing these exact words. Cf. Philip Johnson, “Architectural Details”, *Architectural Record* 135, April 1964, p. 137-47.

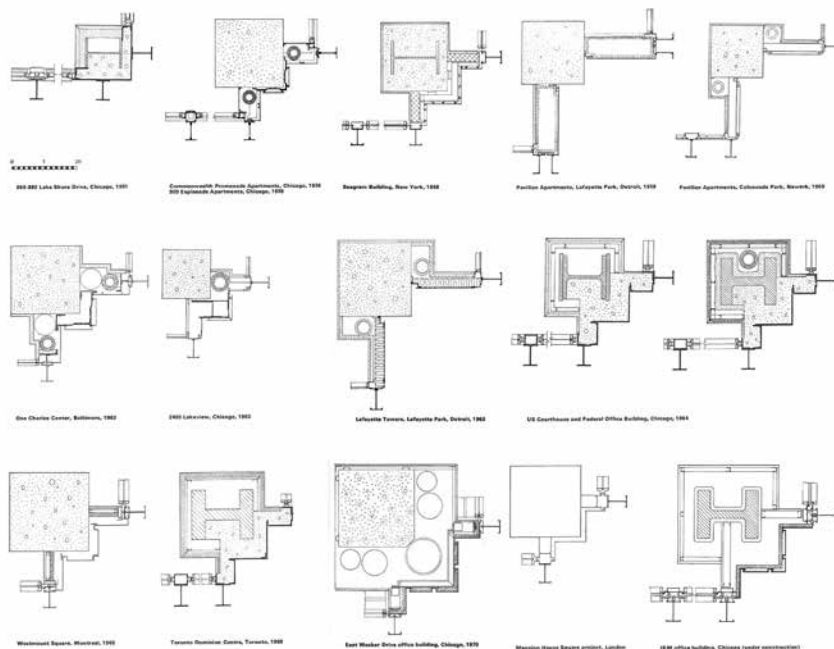


Fig.2 Ludwig Mies van der Rohe, Corner details (from: John Winter, *The Measure of Mies*, Architectural Review, February 1972)

Of all the great Modern masters, Mies is undoubtedly the most history-conscious. Not perhaps in his scarce and measured words, but certainly in his designs, always searching for a long-distance confrontation with the greatest architects of the past, from Ictinus to Schinkel, following a habit he directly inherits from his masters Hendrik Petrus Berlage e Peter Behrens. Of all the great Modern masters, Mies is probably the only one where the great Western classical tradition never really breaks off. Of that tradition, the corners of the buildings are a central theme from the beginning, starting from the archetypal model of all that came along afterwards: the Doric Greek, its so-called “corner conflict” proposing right from the start the idea of an architecture made of often difficult, if not altogether impossible, details to resolve. Everyone knows the subtle variations devised by the Greek architects to close the corner with a triglyph without altering at the same time the metopes proportions<sup>2</sup>. If in the end the “Gordian” solution proposed by Vitruvius (to accept a poorly proportioned corner metope) finally prevailed, still in XIX century William R. Ware could admirably describe the refined drawing of Sansovino for the corner of S. Marcus Library in Venice. There, a complex and rhythmic superposition of columns and pilasters finally obtains the right proportions for the corner metope<sup>3</sup>. Mies is both the inheritor and the continuer of this long tradition. Then again, and beyond any tradition, corners are a *topos* for Western architecture in the whole - at least until the advent, with the new millennium, of a “spectacular” architecture seemingly having pretty little time to spare with details. Together with the “connection to the ground” and the “sign of closure”, the “corner solution” is a recurring catchphrase of the typical architect’s idiolect.

<sup>2</sup> See: Giorgio Rocco, *Guida allo studio degli ordini architettonici antichi, I. Il dorico*, Liguori, Napoli 1994.

<sup>3</sup> William R. Ware, *The American Vignola: A Guide to the Making of Classical Architecture* (1903), Dover, Mineola 1994, p. 97.

The reason is quite simple: each one of these three expressions names a liminal part of the architectural object, the transitional border between its figure and the ground where it stands out. Corners, ground line, and skyline, are the places majorly de-terminating an architectural artefact.



Fig.3 Philip Johnson, *Glass House*, New Canaan, Connecticut, 1949.

Coming back to the Mies we left staring at Farnsworth House model: the photograph was taken in 1950 at the MoMA, during a solo exhibition of his work. He is looking at the corner, we guessed, and maybe he is thinking about another glass house, *the Glass House* by Philip Johnson, drawn and built just a year before, in 1949 [fig. 3]. Farnsworth design had begun earlier, in 1946, but its building process will begin only four years later, to end in 1951. His friend-and-foe, colleague-and-rival Philip Johnson has apparently stolen his idea, but then vicissitudes of life made Johnson arrive first. Johnson never made no secret of his plagiarism: the Glass House is “frankly derivative”, he repeated several times<sup>4</sup>. This is one of his most best-known rhetorical devices: to declare loud and clear what his critics think and dare not to say. Actually, this time Mies had been quite explicit: “He did come around here [...] snoop through all the details and copy them”, he said; but, he added, Johnson made bad details “because he hadn’t worked them through, but just sniffed around them”<sup>5</sup>. But, about the Farnsworth vs. Glass case, Johnson is once more even more explicit. He tells the tale of how one night Mies was a host in the newly built house of glass, and how, after ample libation, the argument between him and Mies became more and more heated, to the point when Mies declared his firm intention to leave, and Johnson had to look for a place in the neighbourhood where Mies could crash for the night. Resentment and jealousy, perhaps; but not only that. In the same tale, Johnson reveals the bone of contention: the Glass’ corners. Poorly designed?

<sup>4</sup>“House at New Canaan, Connecticut; Architect: Philip Johnson”, in *Architectural Review* 108, September 1950, p.152-159.

<sup>5</sup> Franz Schulze and Edward Windhorst, *Mies Van Der Rohe: A Critical Biography, New and Revised Edition*, The University of Chicago Press, Chicago 2012, p. 339.

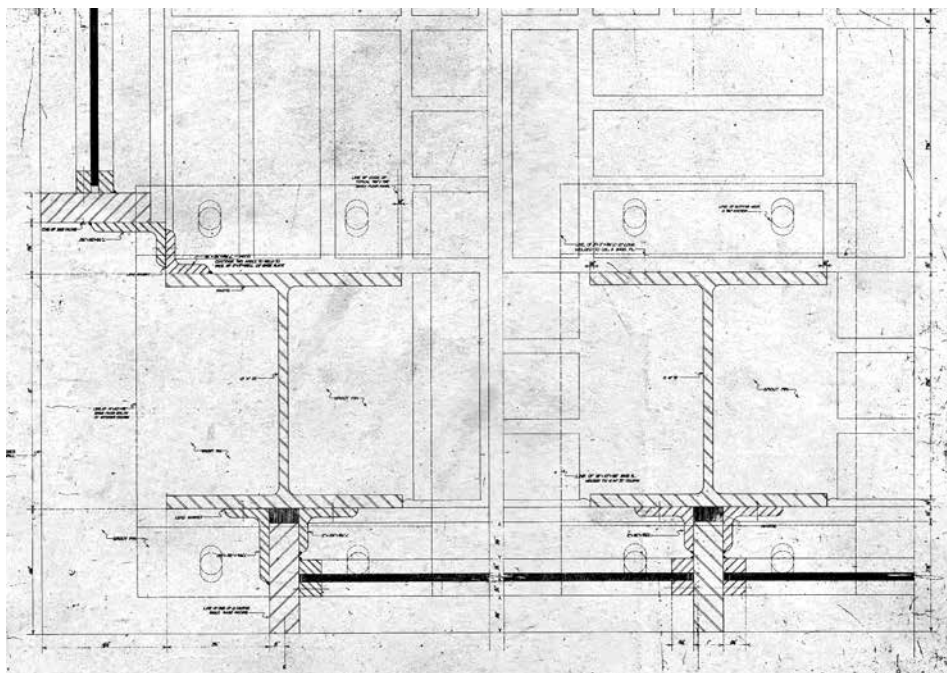


Fig.4 Philip Johnson, *Glass House, Corner Detail*.

Here again: perhaps; but not only that. The Glass House's corner details are indeed quite unsuccessful. They present a very similar problem to that of another classical angular conflict: the one of the Ionic order, where the capital presents, seen from the front and from the side, two different faces (scrolls on the front and balusters on the side). So that, when turning around the corner of a temple with a continuous colonnade, one of the two sides of the temple would necessarily have, on one side, the two corner columns different from all the others. The solution to this problem, already Greek (Erechtheion) and commonly adopted, is one of a special Ionic capital, where one of the two scrolls is rotated by 45 degrees, to assume the same aspect on both sides of the corner column. Johnson's glass "temple" columns, some HEA square section steel beams, also present two different faces: full on one side and hollow on the other. Johnson has them with the hollow face on the front and reserves the full one on the sides. However, he adopts the same kind of glass frames on both sides, so he is forced to weld the same profiles in different ways on the two sides [fig. 4]. Not a great solution, certainly cheap in Mies's eyes. However, that is not the real problem.

What really bothers Mies in those corners is... the fact that they are there, that they "exist". This apparently "weird" explanation is the subject of a conversation, several years later, between a young Anthony Vidler, then student of architecture just arrived from England, and the same Philip Johnson. To explain the fundamental difference between the two houses, Johnson sketches on a piece of paper the Farnsworth as two parallel horizontal planes, and the Glass a thin-line closed box [fig. 5]: Johnson puts a column in the corner, so he *closes* it, while Mies leaves it *open*. A detail, indeed. But extremely significant: "I wish I had kept it - says Vidler years later - as a first memento of postmodernism"<sup>6</sup>.

<sup>6</sup> Anthony Vidler, in *eOculus* 26.04.05, *Special Issue: Remembering Philip Johnson, FAIA*.

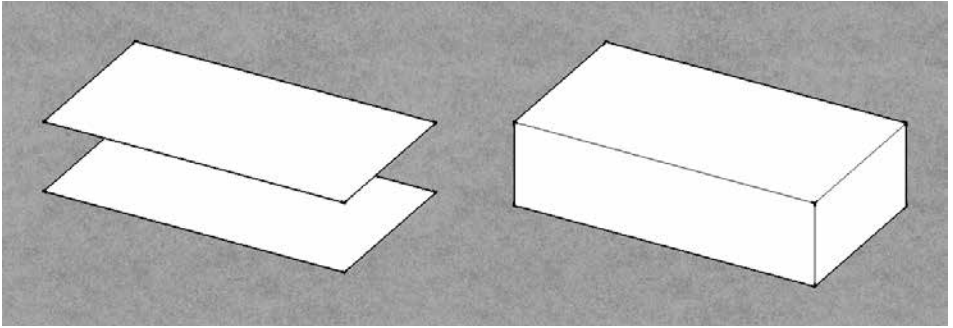


Fig. 5 Farnsworth House (left) and Glass House (right), explanatory sketch.

Modern and Postmodern, two epochs, two opposite *weltanschauungs*, divided by a corner detail. How this can be, how a few cubic centimeters of stuff can have such a dramatic role, is what we can understand if we resort to some elementary notions of the *Gestalt* theory: the pregnancy (*prägnanz*) of a figure, its ability to act *as a figure*, depends more than everything else from the its corners. If we see four points equidistantly disposed in a quadrilateral [fig. 6a], it is almost impossible not to mentally connect them to form the closed figure of a square [fig. 6b]. The same thing does not happen with the sides: if we replace the sides of that same square with their median point [fig. 6c], we will again visualize a square, but rotated by 45 degrees [fig. 6d]. Again, if we subtract the intermediate parts of a rectangle preserving only the corners, we will continue to see a rectangle, mentally linking together the four separate figures [fig. 6e]<sup>7</sup>. Conversely, if we subtract the corners the rectangle will disappear, replaced by a cross [fig. 6f]<sup>8</sup>. The visual strength of the corners is so powerful that if we complete this last picture by drawing four irregular figures to cover the previously subtracted corners, the rectangle will reappear again, defined by corners that we are seeing anew even if, as in this case, they do not materially exist [fig. 6g]<sup>9</sup>.

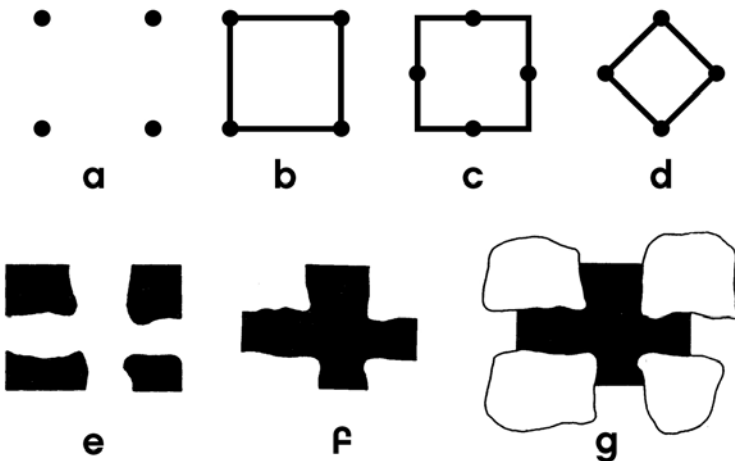


Fig. 6 Squares, Rectangles, and Corners.

<sup>7</sup> Gaetano Kanisza, *Vedere e pensare*, Il Mulino, Bologna 1991, p. 175.

<sup>8</sup> Ivi, p. 176.

<sup>9</sup> Ivi, p. 179.

In *Art and Visual Perception*, Rudolf Arnheim sketches a pattern he calls the “structural skeleton of the square”, where the center and the corners emerge with great clarity as the main points of visual attraction [fig. 7]<sup>10</sup>. The same pattern could be used as a didactic illustration of the well-known, fundamental and variously attributed, aphorism of Gestalt theory, “The whole is greater than the sum of its parts”<sup>11</sup>: the *whole* of the square (symbolically represented by the void at the center) emerges *as a figure* thanks to the sum of its *parts* (the corners). Gestalt’s theory is contemporary to modernity - the seminal texts of its founding fathers Max Wertheimer, Wolfgang Köhler, and Kurt Koffka, all appear between the ’10s and the ’30s of the Twentieth Century - however its fundamental principles had been intuitively known for a long time. Indeed, the already mentioned aphorism illustrates how the *Prägnanz*, the *good form*, comes into being thanks to existence of parts *organically* concurring to the configuration of a whole. To think of it, this definition compares in essence to the one chosen by Leon Battista Alberti in 1452 to define beauty: “Beauty is that reasoned harmony [*concininitas*] of all the parts within a body, so that nothing may be added, taken away, or altered, but for the worse”<sup>12</sup>. Here too a one-to-one relationship is established between the whole and its parts, thanks to a bond whose organic unity can be threatened by the slightest alteration. The whole exists thanks to the presence of the parts, and the parts are parts thanks to the presence of a whole. Now, Alberti draws this definition almost *verbatim* from Aristotle’s *Poetics*<sup>13</sup>; and, if add that in *Metaphysics* Aristotle states that “the whole is something beside the parts”<sup>14</sup>, the circle is closed and we can acknowledge how this definition of form as a relationship between whole and parts, variously worded but substantially unchanged through the centuries, constitutes one of the cornerstones of the whole Western aesthetic tradition.

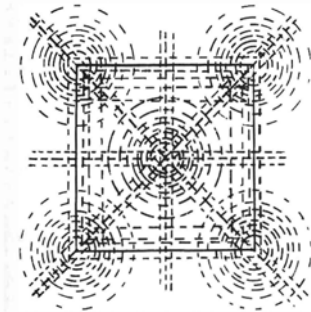


Fig.7 Structural skeleton of the square (from Arnheim).

Of this long tradition, Mies and his empty corner are the point of arrival, at the same time its most extreme achievement and its most radical negation. By subtracting the corners, Mies breaks up the whole (volume) and gives individuality to the parts (surfaces); he destroys the figure-ground relationship by liberating the planes into the space. By comparison, Johnson’s Glass House, though even more transparent of the Farnsworth (a lower number of opaque accessory volumes encumbers its interior), remains - thanks to its outlined corners - a clearly defined artificial boundary (figure) against nature’s background. Starting from this first corner design choice, all the other compositional choices setting apart the Farnsworth from the Glass stem, both logically and formally.

<sup>10</sup> Rudolf Arnheim, *Art and Visual Perception. A Psychology of the Creative Eye* (1954), University of California Press, Berkeley 1974, p. 13.

<sup>11</sup> Ivi, p. 78.

<sup>12</sup> Leon Battista Alberti, *De re aedificatoria*, VI, II, 93v. English translation: Joseph Rykwert, Neil Leich, Robert Tavernor, *On the Art of Building in Ten Books*, MIT Press, Cambridge Mass. 1988, p. 156.

<sup>13</sup> “[...] a whole, the structural union of the parts being such that, if any one of them is displaced or removed, the whole will be disjointed and disturbed. For a thing whose presence or absence makes no visible difference, is not an organic part of the whole.” Aristotle, 1451a. English translation: S.H. Butcher, *The Poetics of Aristotle*, MacMillan, London 1895, p. 33.

<sup>14</sup> Aristotle, 1045a. English translation: W.D. Ross, *The Metaphysics of Aristotle*, Clarendon Press, Oxford 1908.



The first one “suspended” in the void, the other firmly resting on the ground, upon a brick foot layer emphasizing the ground line as an other clearly defined liminal part of the figure; the bilateral symmetry of the first immediately denied by an eccentric external platform, the fourfold symmetry of the other emphasized by the positioning of a door at the center of all four sides; the absence of a clear dimensional scale in the first, the banister circling the entire perimeter of the second giving - together with the doors - a clear suggestion of the human scale [fig. 8].

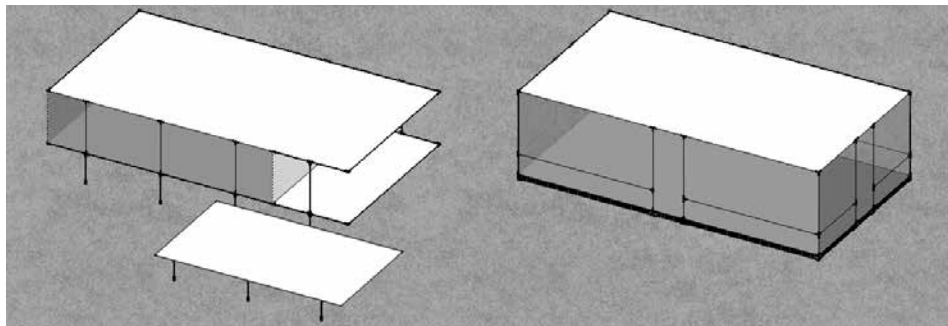


Fig.8 Farnsworth House (left) and Glass House (right), explanatory sketch.

The will to destroy the corner is a trademark of Mies' poetical stance right from the start. It is already there at the houses on Afrikanische Strasse, built in Berlin in 1925. The corner near the entrance staircase already shows a kind of solution that Mies will continue to explore for many years to come: to arrest the converging wall planes before they reunite in their geometrical point of intersection, laying them on a solid surface behind. In this way, the planar quality of the walls is emphasized to the detriment of the volume they contain. This is the birth of what then has been characterized as Mies' “negative corner”<sup>15</sup>, a solution probably deriving from the villa built in Darmstadt by Mies' master Behrens, in turn inspired by an analogous one to be found in Schinkel's Altes Museum. Actually, it is also possible that this way of turning the corner comes directly from the Classical tradition, as a typical Mannerist device to be found, for example, in Codussi's Ca' Corner in Venice. We will find the negative corner plenty of other times in Miesian architecture: without exception, in all his skyscrapers; but above all in IIT's Alumni Memorial Hall, where it receives the most clear and accomplished treatment. The converging brick walls - in this case - are fitted in two IPE sections, in turn placed in axis to the concrete column behind, welded to an L section recovering it. This oft published and commented detail could be regarded as Mies' personal solution to what we called the “Ionic conflict” speaking about the shortcomings of the Glass House. If we consider the negative angle as the expression of a desire progressively approaching its purpose, this desire will find its full completion in Farnsworth House, where the functional program will finally allow Mies to directly eliminate the whole angle (along with the perimeter walls). Of this desire we can give at least two explanations, not necessarily mutually incompatible. On the one hand, Mies is just sharing a nihilistic *kunstwollen* in common with most artistic avant-gardes of the period: for example, the tireless work of destruction of the volume, implicit in the rejection of three-dimensionality in abstract painting. Particularly in Mondrian's paintings, who will declare in clear letters that the volume “*must be destroyed*”, adding shortly after that “the destructive element is too neglected in art”<sup>16</sup>. On the other hand, this request acquires entirely new meanings when moving from painting to architecture, where three-dimensionality is not just illusory but real. To destroy the

<sup>15</sup> Cfr.: Carsten Krohn, *Mies van der Rohe. The Built Work*, Birkhäuser, Basel 2014, p. 115. Krohn wrongly locates the Alumni Memorial Hall the first instance of this kind of detail, while mentioning Afrikanische Strasse housing just for the way the buildings are connected at an urban level (p. 50).

<sup>16</sup> Piet Mondrian, in “Eleven Europeans in America”, *The Bulletin of the Museum of Modern Art*, 1946, Vol. 13, No. 4/5, pp. 35-36. Mondrian's emphasizing.

closed volume, in this case, means to directly take part in the real world, to get rid of the diaphragm separating art from life, nature from culture. “Interpenetration! - cries Sigfried Giedion in *Building in France* - there is only a single, indivisible space”<sup>17</sup>. He is echoed by the words of Bruno Zevi in 1973, where the neologism “urbatecture” describes an architecture dissolving the volume into “slabs then reassembled in four-dimensional sense”<sup>18</sup>.

Let’s go back, for the last time, to the model of Farnsworth House where we began. So this is what Mies is looking at: as a real Zen master he is contemplating the void, and “hieratical” is a proper adjective to qualify his glance. Is he satisfied? Not entirely, probably: during the ’50s silicone is not yet a building material and the two glass plates still need steel frame to keep them standing. In fact, the detail where the two sheets of glass are brought together presents us with nothing but a micro version of the ever recurring “negative angle”. It is true that its size equals one-eighth of the one employed by Johnson; it is also true that from a reasonable distance it is practically invisible. But... it is still there: Mies cannot yet claim to have achieved the serenity of impermanence. He will have the chance to make up for this with his latest great work, the Neue Nationalgalerie built in Berlin in 1968 [fig. 9 (left)].



Fig.9 Ludwig Mies van der Rohe, *Neue Nationalgalerie*, Berlin 1968 (left); Philip Johnson, David H. Koch Theater, Lincoln Center, New York 1964 (right).

Here, Mies keeps the external glass wall in the rear, the columns are well distanced from the corners, the flat roof abuts in cantilever, and the corners are - at last - empty. The fact that Mies is able to finally crown his dream at the end of his career, in a building that is in all respects a “Doric temple” made of steel, has almost a symbolic value. In a grand finale with an Hegelian touch, Mies puts an end to a long tradition by solving the Doric conflict from which it was born. Meanwhile...

Meanwhile Philip Johnson did it again: he preceded him, this time by for years, by building the David H. Koch Theater at the Lincoln Center of New York. A building roughly of the same dimensions of the Nationalgalerie, standing to it just as the Glass stood to the Farnsworth. In fact, the Theater is like the Nationalgalerie plus the same slight alterations making the difference between the two houses: a slab roof resting on columns, but scrupulously placed in the corners, the main entrance symmetrically emphasized at the center of the façade, and a balcony at the first floor corresponding to the Glass’ banister [fig. 9 (right)]. The whole built in stone instead of steel: Johnson is increasingly distancing himself from modernity.

Indeed, together with two other monumental buildings in stone, the Theater faces a square designed by the same Johnson, clearly inspired by Michelangelo’s Capitol Hill in Rome.

<sup>17</sup> Sigfried Giedion, *Building in France, Building in Iron, Building in Ferroconcrete* (1928), trans. J. Duncan Berry, Getty Center, Santa Monica 1995, p. 90-91.

<sup>18</sup> Bruno Zevi, *Il linguaggio moderno dell’architettura. Guida al codice anticlassico*, Einaudi, Turin 1973, p. 59. My translation.

The reference is once again acknowledged: indeed, to leave no doubt, Johnson reproduces on the ceiling of his theater Michelangelo's drawing for the a paved oval field at the center of the Capitol square. This manifest treason of modernity, however, is not the most impudent taking part in the whole Lincoln Center scheme: the building facing the principal side of the square, Wallace K. Harrison's Metropolitan Opera House, displays a monumental façade made of five concrete round arches clad in white travertine: classical architecture coming back to the world after an excommunication lasted almost fifty years. Behind the archway, a glass wall with a frame in bronze recalling Mondrian's composition, albeit in a symmetrical treatment. Modernity is dead and postmodernity is overtaking, rided with great self-confidence by an imperishable Philip Johnson.



Fig.10 Morphosis, Cooper Union Building, New York, 2009

According to a criterion born by modernity itself, by which the real genius is the one who more than anyone else is able to see ahead of his times, Philip “Plagiarist” Johnson should be considered the real winner of this whole story based on rivalry and low blows. In hindsight, actually, both rivals probably lost: seen today, their “manic” caring for details appears to us as part and parcel of a long gone past, obscured by an architecture needing quite other devices to make a difference. Looking at the “corner solution” designed by Morphosis for Cooper Union, the way Robert Venturi had described the refined details of the modern masters comes to mind: “like [dancing] a minuet in a discotheque”<sup>19</sup>.

<sup>19</sup> Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form* (1972), MIT Press, Cambridge Mass. 1977, p. 139.

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## Drawing utopias: City and environment from Utopia to LILYPAD

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### Abstract

The ideological character of a utopia is such that its main characteristic is its infeasibility. The representation of a utopia's location, however, is of a possible reality, and one that we can put it into words and graphic representations.

Utopias, being organized social alternatives to what is already known, seem to have close relationships between the great practical and moral questions they seek to solve and the territorial organization of their communities. In fact, we can clearly read, or at least infer, a relationship between the organization of settlement structures and the ideological charge that they represent.

Every era has its own utopias related to the issues of the moment. Every utopia therefore has a different relationship with the local context in which is developed. From the polycentric structure of the 54 cities of the original *Utopia* by Thomas More to Archigram's *Walking City* to Vincent Callebaut's *LILYPAD: Floating City for Climate Change Refugees*, the representation of utopias identifies specific relationships between the city and the territory.

In some utopias, including More's 16th century treatise, the theme of the relationship between man and the environment in which he lives seems to be part of the transgressive concept of the utopia itself. In a sense, Utopia is the progenitor of Ernest Callenbach's *Ecotopia*, part of the great debate on the environmental problems that will be with us for a long time.

### Introduction

The concept of utopia has always existed but has manifested in different ways throughout the history of man.

Usually a utopia is a political, social, and religious order that has no basis in reality. In fact, that is proposed as an ideal model as it indicates an objective understood as purely unreal and not actually reachable. In this sense, it should have connotation of a reference point on which to orient pragmatic and practicable actions, both a mere illusion and an unrealistic ideal.

The utopist—a utopias maker, supporter, or critic—may build his preferences and make ideological choices far from the study and understanding of reality and its dynamics, or he may follow a pragmatically desirable and viable path, considering it achievable.

Although it is not an essential element of the concept of utopia, many examples have a universalist character; others are utopias of the elite.

Yona Friedman (1974), in his book *Utopies réalisables*, translated as “reachable utopias,” says that only small groups can reach a utopic dimension as small communities are able to manage their survival, and argues that governments should encourage this trend.

Utopias that can in the end be realized, and those that belong to the past, are ultimately still overcome before they are fulfilled. Therefore, in this case their value is not in their future fulfilment, but in their present influences.

Friedman strongly believes that the only real utopias are the achievable ones. In his view, believing in utopia and being realistic at the same time is both possible and not inconsistent. Ancient utopias, such as Plato's utopic Republic, or religious movements, were not considered by the authors as infeasible. Since Thomas More, utopia has an exclusively literary feature and it is a prerogative of the intellectuals. His utopian theory proposes the following axioms: utopias arise from a collective dissatisfaction; utopias can arise only on condition that there is a well-known remedy; and utopia can become viable only if it has a collective agreement. This is why it can be reached just by small groups.

It is evident that in some cases that these three conditions will not occur contemporaneously. Very often utopias intuit possible solutions, but representations can be very abstract and imaginative. For this reason, they remain on paper only, in the form of words or drawings. They need a language, which can be a graphic language, to express something that does not exist. Historian Jean Servier saw this is as the dream of the West itself, the nostalgia of Paradise Lost, and an attempt to reach a promised land. As a dream, to interpret it, Servier borrow the terminology of psychoanalysis: utopia, seen as a city protected by walls, or as an island divided by the sea from the rest of the world, is the Mother who has taken the place of the Father, sealed in an eternal present.

Servier in 1967 states *"without a doubt the word utopia evokes images, fantasies unrelated to reality. The critical observation of the world around us leads to the birth of utopia, then springing from the desire to respond to the society crisis and to the feeling of abandonment of a social class, such as has already happened in the case of socialist utopias of Pierre-Joseph Proudhon"*.

Throughout human history, we have always resorted to the creation of utopias particularly at times of crisis; the advent of economic and social crisis in our time has reawaken the impulse toward this issue. Carlo Paggetti (2014), in the essay *"Amare Utopie"* (bitter utopias), writes *"In fact the beginning of the [21st] century has not rejected the utopian thinking, and try, in fact, new roads to reaffirm its relevance we talk about multicultural utopia, to identify communities where different ethnic groups and cultures coexist peacefully and mutually beneficial. This utopia, which would lead to forms of consultation, information, participation, and democracy, can involve every member of the Network; ecological utopia, in which the trade-off relationship between man and other creatures of the Earth – the nature as a whole – is recovered and valorised"*.

Every utopia has social consequences and any society can be considered as a realized utopia. In fact, any society is a project of a very complex organization, recognized by a number of individuals who choose to follow the same rules. Society and the environment in some ways are similar, if by environment we mean a set that contains human beings and objects.

With regard to instances of ecological and environmental nature, it may be questioned whether today the concept of sustainable development and that of sustainability (environmental, social, and economic) can represent a kind of utopian vision of the world.

There are, in the vision of More's utopia, some similarities with traditional societies and civilizations, which easily can be associated with the idea of returning to the vernacular. Utopia, thus, is the will to return to the immutable structures of the traditional city.

Architects and designers are especially disposed to harness the power of metaphors through the use of evocative images that run the risk of transforming a complex issue in a board game. It may be captivating and at times, even seductive, but it transfigures the true extent of the problem.

## Methodology

The authors of this paper, hereinafter, give a partial reading of the content related to the different described utopias, but oriented in a specific manner. The case studies selected were chosen because their representation seems to be particularly interesting as a means of evoking what does not exist (or does not exist yet). These have features related to the event that generated the utopia itself: the social revolution, policy independence, a different relationship with the surrounding physical environment.



Fig.1 Utopia. Map by Abraham Ortelius, ca. 1595

Utopia, the utopian society imagined by Thomas More in 1516, is an island separated from the rest of the world where a social organization with an objective of equality and social justice has developed. Foundational elements include the elimination of social classes - albeit retaining some hierarchical elements, such as the need for householders, for phylarchos (Greek tribal chiefs) and magistrates, as well as slaves - the equitable distribution of work in order to free up the time to cultural activities, and the elimination of private property. The principle of equality is clearly reflected in Utopia's territorial organization, which has functional distribution and homogeneity (although it also retains the idea of the need for a capital city).

On Utopia Island, there are 54 large cities with almost equal settlement structures, insofar as they allow for nature of the ground on which they arise.

Those nearest are separated by only 24 miles so as to be no more than a day's march from one to the other. A single language and the same customs and laws unite the people who live there. The sense of community is thus given not only by the homogeneous social mores but also by the ability to move easily from one city to another.

Each city is connected to a county. The counties' suburbs are well distributed and none has fewer than 12 miles in every direction, with some having more space. There is no desire to expand borders because people consider themselves farmers and not landowners and in the agricultural fields there are equipped cottages where citizens - not fewer than 40 per household, with two slaves - go to live alternately. In fact, every year 20 people who have lived in the country for two years return to the city and are replaced by 20 more. A couple, a Father and a Mother who are considered wise and mature and who are obeyed, runs each family; every 30 households has a chief. People who enjoy farming are allowed to remain there for more years. Indications are given very specifically in relation to food production and surplus to the needs of farmers and what is shared with neighbours.

The description of urban space in the text is quite precise, indicating how important it was for the author, for a peaceful life, and for the environment around us. Particular reference is also made to the central city, considered the capital because it easily accessible from all the others. The houses are separated from the road but doors are unlocked and anyone can enter; moreover, as no one fears those nearby and private property does not exist, there is no concept of theft

There are several paintings of Utopia. All represent Utopia as an island surrounded by the sea, and the ships on which the narrator, Raffaele, arrives. Some look like the descriptions from the text: more or less a circular base with a gulf creating a half-moon bay and a large rock in the bay occupied by a fort that houses the soldiers to protect the harbour. In other representations (e.g., a ca. 1595 map by Abraham Ortelius), the shape is irregular and the rock in the bay is reduced to a dot. It can seem strange to need to defend from enemies (often cited in the text) this idyllic place. Some of the 54 cities are represented with features typical of northern European architectural at the time highlighted, such as towers at the sides of the large arched doorway, cathedral spires, and steep roofs.

Much more closely related to environmental issues is *Ecotopia*, a book written by Ernest Callenbach in 1975 which describes a society formed by a secession of Northern California from the United States of America.

In the beginning of the book the author specifies the etymology of its title, underlining how "eco", from Greek "oikos", means household or house, as well his combined concepts of utopia and ecology. In this case, the book themes, carrying out the environmental ideals, are focused on the story of a society in which, despite very strict technical and economic rules, individual freedom has a large outlet in social relationships. The protagonist is a journalist, William Weston, who has come from the United States to do a report on this society and its customs.

During his stay, he describes all the aspects that characterize *Ecotopia*, including its social, political, and industrial organization, its agricultural production, and the city and its architecture, in which we can recognized elements of the San Francisco bay area.

As described by Callenbach, to cross the border of *Ecotopia*, Weston takes a train, "which looks more like a wingless airplane," and is suspended magnetically. San Francisco, the first city we meet in the book, has street with no cars, just electric buses and bicycles. Everything is surrounded by green gardens, fountains and benches. The buildings are mainly made of wood, which has become the predominant building materials in *Ecotopia*. Weston describes them as, "old-fashioned looking," with "small balconies, roof gardens, and verandas – often covered with plants, or even trees.





Fig.2 Drawing Ecotopia (author: Maria Canepa)

The apartments themselves are very large [...] with 10 or 15 rooms, to accommodate their communal living groups.” (Callenbach, 1975, p.24.)

Ecotopian society recognizes and encourages new forms of family, including extended families, multiple partnerships, the choice of more supportive, alternative parents, and the ability to spend time in different households, in the course of their lives. This flexibility is found in the housing needs: the houses, generally built with wood or stone, can be extended by cylindrical housing modules made of natural plastics.

Weston describes these as “*oval-cross-section tubing [...] The tubing can be made solid, or windows can be punched out along the side. It can be bought with ends cut off square or on the diagonal. The resulting houses take many shapes – in fact I’ve never seen two that were alike – but you can get the general impression by imagining that jet airplane cabins could be bought by the yard and glued together into whatever shapes you had in mind.*” (Callenbach, 1975, p. 122.).

His dissertation on technical-economic organization are rigorous and well-argued, as is his description of the, defined as micro-cities linked together like pearls on a necklace of the ecotopian train system.

The cover of the first Ecotopia edition features art representative of its main topics: the Sierra Nevada mountains, the train, the small cottage houses, and the old skyscrapers of San Francisco in the distance, using a style for graphics and colour that belongs to the 1970s. The book’s issues are belong to ‘70s, especially the idea of eco-consciousness combined with eco-spirituality, and the problem of energy consumption as it related to the oil energy crisis.

A dystopia aspect, however, resides in the forced self-sufficiency and in the necessary isolation from a consumer system that, while recognizing the need to address the environmental issue, it does not change its liberal structure.

The cited case studies (Utopia and Ecotopia) are examples of literary utopias that were not born to foreshadow possible architectural projects, although they provide many details about aspects of territorial organization and design.

In architecture and planning, utopias face inevitable complexities and paradoxes connected with the search of a perfect world or a new society. Among all the arts, however, architecture is the one that can convey most consistently our possible futures, thanks to the concept of progress and innovation inherent in the discipline, ideas that are deeply tied to utopia. In fact, architecture is focused on the temporal projection, by the process of building up to the inevitable configurations of a space characterized by political and social dynamics.

As in the case of Utopia, architecture tends to see the world differently, and the continued demand for change and transformation of the present brings a radical revolutionary impetus. It is thus not a coincidence that the expression of radical architecture usually refers to groups active in the 1970s, like Archigram, Superstudio, and Archizoom.

The radical architecture definition that was coined in the early ‘70s to indicate and bind different experimental attitudes within a unique architectural phenomenon. It refers to a general conceptual foundations process that had already begun by the late 1950s that had a utopian character and visionary research. It is a search which suggests the widespread need for new theoretical and linguistic formulations and for a different way of understanding the form and function relationship. This condition had until then necessarily stifled creativity, relegating architecture to a cultural backwardness as compared to the other arts. The architects seemed to find the overcoming of conflicts in formal utopias and the architectural avant-garde imagined utopia as a society in motion and a

connected city (such as Archigram's Walking City and Plug in City).

Nowadays, architecture is seen as translating the motions of the time, such as sustainable development, which can be a reference point for starting a social and cultural revolution. It seems that "Plant City" and "town water" are formal models of territorial organization relating to the "future that can not be." Behind the image of Archigram as radical architecture was, however, profound change in society. In Klanten and Feireiss we find a collection of proposals relating to the balance between fantasy and reality (some are mere graphical representations of concepts, others, project drafts). So-called "ecocities" are springing up around the world to imitate organic forms through biomorphism, satisfying desire for environmentalism à la page with only a few images and handful technological devices to manage power consumption. Vincent Callebaut's LILYPAD is an example of an urban design solution for addressing housing in the inevitable future of rising sea rising caused by global warming. The displaced people, climate refugees, are relocated to a completely self-sufficient floating city. The design language follows the biomimicry of the name "lily pad," which refers to aquatic waterlily plants, and has a futuristic design.

The floating island city is intended to be zero-emission, with capacity for approximately 50,000 people. Through a number of technological devices (including solar, wind, tidal, and biomass energy production) that also influences the design, the city would be able to not only produce its own energy, but to process CO<sub>2</sub> in the atmosphere and absorb it into its titanium dioxide skin.

## **Conclusions**

Many issues emerging from the description and representation of utopias contain elements that redefine the relationship between the man and his territory.

The first such evident element is an isolation from the rest of the world. The isolation can be determined by socio-political motivations (as in Ecotopia), a catastrophic event that has altered the territory characteristics as the rise in sea level (as in LILYPAD), or the need to remain untouched (as in Utopia).

There also seems to be an important rapprochement of the citizen to the experience of food production through farming or fishing; it is not a real end to social stratification or the allocation of roles so much as a recognition of the underlining importance of this activity in human life. A citizen who buys food is sometimes not aware of the cost in human and material resources behind this simple act. Indeed today, the urban farming seems to be the dream of many, representing the desire to regain simple but fundamental elements of our existence.

Another interesting theme is the presence of water. The water on one side is an element that provides "good" isolation from the rest of the world (as when a utopia site is an island); on the other is a symbolic element, the source of life, but also the instrument of catastrophic events (reminiscent of the biblical Great Flood).

Friedman's reachable utopias don't need the evoking power of drawings, because their links are in reality. Literary utopias find their strongest expression thanks to imaginative ability of artists giving their personal vision of what words suggest.

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# Urban Metabolism

## Sustainable transformation of the historic town

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*The city has helped the development of civilizations.  
But the civilizations that built cities, always died with it.*

*Perhaps, died of it.*  
Frank Lloyd Wright

### Abstract

The transformations that took place in the contemporary city have quickly transformed not only the image but also the metabolism of urban spaces. Cities are living in multiple ways, with different time frames, use and sharing of space. We live as tourists, residents, workers, artists, musicians and in many other ways.

The attractiveness of a city, with its repercussions in economic terms, is closely linked to cultural activities, provision of services, creative content that expresses the tolerance of diversity.

The city has become, on different levels, a service provider; carried out by public and private entities, or better, in partnership. These services are increasingly being provided within the twenty-four hours, in a continuous cycle that is radically changing the way of life of the users and consumers of the city.

Key words and concepts: urban metabolisms, new forms of living, sustainable tourism, urban acupuncture, temporary re-use, greening, densification, suburbs, fear, mixité, cultural nomadism.

Theoretical framework: Virilio (panic town, dromologie), Clement (third landscape), Kreitzman (24 hour society), Bauman (homo consumer), Bossart (tactical urbanism), Galdini (urban therapies), Landry (city-making), Attali (green economy), Augé (supermodernity), Kahneman (gross national happiness - GNH), Margalit (decent society).

### Introduction

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The attractiveness of a city, with its repercussions in economic terms, is closely linked to cultural activities, provision of services, creative content that expresses the tolerance of diversity.

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Rossana Galdini writes: *“In the 1980s, after the phase of expansion and demographic growth, cities began to implode, transform the existing, re-qualify abandoned areas, redefine spaces and functions, but compare, at the same time, With serious problems of environmental degradation,*

*traffic, pollution, devastating cementation, new urban poverty, poor infrastructure. Since the 1990s important geopolitical, technological and social changes have redefined the role of the European city that can no longer be read as a closed space inscribed in national spaces. The city is actually inserted into a new geography”.*



*Fig. 1 View of the great model of Marseilles urban regeneration program (photo of the author)*

## **Methodology**

City transformations can be synthesized through a set of commonly used definitions and keywords that are appropriate to describe new urban metabolism.

### **Sharing life**

The contemporary city is the place where the diffusion of the sharing culture is more evident. In common sense, sharing is the collective use of a resource. In the urban sense it is the use of a space in which to do things together. We share the web, the economy, the ideas, the work. Jeremy Rifkin writes that after the third industrial revolution, a new phase of sharing has emerged: an example is the widespread, non-centralized and monopolized energy production. Naomi Klein also provides a very critical picture of the economy, liberal and competitive, which is set to take the lead of sharing, solidarity and sustainability.



*Fig.2 Marsiglia: la Friche de La Belle De Mai. View of the theater from the raised hall on the roof of the sheds (photo of the author)*

### **New form of living**

Are the new needs of living a cause or a consequence of metabolic changes in the city? Co-housing, first, and co-working, then, are temporary modes? They represent the return of utopias of nineteenth-century or pop culture in the seventies of the last century? In any case, we see, in these decades, great changes in housing requirements. We mean housing needs not only for the home but also for work, culture and teaching. Space users are very different from each other and have problems that are, sometimes, opposed.

### **Green economy e green washing**

Jacques Attali is one of the most authoritative thinkers to use this term that now permeates every area of contemporary culture. We find green economy in many actions that we do daily and in a lot of products we buy. In the field of construction, vehicular mobility, food, clothing and materials. The city is happily pervaded by greening design: urban gardens, green facades, hanging gardens. Our daily life is, however, constantly under attack. Greenwashing is everywhere: opportunism, one of the characteristics that differentiates man from other animals, is the driving force behind it.

### Urban greening

Cities are getting greener. The reasons are basically three. The first is due to the increase in sensitivity to the environment; In recent decades has grown thanks to the development of the green economy. The second is allowed by a steady increase in technological innovation, which makes it easier to make greenhouse gardens and green walls. The third is caused by green-washing, the use of which sometimes results in positive consequences. An example of great importance is the project of the so-called Bosco Verticale realized in Milan and which won in 2016 the first prize for the most beautiful skyscraper in the world. A building that has convincing supporters or fierce detractors. Some, like me, consider it a successful and interesting experiment; others, on the contrary, see in it an architectural whim for a few wealthy buyers.

### Suburbs

The suburbs of cities suffer due to two difficult solutions. One problem concerns the technological obsolescence of buildings. The buildings of the last sixty years suffer, in fact, it is a paradox, of premature aging. The same does not happen for the ancient buildings that make up the historical centers; these buildings are sometimes in poor condition, but they can be retrained. Many buildings in modern suburbs will, however, have to be demolished and reconstructed. This situation will lead to very complex problems. The second problem is of a social nature and the solution must be found in public administrative policies. Stefano Boeri writes: *“Is it all the fault of the suburbs? In Europe, there are still those who are persuaded to believe that the periphery is still a geographic matrix concept, a recognizable territory by measuring with a ruler the distance from the ancient center of our cities ... ours is the era of the great metropolis, Of the planetary success of cities as a pervasive condition of social life. But the planetary success of the political, economic and symbolic pattern of urban life, unanimously considered the most efficient form of living the world, is likely to turn into a period of dissipation of the essential components of making cities.”*

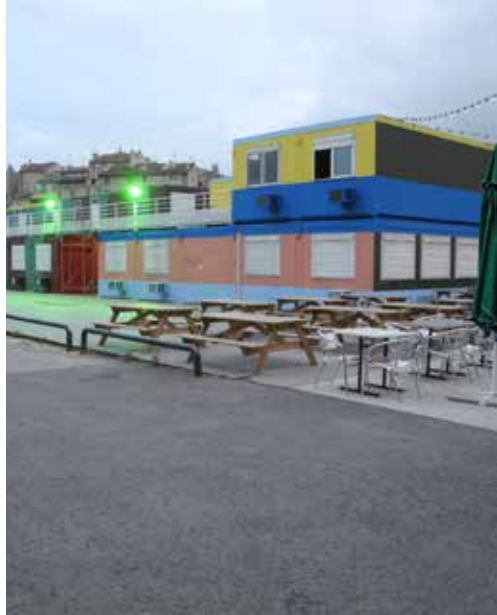


Fig. 3 , Fig. 4 Marsiglia: la Friche de La Belle De Mai. Detail of a building and entrance to the area (photo of the author)



### **City densification**

The concept of urban density has radically changed over the last few decades. The extended city has always been synonymous with living quality. Now, on the contrary, we have realized that density is more sustainable from the energy point of view and also from the point of view of social relations among citizens. Densification can occur horizontally, but also vertically.

The so-called up-grading of buildings, thanks also to the new constructive construction techniques, is increasingly widespread.

If it is better that the city develops vertically or horizontally it is an obsolete and uninteresting discussion. As for the density, it has already been said. The rest relates to safety-related facts, memories of twin towers are still alive, and questions of principle, especially related to the widespread conception that is unnatural for man to dwell in the skies. It is true that what matters is the quality of the space at the base of the buildings, that public space that forms the plot where citizens' sociality finds civic satisfaction and personal enjoyment.

The tall city, however, is inevitably what the future will hold, as a consequence of the constant rise of the world population. In about twenty years it is expected that the population of cities will rise by two and a half billion units, the number of megalopolis will rise from the current sixteen to twenty and perhaps more.

This sometimes uncontrollable increase will almost certainly lead problems to transportation and services and will certainly create room for expansion of urban tissue. This will also result in an increase in violence and fear, real or perceived.

### **Urban Therapies and Tactical Urbanism**

Acupuncture metaphor within urban metabolism moves the first steps in Barcelona in the 1990s and represents the exact opposite of Bilbao's syndrome. In Barcelona, hundreds of small and large interventions have revitalized urban spaces; on one hand, the Guggenheim Museum by Frank Gehry has made the city one of the most visited in the world. To regenerate a city, it is necessary to act on multiple fronts, from small interstitial spaces to major emergencies that polarize the attention of citizens and visitors. As in the human body, all parts are important for living well. Sometimes the lack of an element that seems unimportant can have serious implications: without a thumb we have no difficulty in grasping the objects; without a toe we have difficulty standing up in balance. The same thing happens in the metabolism of the city, according to the holistic concept that controls the life of humanity.

Tactical Urbanism, guerilla urbanism, pop-up urbanism try to give a temporary solution to the lack of an important urban element.

### **Temporary Space, Third Landscape and Maintenance**

Cities are, increasingly, full of abandoned spaces. This phenomenon has been going on for decades. It is growing. In fact, military, commercial and infrastructural ones have been added to industrial areas. If only the factories were to be abandoned, after the fall of the Berlin Wall a huge amount of military sites became unused. The abandoned spaces are so many that it is unthinkable to hope to find a new use for everyone. Sometimes you have to get to the demolition or abandon. Nature can go back to taking over: a kind of natural maintenance of unused spaces.

A good indicator of the state of health of a city is the quality of maintenance of greenery and roads. If we want to use a paradox, we could say that the concretization of the Third Landscape, theorized by French agronomist Gilles Clement in his famous Manifeste, is at times crucial to the inability of man to protect his anthropic intervention.



*Fig. 5, Fig. 6 Marsiglia: il FRAC, nuova sede dei Fonds Régional d'Art Contemporain. Building, designed by Kengo Kuma, in the dense urban context and view of the entrance (photo of the author)*

### **Unfinished city**

Italy certainly holds the world record of unfinished works: hospitals, sports centers, and all kinds of infrastructures. A recent research carried out by Legambiente has highlighted a disastrous situation, both qualitatively and quantitatively. A tidal wave of resources wasted in spaces that are not only useless, but contaminate and infect the surrounding environment as a disease that raises anger and impotence in the citizen. According to a survey by the Association of Consumers Codacons, which is based on the data of the Registry of the works of the Ministry of Infrastructure, the major unfinished public buildings in Italy are now almost a thousand, most of which are located in southern Italy. It was estimated that the cost for each Italian family is on average about 200 euros. The over four billion euros wasted could have represented a great resource for citizens in terms of quality of life and living in general. Resources that could have been used to build new and functioning parts of cities.

### **Mixité and creativity**

A survey conducted by ANCE, the Association of Building Companies, and by European House-Ambrosetti in 2005, called The Cities of Creatives, explains the relationship between creativity and other indicators: tolerance, welcome, number of spoken languages, The ease of starting an activity, the social mix. According to research, advisor Richard Florida, an american urban studies theorist, London is the most creative city, along with New York, Shanghai and Tokyo. is The first italian city in terms of creativity is Milan.

### **Fear**

Fear is a feeling that is increasingly widespread among the inhabitants of the cities. Citizens are afraid of crime, immigrants, air pollution, and vehicular traffic. Social disruption fueled violence, which increases fear, which changes the use of the city, which becomes a prison from which, at times, it is necessary to flee. Paul Virilio called it the panic-city, identifying those parts of cities where the perception of violence and overwhelmingness is superior to any other sentiment. A city in which a citizen can not live happy; a citizen, pessimistic and depressed, who will probably contribute to the negative trend of social life.

### **Dromologie and dynamic space perception**

French philosopher and urbanist Paul Virilio has also created another neologism: dromologie. With this term he wants to demonstrate that the perception of space, city and environment has profoundly changed in relation to the increased speed of movement. This also involved modifying the communication modes within the places and the hierarchical importance of the elements of urban space.

### Sustainable liquid tourism

The concept of tourism has changed. From mass tourism, characterized by the offer, it has gone to niche tourism, which starts from the demand of individuals. From many in a few places to few in many places. A sort of tourist liquidity that Bauman could have theorized from his original sociological point of view.

Some places, especially cities, resist the escape of tourists. For example Venice is a city that lives almost exclusively for tourists; over thirty million per year, periodically we talk about entering the programmed number. Many cities are invaded by tourists who interfere with the real life of citizens; the excellent urban policy of the last few decades has brought Barcelona to a state of emergency. An invasion of tourists who is likely to have a negative impact on daily metabolism.

In Italy, an incentive, and at the same time a limitation, is the high-speed rail network. Massive investments that have transformed some Italian cities into inevitable poles; others in unreachable poles. It is the phenomenon of polarization that characterizes much of the social conditions: richer vs. poorer; the most educated vs. the most ignorant; more accessible or less accessible. Some cities have seen greatly increase the tourist inflow; for others, infrastructure isolation began.



Fig. 7, Fig. 8 Marsiglia: il Porto Vecchio. View of the shelter designed by Norman Foster and a temporary installation (photo of the author)

### Urban nomadism

One of the most influential changes in contemporary society is the ease of movement in terms of cost and speed. This growing planetary nomadism, however, has to deal with new home-related illnesses with tips that can overcome depression and refusal, or impossibility, of integration. All this happens despite social media, such as Facebook or Skype, tend to cancel the perception of distances. Obviously nomadism also produces positive effects both in terms of sharing society and in those involving the creation of very interesting social mixes.

The lack of harmonization of this mixture of cultures, jobs and destinations was one of the major causes of the degradation of marginal parts of cities and suburbs.

### Pollution and living comfort

The problem of pollution has changed the image, the perceived housing status and the quality of life in the city. As well as the quality of living comfort. The use of innovative technologies for the production of renewable energy and communication has led to the invasion of urban spaces of photovoltaic cells, wind generators, heat pumps, solar thermal panels, parabolas, antennas, columns for recharging electric vehicles, bicycle paths, traffic busters. The need for greater interior comfort has resulted in increased heat and noise in the urban atmosphere, day and night.

## **24 hours society**

Colonize the night? Herodotus tells the story of the Egyptian pharaoh who, knowing that he would only have six years of life, ordered to turn fires in and around his palace to change night in the day. So his years would have turned six to twelve, with doubling time from night-time retrieval. Life was identified with day and light. The night, or at least a good part of it that coincided with sleep, was not considered part of life. Living the night meant living more. Nowadays, the city is crowded with people who, like the Pharaoh, are struggling to lengthen their lives through the night. It has become a struggle against time; A famous advertisement identified him as the stress of modern life. The 24 Hours Society is the title of a book published in London in 1999. The author is Leon Kreitzman, training biochemist, journalist and visiting professor at the Nuffield Health Center at Oxford University; His research is based specifically on the scientific knowledge of biological rhythms, with particular attention to their social implications. In summary he is interested in the relationship between biology and society and their influences on human behavior in relation to the circadian rhythms. After exploring the original and interesting studies of Kreitzman we can observe the city with different eyes and understand many of the things that are happening in these years and of which we are not always perfectly aware. Kreitzman, in his introduction to the book, writes: “ *The 24 hour city is a shorthand for a new way of organizing urban living that is more in keeping with the world of the twenty-first century than the one we are living behind. The cities of the future will be hubs in a global network, intimately connecting the solitary individual to the collective billions of the planet...By colonizing the night through the 24 Hour Society we cannot create time but we can provide the means to use the available time more effectively so that we can free ourselves from the coiled grip of the time squeeze*”.

## **Gross national happiness - GNH**

Daniel Kahneman is an economist, Nobel Prize in 2002, famous for his studies of the theory of happiness. Resuming the studies of Richard Easterlin he theorized that people's happiness depends very little on the variations in income and wealth. Happiness depends largely on sharing political choices, from human relationships with friends, from the equity of society in which they live, from belonging to a community, from respect for institutions and citizens. It is understood that the city is the main catalyst for happiness or unhappiness, because all the elements that determine the serenity of man live in the city.

## **Homo Consumer vs Decent city**

What can we hope for the city of the future? We hope that metabolism will make the city well-developed, with an acceptable quality, as Avishai Margalit says, of life. It will be the task of the homo consumer, so it has been defined by Zygmunt Bauman, to find the right balance between his needs and those of other men to ensure a happy survival of the great man's house, the city.

## **Conclusion**

The historic city, despite recent and sudden transformations, perhaps for these reasons, is certainly still the place where the quality of life of the citizen is higher and more interesting. Tradition and innovation, past and future, culture and business, democracy and participation, human rights and sharing, acceptance and tolerance, are all inalienable binomial, on which the history of humanity is based.

History of humanity in which the city is still and will always be the place for progress of human activities, increasingly directed towards the development of justice, equity and sustainability.



*Fig. 9 Marsiglia: View from the castle of MuCem, Museum of Civilization of Europe and the Mediterranean, designed by Rudy Ricciotti (photo of the author)*



*Fig. 10 Marsiglia: MuCem, Museum of Civilizations of Europe and the Mediterranean. View of the bar located on the roof of the building (photo of the author)*

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# **From the Measure to the Contemporary Project of Re-use. Palazzo Vernazza at Castrì di Lecce, a case-study**

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## **Abstract**

The aim of the study on the Palazzo Vernazza at Castrì is to propose and test a method for the project of regeneration, partial reconstruction, reuse of historical buildings and its appurtenances. The method should be applicable to the various scales and could start from the analysis of the primary compositional geometries, becoming memories of the contemporary project of re-use. From what remains, the survey and the analysis of ruined or abandoned historical buildings turn out to the starting point of a research on the “exact measure” upon which modulating contemporary interventions.

Survey and design contribute to this study on the main compositional principles of the buildings, as well as to their graphic transcription as a product of the “rewriting” and decoding of the architectural conceptual and functional program, and of the related underlying rules, which become the result of a disciplinary synthesis.

The comprehension of the original conceptual framework is therefore proposed as a key to understand the historical continuity no longer in terms of style or imitative approaches, or even in a pure restoration methodology, as the only solution to recover buildings and urban historical areas. The proposed method allows a contemporary approach to the project for which the assumption of the prime “tracés régulateurs”, no longer visible in figurative terms, is perceptible at an unconscious level as “correct” because it is based on a scientific-mathematical rule, as an inferred measure, and an unveiled geometry.

The survey, the metric analysis and the projects here presented are the result of this experimental case study research that will take in the next year two additional case studies in the same geographic area.

## **Introduction**

When buildings were abandoned, the process of destruction is often uncomplete. Citizens, architects and politicians have to face two possibilities: demolition and new constructions, or to consider a renovation. It depends on the culture of the place and on the historical importance of the building. A specific aspect of the conservation of ancient buildings is the rehabilitation through sustainable intervention of re-use, considering the new project as part of the living process of the building itself. Another point is that because their structure tends to outlive their function, buildings have continuously been adapted to new uses, a fact that is enabled generation after generation to derive a sense of continuity and stability to their physical surroundings.

The “shape of continuity” could be considered the aim of the present study. Questions about the method to achieve a correct approach to the project, in which new and old co-exist in a design process - exceeding the consolidated restoration practice - are needed. The possible answers will come through the analysis of the primary compositional geometries deduced in the field of a comparative survey, becoming memories of the contemporary project of re-use.

This method has been tested during the multidisciplinary degree workshop, held last year in Castri di Lecce. Twenty-five students of the faculty of Architecture of Sapienza were guests of the town of Castri for a survey campaign of Palazzo Vernazza, the case-study here presented. The study of the survey and the adoption of the historical unit of measure have been the subject and the conceptual basis of some projects that propose possible new uses of the building according to the new demands of the economic and social system, in the historical context, which today lives a new season of rebirth. Mostly in those parts of Italian land, rich of minor historic towns, heritage care goes through the refiguration of new life cycles for sites and buildings.

## **Beginning from what remains: history, survey and metric analysis (G.M.)**

### *History*

The Palazzo Ducale Vernazza is situated at Castri di Lecce, a little town far from the provincial capital of Lecce about 13 km. There are not many historical documents and the few existing ones concerning the territory report that in 1190 Castri was donated to the Church of Lecce by the Norman Count Tancredi d'Altavilla. In 1262, this land was divided into two, Castrifrancone and Castriguarino, and sold, the first one to Olivi De Lettere and the latter to the Bonsecolo family. In 1302, the Bonescolo family ownership passed to Agostino Guarino from whom the name of Castriguarino was inferred.

Later, in 1353, the lands of Castrifrancone passed from the De Lettere family to the Neapolitans Frantone and, over time, to various local noble ancestries such as Dell'Acaya, Valentines, Grimaldi, Mattei and Cicala. Since 1709, both the stocks were sold to Andrea Vernazza remaining distinct units until 1891 when, by Royal Decree, the division was abolished and the aggregation proceeded under one single property.

The Palace, later called Vernazza, was probably built between 1600 and 1630 incorporating a pre-existence on the south side. In the same years, in the nearby town of Pisignano, the Baronale Palace of the Counts Severini Romano was in construction. It is the same characteristics as that of Castri di Lecce: the two portals are very similar (Fig.1) and the planimetric composition of the main floor shows many similarities<sup>1</sup>. If the two portals are examined in the detail, it is possible to remark some differences: in that of Castri the portal is richer and refined in decoration. The little banisters of the balcony at Castri are rounded section and elegantly beaded, that of Pisignano are squared, with a rounded generatrix creating decorated surfaces. The rusticated ashlar of the buttresses defining the lateral sides of the portal are the same. The arc at the first floor is supported on shelves with the same molding but different decoration. At the first floor the part of the wall, framed by the arc, and the buttresses in the Pisignano palace, is rusticated, on the contrary in Castri is a smooth surface. Overall, Pisignano's balconied portal is the same in the structure but with a series of simplified decorations, nevertheless the quality itself of the balcony denotes that among the two, that of Pisignano would be later. The planimetric path of the two Palaces is very similar; in fact, the staircase leading to the noble plan is situated in the same position, with the same characteristics. In both cases, just entered into the hall, a bow on the right gives access to this staircase to an open loggia that leads from which opens to the central hall.

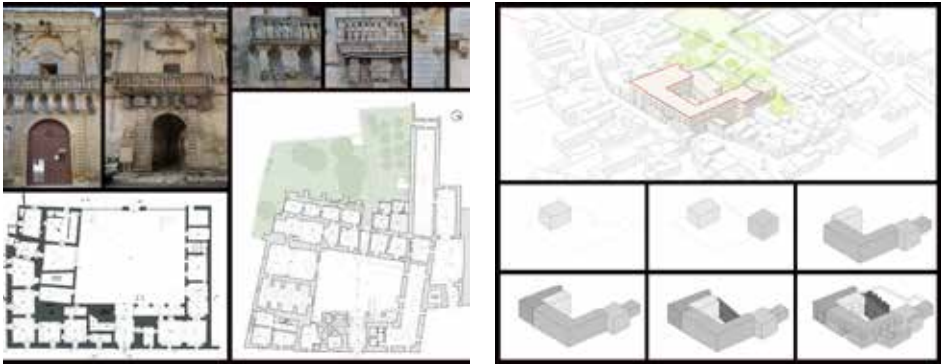
<sup>1</sup> For more details, see: G. Mele, F. Rovo, *Il rilievo e l'analisi come strumenti guida per il riuso del palazzo baronale di Pisignano (Le)*, in *Disegnare Con*, Vol 8, N° 14 (2015), a cura di G. Carbonara, M. Centofanti, R. Mingucci, *Disegno per il restauro: oltre il rilievo*, ISSN 1828 5961



In Castrì the loggia was filled up during the 20th century, but the remains of the portal, which in the seventeenth century were roofed and not vaulted, are still visible.

The path of the ground floor as well is similarly proportioned in the two case studies and the openings are located in the same position. (Fig. 1)

The architect Francesco Manuli is the author of the design of the palace of Pisignano and most likely it is also of that of Castrì di Lecce. Despite the scarcity of documents, it is thanks to the comparative analysis between the structure built in Pisignano and the one built in Castrì that we can date back to the construction period of the first phase of the the palace built to house the Castriguarino's property. As reported by the sources<sup>2</sup>, between 1584 and 1615<sup>3</sup>, Castrignano's farmhouse was property of the Baron Antonio Francesco dell'Acaya<sup>4</sup> and, maybe, he commissioned the construction of the Palace. The Palace of Pisignano was instead incomplete because of Francis's Severini death, happened in 1635. Therefore, if the hypothesis derived from the comparative analysis is correct, the palace in Castriguarino was the first to be drawn by Manuli; otherwise, we can safely say that between 1630 and 1635 the two buildings were already in an advanced stage of their construction and one, that of Castrì, certainly completed.



*Fig.1 The first two images illustrate a comparison between the architectural elements of the portals with the superimposed balcony in Pisignano Baronale palace of and Castrì di Lecce Ducale palace. In the second pair of images, we see the difference between the squared and rounded banisters of the two case studies. In the third, the comparison between the two shelves. In the fourth, the comparison between the ground floor plans of the palace of Pisignano and that of Castrì di Lecce. Fig.2 The first image illustrates the volumetric difference between the Vernazza Palace and the rest of the ancient center. The following pictures show the various constructive phases of the Ducal palace of Castrì.*

The “castrìota” building undergoes a radical transformation in 1724, a few years after the acquisition of the two properties by Andrea Vernazza in 1709. The dating of this stage of works is testified by the dating marked under the emblem at the central window. In this phase, all the vaulted roofings at the first floor have probably been realized, as well as the extension of the west wing of the building, with the consequent enlargement of the main façade (Fig. 2), and the replacement of the previous emblems with those of the Vernazza family. Margoleo brothers<sup>5</sup> from Martano carried out this work. The spaces built to increase the service area, close the courtyard at the back of the building belong to a later stage. Some volumes with vaulted roofs, facing directly on the garden,

<sup>2</sup> See M. De Marco, *Castrì di Lecce*, Capone editore, Lecce, 1985.

<sup>3</sup> In 1615, the fief was sold at auction and purchased by Giovanni Cicala who already owned Castrifrancone.

<sup>4</sup> Antonio Francesco was the grandson of Baron Gian Giacomo of Acaya's brother, a military architect of the reign of Naples.

<sup>5</sup> A.S. Lecce, Notary Act of 24.02.1735, drawn up by Notary Domenico Verdoscia and Niccolò Saverio Tarantino, in the case of a dispute for the payment of some work done by the brothers Margoleo di Martano at the palace Vernazza.

were added later (Fig. 2). The last phase of changings is related to 1924 when the building is turned to a tobacco factory. During this period, various changes were made mainly due to the new use. The current owners are Giovanni and Elena Pranzo Zaccaria from Lecce, the grandchildren of one of the members of the tobacco factory in which more than 300 tobaccos workwomen worked. The activity lasted until 1971 and then was rented as a tobacco store from 1971 to 1980. Now the palace is in a state of neglect and the municipality of Castri, together with the actual owners, intend to draw up funding to give a new use and life to the symbol of the “Castriota” community.

### Survey

The survey campaign was not without difficulty. Retrieving the basic information to approach a prior historical-chronological knowledge of the building has been very poor of results because of the low interest of historiography on the minor centers of Salento.

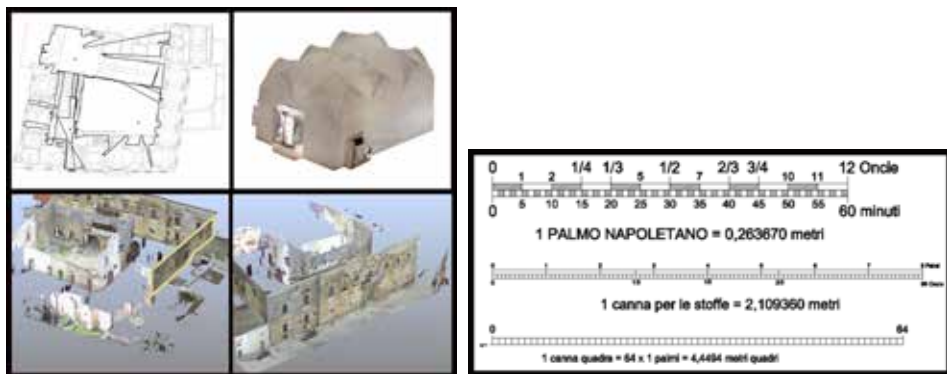


Fig.3 Top, left: the image of the survey restitution carried out with 3D laser distance sensor. Top, right: The three-dimensional photogrammetry performed for each interior of the ducal palace of Castri. Bottom: the survey model of the exteriors obtained with 3D Laser Scanner. Fig.4 Palmo Napoletano metric structure of with its multiples and submultiples.

The aim of the architectural survey is to transform it into information on the physical, formal and functional data of the present state of the art, analyzed and classified. Traditional and innovative methods for the survey of historical architectures, took place in a careful and coordinated work directed to the scientific description, and therefore the knowledge, of the architectural artifact.

The aim was to develop a computerized scientific model that can be implemented in its information with further details that allows useful descriptions, not only for restoration programs, but also for new projects. Such a detailed informational document is by itself a knowledge-based operation. The integration of the various survey methods, manual and instrumental, have been essential for the preparation of a prime database. The CAD modeling deriving from the survey requires an accurate level of precision in the measurement phase of the data collection, followed by a careful data restitution combined with the correct compensation of that dimensions containing possible greater error. The data restitution was performed in various digital formats selected respect to the more appropriate to the purpose of the survey, with CAD drawings and raster images. The latter, digital orthophotos, have the purpose of basic documentation. It can be used both for the elaboration of thematic maps on the conservation status of the building and for the identification of its historical phases, as well as for all other types of more specific and specialized arguments related to the image and measurement. The possibilities to handle promptly the information allows the operator to conceive more convenient and suitable solutions. In this sense, the new tools for the three-dimensional survey, the 3D laser spacer, the 3D Laser Scanner with its dedicated

software and three-dimensional photogrammetry are making the use of the image as a measuring instrument increasingly widespread. These computer programs relate the three-dimensional shape to the photographic image by obtaining from these three-dimensional points and mesh surfaces that can be investigated to detect any cuts or deformations that with traditional instruments would be difficult to measure.

In the specific case of Castrì di Lecce palace, the orthophotos of the main elevation, of lateral elevation and sections were obtained by processing the different scans to obtain a points cloud around the outside of the building (Fig. 3). The interiors of each room were surveyed, on the other hand, with the three-dimensional photogrammetry to obtain, in each room, a three-dimensional model that clarified the genesis of the shape of the vaulted surfaces and to better evidence the present state of degradation of the walls. (Fig. 3).

Alongside the indisputable evidence of the usefulness of this survey method characterized by high metric quality, there is another aspect under which it appears to be of particular interest, useful to confirm or modify previous information about the origins of the building.

The analysis of the survey shows outcomes that, by studying the geometric features underlying the drawing, give rise to useful speculative hypotheses to formulate reuse project hypothesis.

### Metric Analysis

Analyzing a model deriving from the survey, with the aim of establishing the possible project method used by the *caput magister operis*, means to start from the real model measurements, expressed in meters, and transform them into the historic metric units used at that time. Then, we obtain quantities to be studied, in terms of the geometric meaning, and to be explained according to a logical-scientific line of reasoning, to define and explain the shape and size of the investigated object. The metric analysis of the survey, in plan and sections, shows a particular use of the historic unit of measurements, the Palmo Napoletano<sup>6</sup> (26,3670 cm) with multiples and submultiples (Fig. 4).

The multiples of this metric unit support the arithmetic-geometric explanation that led to precise formal choices. To understand this compositional language, was essential to identify a square grid 1x1 Palmi Napoletani, to overlap it on the survey drawing, so to find the numbers that tie shape and size. From the analysis we identified a 52x52 Palmi Neapolitan square module (6,5x6,5 canne, that is reeds) that explains all the “compositio” of the plan and of the façade of the palace. The main façade, nowadays, measures 46.93 meters = 177.9876, approximately equal to 178 Palmi Napoletani. This is the result of the analysis conducted on the right side of the main façade, starting from the axis placed in the middle of the portal, which we consider, for the present study, as the axis of symmetry of the elevation of the building, prior to enlargement of 1724.

The right side of the façade, measured from the axis of the portal to the corner, is 16.61 meters = 63 Palmi Neapolitans (53 + 11 = 63) (Fig. 5 Scheme A). The main front of the palace, before 1724, symmetrically conceived with respect to the axis of the portal, has a theoretical measure of approximately 32.22 m., equal to 126 Palmi Neapolitans. Before 1700, it was composed of two squares 52x52 palmi plus two final elements 11x52 palmi. During the modernization work in 1724, the façade was prolonged to another square of 52x52 palmi. To highlight enlargement and preserve the design of the main façade, while not avoiding alterations, the architect moves back the plan of the façade in enlargement approximately 0.50 meters (Fig. 5 Scheme B).

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<sup>6</sup>Neapolitan Span.

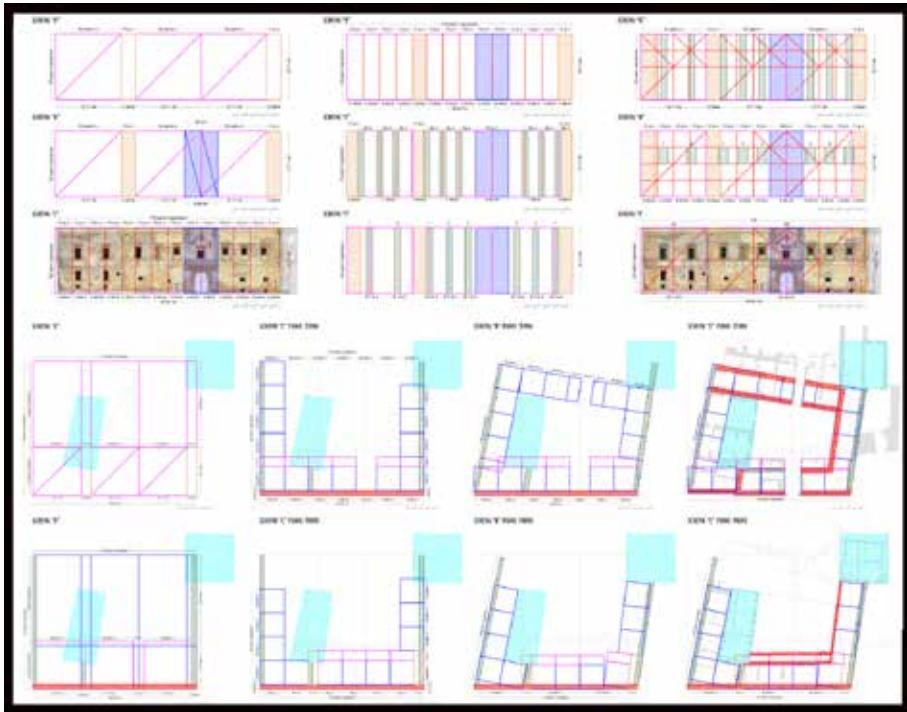


Fig.5 Geometric layout related to the ducal palace of Castrì elevation and plans illustrating that the basic module is the square of  $52 \times 52$  Palmi Napoletani, with its submultiple of  $26 \times 26$  Palmi Napoletani.

If we trace the vertical medians of the squares, we get 12 rectangles  $13 \times 52$  p., useful to locate the position of the windows (Fig. 5 Scheme C). The composition of the portal with the balcony lies in a rectangle, symmetrically positioned on the axis of  $26 \times 52$  palmi (blu rectangle Scheme B). The windows, contained in a rectangle of  $5 \times 52$  p, should have been placed one on each side along the rectangles of  $13 \times 52$  p; in this way however, the crossing of the last window with the space dedicated to the final elements would occur. (Fig. 5 Scheme E). To solve the problem, the architect redistributed the amount of crossing area by producing two adjustments (Fig. 5 Scheme F). The heights of the first floor windows are obtained starting from the rectangle of  $26 \times 52$  p., divided into two parts with respect to the major side, as to obtain the bottom edge of the windows. The middle of the upper square of  $26 \times 26$  p. determines the upper height (Fig. 5 Scheme H). The design of the plan is based on the same module of the façade. A body and two lateral arms that enclose the courtyard, whose entrance is through a portal leading into an entrance compartment, characterize the scheme of the palace, in plan. Longitudinally, the main body of the building is composed by the same scheme of the elevation that is two squares of  $52 \times 52$  p and two rectangles of  $11 \times 52$  p. at the extremity. The lateral arms are composed of a square of  $52 \times 52$  p, added to a rectangle of proportion L: L root of 2, ( $52 \times 94$ p)(Fig. 5 Scheme I).

The size of the lateral bodies is related to a pre-existence that had to be incorporated into the building, currently falling within the left arm. The presence of this pre-existence derives from the current structure of the palace undergoing rotations to connect to the two existing bodies. The wall thickness of the main façade is  $5 + 1/2$  p (1.35 mt) while the thickness of the outer sidewalls is

$3 + 1/2 p$  (0.94 mt) (Fig. 5 Scheme L). The subdivision of the internal compartments is obtained by considering as a module  $1/4$  of the square equal to  $26 \times 26$  palmi. The size of the rectangular compartments behind the rooms is generated by subtracting from the rectangle L: L root of two, the square of side equal to L, with  $L = 26$  palmi (Fig. 5 Schemes M, N). The question on which this experiment is based, is related to the use of the metric analysis, and the geometric patterns derived from it, to give continuity to a new design of the palace, in order to assume new functions as needed. If it is true that the architect is the guardian and interpreter of the existent, then what should be the attitude he should take about the recovery of this kind of monument? How can the drawing deriving from the survey be useful? What can geometric matrix research support? The idea that the history of the building becomes the project guide for its development has a sort of poetic value in continuity with the ancient texts, in a way it consists to investigate the history to obtain the correct drawing of the ancient project as well as the new, starting from the geometric patterns that generated it. The use of the drawing in the matter of our research and construction of these geometric schemes is at the basis of a hypothesis to structure a theory of design aimed to acknowledge the historic project philosophy basing the new on the same assumptions. The starting point of the experiment on the palazzo Vernazza is to attribute a sort of cultural heritage to the geometry of the square as the generating motif to intervene on a historical monument with new design hypothesis.

### **Recycling what remains: the project starting from the measure (A.C.)**

*“All things get lost, but not every part of everything, at least not at the same time”*  
(Paul Auster, In the Country of Last Things, New York 1987)

The history of places always has ancient roots, coincides with the history of man-made modifications, and goes together with the cultural and political choices of nations. Things and places change and, naturally, perish and rebirth according to voluntary human actions and the life of the buildings proceeds to shots.

Demiurge Architects, builders of buildings, have always played a significant role in the development of cultures, a process which has gradually also inserted into the field of Architecture the minor art of construction. After the industrial revolution, the individual as a subject occupying the physical spaces of daily living has gained visibility in the underlining of differences. He lives in a universe far different from the monumental and representative one of the mansion, church, or nobility. It is therefore to the minor architecture, in particular in recent decades, that is submitted the role of making visible the changing of the city and of the landscape. In fact, in the Western world in particular, the worship of the ancient and its conservation as a witness to the high culture of the past, admitted to restoration work on what that history had sworn as a value and instead granted demolition operations or overlay on the rest of the built environment, but a new culture that derives from the need to prevent soil consumption and the awareness that what is not being used is wasting and dying, have adopted the reuse strategy as a resource. Even before the assumption of the preservation of aesthetic values, an ethical judgment and the will to save the memory prevailed, even though modification and rewriting, partial demolitions and adaptations of various kinds. However, these interventions have always identified the new needs of local communities and the common desire not to erase the past, nor to hinder them from nostalgic and unreasonable pure conservation interventions that have led too often to a sort of “musealization” of historic centers. Part of this field of study, for example, is the difficult condition of Venice<sup>7</sup>, telling us of the gradual removal of its citizens, stormed by an extraordinary number of tourists who just visit it as an open-air exhibition.

<sup>7</sup>We will discuss later on about it for the very fancy range of intervention on its particular historical fabric.

This also, in hindsight, is a new use of the city, which, though not intervening on the single historic building, and even adopting a pure conservation approach, has nevertheless produced a strong modification of the city, a transformation of the rhythms of life and of the dynamics of population. We are witnessing a paradox and an inversion between obsessive care of the ancient and post-contemporary lifestyle. In this research, we have also thought on such issues to identify appropriate new uses of the building, urged by the local community asking for it, to be included in the process of building change.



Fig.6 Michela Cerilli, the new civic center and Town Hall of Castri di Lecce for the reuse of Palazzo Vernazza: the squared grid generates a doubling of the court and a tight dialogue between the original volume and the new one. Fig.7 Silvia Martella, Advanced training center project for the reuse of Palazzo Vernazza: the original measure generates four blocks of unequal height that characterize and restore order to the entire complex.

Within the selection of the case studies, the topic of reuse has become part of a contemporary global rethink on recycle strategies. Initially the design experimentation selected abandoned industrial spaces, risen to the role of modern archeology, or forgotten degraded landscapes, that time has first quickly submitted to abandonment and then to their redemption thanks to an architectural design strategy. Working on the new, quickly become old, is more reassuring than dare to put hand to the historic heritage. The architectural project thus become a guarantee of the improvement of the quality of the industrial building, which was however assigned a lower value than the “high” architecture of churches and palaces, but even works of a more remote past are subject to new uses, inevitably, sometimes, through light, continuous minimal change. Or else changings can be sudden and unexpected. The causes can be diverse, so not all attributable to the philosophical-scientific observation according to which *Tout va par degrés dans la nature, et rien par saut*<sup>8</sup>, confirmed in Linneo’s “*Philosophia botanica*” (1751), which in chapter 27 states that: *natura non facit saltus*. The compositional method thus commit to a sort of determinism that looks at nature and contexts to know its rules and language and to replicate them. In search of the “form of continuity”, geometry and measurement relies on the task of shaping the new, based on the old. As a genetic heritage, a renewed measurement, which is not in appearance and matter, but in its internal structure, will be the bearer of logical continuity.

<sup>8</sup> G. W. Leibniz, *Nouveaux essais* (1704) IV, 16, 12.



*Fig.8 Domenico Nardi, School of Design project for the reuse of Palazzo Vernazza: the 26x26 Palmi Napoletani module re-draws the outer space of the garden, the new volumes, and, subdivided into a pattern of sub-modules re-draws the horizontal and vertical surfaces in an isomorphic.*

### Exactness

Exactness, or precision, in terms of correspondence with the model.

It is the object of architectural research to find the measure of things. The divine proportion<sup>9</sup> is nothing more than the application of a rule that relates harmonic dimensions, guarantee of beauty, with the geometry of the continuum, those recurring in all natural forms and in the living organisms. Le Corbusier's Modulor, while sinking its roots in the Renaissance tradition that combined beauty, justice and divinity, is an absolute, practical and consolidated system of measurements. When relationships between dimensions become aesthetic canons, the concept underlies the project. Therefore, the ratio among dimensions transforms the measuring system into an absolute value. The term value is here intended as quantity, therefore inherently without ethical or aesthetic judgment, but what is absolute contains in itself the notion of quality. The expression "absolute value" may have a double antithetical meaning: the one that does not contain aesthetic judgment, as taken unsigned quantity neither positive nor negative, represents a number, an entity in itself; and the one completely belonging to the field of aesthetics, if the meaning is what is highly worthy. The theoretical aspect of the problem, as mentioned above, is not new. As we have seen in the survey and metric analysis of the palace of Castri, we find an anthropometric unit<sup>10</sup>, which is the basis of the composition of the façade and of the cubic modules. Similarly, well-known examples of Italian and European history of architecture have adopted the golden ratio and the Fibonacci sequence to harmonize the architectural project.

<sup>9</sup> Or Golden Mean, or any of those geometrical relationships among numbers.

<sup>10</sup> As anthropometric we can consider it also deriving from Nature.

In recent times, more than the aesthetic aspect prevailed the ethical one in which “exact” is just “right”. Paradoxically it can be said that Le Corbusier was closer to those who attributed an aesthetic value to the “exact measure”, than the Italian architects who published *Verso la casa esatta* (Towards the exact house), the manual which in 1945 became the guiding collection of principles for the realization of the Great Reconstruction after the Second world war. Le Corbusier, when conceived the Modulor (Golden Module) paraphrased the *nombre d'or*, that is, the golden section, from which he derived his system, set up in the two red and blue series of human measures. Similarly, Adalberto Libera developed *La Tecnica funzionale dell'alloggio*, starting with the measurement of the primary elements of the human body and of the common objects of the daylife. The first, however, laid down in the “good result of the numbers” a role of harmonization, the second, determined a correspondence between the analytical data provided by the study of the human body and the real value of the project. The “exact measure” for an “exact home” originated from the study of human measures and in fact we can read on the cover of the text published in 1945, edited by Pietro Giulio Bosio, Adalberto Libera, Gio Ponti, Pierangelo Pozzi, Eugenio Soncini, Giuseppe Vaccaro, Carlo Villa, Guido Beretta: *Towards the exact dimensions of normal homes. Towards the exact depth of the buildings and the use of ready and prefabricated horizontal elements. (...) towards the exact dimensions of the environments. Towards the exact dimensions and the most economical procedures of the structures*<sup>11</sup>. Everything is reduced to the human dimension.

### Contemporaneity

One of the first goals of the research is to build an articulated framework of knowledge around the theme of Palazzo Vernazza, as part of the more general theme of reuse, an inescapable practice in the universe of Horizon 2020 goals, which calls for sustainability in every respect: that of consumption and regard for the environment, but also that of economic consistency with the process of transformation of the urban environment, which cannot fail to go through the recycling process of sites and buildings. Reuse, and therefore generally recycling, means to prefigure new urban opportunities starting, as said, from what remains, even in relation to possible ruin-buildings to be considered as resources and not waste. Reuse involves a collection of theoretical and practical knowledge and cultures, and a catalog of possible interventions, from the most invasive to the almost mimetic ones, as well as a thinking on the peculiarities of the contemporary project. These questions are the basis of our study, which therefore adopts a method, a relative system linked to an absolute value, in order to obtain a contemporary image of the project in the name of the historical continuity.

In the Italian territory, rich in history, minor works of architecture play a central role in the strategy of recovering values and beauty. The analyzed interventions involve various types of reuse<sup>12</sup>: maximum freedom of design, with an exhibited heterogeneity of added volumes and dissonant materials respect to the existing ones; insertion of parts that are not immediately recognizable, as expression of a poetry that arises from a “light” reinterpretation of the historical architectural language. In our research, both positions, even in the completion of the project with its pertinence of open spaces, have been experimented with the historical measure. The de-sign that the contemporary project will establish with context and with pre-existence will be a “measured” project.

<sup>11</sup> AA.VV. *Verso la casa esatta*, ED\*IT Editrice italiana, “Ricostruzione / Unificazione”, Stab. Arti Grafiche Alfieri e Lacroix, Milano 1945 (a cura di Pietro Giulio Bosio, Adalberto Libera, Gio Ponti, Pierangelo Pozzi, Eugenio Soncini, Giuseppe Vaccaro, Carlo Villa, Guido Beretta)

<sup>12</sup> C. Canepari, V. Cioni, *Il riuso architettonico. Progetto e concetto*, Studio Editoriale Fiorentino, Firenze 1997, “I tipi di riuso architettonico” (Types of architectural reuse) pp 79-103.



## Examples

*I am a firm believer of the contemporary, but with the right measure*, Mario Botta said distancing himself from nostalgic and “macabre” forgeries, during the presentation of his project for the auditorium and the new entrance at Querini Stampalia in Venice. A renovation of main access with the addition of a contiguous space distribution space on the ground floor lasting 20 years: it consists in a small covered lobby that facilitates access to the auditorium, as an example of rewriting inside and on the ancient building, in the sign of Carlo Scarpa’s heritage. Before briefly illustrating some design experiments on the case study of Palazzo Vernazza, we would like to refer to a project that we consider as exemplar and archetypical with respect to the proposed method. The site is again Venice. The project is Le Corbusier’s Civil hospital in Cannaregio. The square module of 3.66 that defines the unit of care originated by the Modulor gives rise to the urban system of the building, which, raised on a pilot, had to leave the Venetian soil free and above to reproduce the pattern of “campi e calli” through light deviations of the paths from the strict orthogonal squared system and their constituent internal units. In these variations and in the empty space between the old town and the new city of human care, the project re-designs a new cycle of human life, a new layer, a discontinuity, a distance.

The projects for Palazzo Vernazza here presented therefore adopt the square and the Neapolitan palm of the ancient project as a *tracé régulateur*. In the School of Design project by Domenico Nardi (Fig. 8), the 26x26 palm module redraws the outer space of the garden into an alternate of paved and planted parts. It originates as well the new volumes and it is divided into a thread laying on the horizontal and vertical surfaces in an isomorphic way. In the project for the new civic center and Town Hall elaborated by Michela Cerilli (Fig. 6), the square grid generates a doubling of the court and a tight dialogue between the original volume and the new one, harmonized like a *Pas de deux*, strong in the gender diversity, and not for that in contrast. In the project for an advanced training center developed by Silvia Martella (Fig. 7) the original measure generates four blocks of unequal height that characterize and restore order to the entire complex.

## Conclusions

The idea that the history of the building becomes guidance of project is not without its own poetic value and the contribution of the drawing, in this sense, is to investigate the history of the project to find the geometric patterns that generated it. The use of drawing for the research and the construction of these schemes has, in the specific case, endorsed a theorization on the starting point for various hypotheses, in order not to betray the original design philosophy, as it is part of the same assumptions.

The assumption was to test a method that transfers the generator pattern of the square, to from the historical monument to the new project. The need to enhance the built environment, through the adaptation to new life cycles, becomes an opportunity for considerations on the exact measurement, the *tracé régulateurs* and on the meaning of designing in continuity with the history.

As architects, we are in search of something, theoretical but real, fundamental and material, that at the end of the design process must be tangible, physical, and lasting.

How to work on what remains is the center of research on the reuse of Palazzo Vernazza, intended as a synthesis of multidisciplinary actions.

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# The evolution of Genoa from the second part of XX century. The city of Fabrizio De Andrè meets contemporary migrations

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## Abstract

Genoa knew, as well as other town in Italy, a fast development during the Italian economic boom (1958-1963), marked by a great urbanization of the city. This phenomenon took the construction of new neighborhoods, the demolition of others in the early 70s, the fast improvement of the port in the 80s and changes in economic, political and territorial order.

It is also the era of great songwriters as Gino Paoli, Luigi Tenco and Fabrizio de Andrè who, with their music, described a Genoa with a particular attention to its neighborhoods and its people, places sometimes considered marginal and where often resided “the last ones”, like in the case of De Andrè.

Genoa changed its face for Expo 92, event that allowed the entire renovation and reorganization of the Old Port area, thanks to the Genoese architect Renzo Piano. The city also saw a migration from abroad, mainly from Africa and Latin America.

Actually foreigners in Genoa are about a tenth of the entire population and this paper wants to show, through an analysis of available official data, as they changed the traditional structures of the neighborhoods, their distribution in the urban areas, bringing colors, smells and flavours and also developing successful business activities.

Keywords: Genoa, urbanization, De Andrè, architecture, foreigners, migration.

## Introduction

*“In the districts where the sun of the good Lord  
gives not its rays,  
it already has too many commitments  
warming the people of other neighbourhoods.”*  
(Fabrizio De Andrè, The Old City)

This paper, using the available data provided by historians, geographers, public and private organizations, wants to frame the evolution of Genoa from the post-war period to the present, focusing on city planning, geographical, ethnic and social changes.

In fact, the social context is important as well the interest for the <<Old City>> and contemporary migrations.

The analysis starts from Italian economic boom, as a fulcrum for the development and urbanization of the “Superba”, with the construction of new neighbourhoods, also showing the negative side of the period, in other words the concreting or “rapallizzazione” of entire areas which caused issues

related to citizen safety, because many buildings were too close to Genoese rivers as Bisagno, Polcevera and related tributaries.

The building urge of the moment led to disastrous decisions such as the destruction of one of the historic districts of the city, “Via Madre di Dio”, as well as the abandonment of the “Old City” as a place lived by marginalised.

Fabrizio de Andrè, a leading figure of the Genoese School, told about the last ones, in a unique manner, where it mix respect, passion, life, poetry in describing the adventures of the inhabitants of the <<Old City>> with their passions, sometimes uncontrolled, the strengths and weaknesses.

Then the focus moves to the renovation and the Port, a springboard for the revival of the Jetty Area, mostly transformed thanks to the plans of the great Genoese architect Renzo Piano, who was in charge of the design for the Expo 1992, where it was launched the Aquarium of Genoa, the best known and most visited tourist site in the city.

From the late 90s onwards, the Ligurian capital became more and more crossroads for migrants of different ethnic groups and, before “the Old City”, then some municipalities as the West Centre and East Centre, took on the characteristics of a multi-ethnic and multi-confessional reality.

Currently foreigners in Genoa, messengers of new colours, visible from the shop signs that paint some streets, are about a tenth of the residents and the percentage increases when we speak about the enrollment in city schools.

This number obligates to reflections on municipal, regional, state and European host politics in fact, in the absence of integration programs and reforms, they risk becoming the new poor, new marginalized mentioned by De Andrè in his songs.

Likewise necessary is a basic teachers education about other cultures, basis to build dialogue at school, starting point of a real integration of migrants in the society.

### **Genoa during Italian economic miracle (1958-1963)**

The Italian economic boom, generally, was an historical period that went from 1958 to 1963, according to the definition accepted by contemporary historians. As underlined by the Italian academic Guido Crainz in his work “Storia del miracolo italiano” (History of Italian miracle), understand all the profound transformations that invested in those years the society of our country it is a daunting and complex assignment.

In fact, there was a profound break with the past: the great industrial development, thanks mainly to the growth that met the North Italy with Fiat in Turin, the emergence of the Port of Genoa as Italian and international reality, passing through the changes, even at psychological level, whose protagonists were the people like in the way of thinking, dreaming, living the present and planning the future.<sup>1</sup> Consumption grew enormously in those years and Italy began to talk about the society of mass consumption; the lifestyle, the services and merchandises usable by the community became standardized, promoting by television, which arrived at millions of houses until to influence the lifestyles with new products, targeted programs for modelling the identity of a country in constant and sudden transformation.

The most interested areas were Turin, Milan and Genoa, who formed the so-called “industrial triangle” and brought the arrival of many unemployed coming from the south in Liguria, Piedmont and Lombardy, looking for a job in the factories and in the port of Genoa. In fact, these regions saw almost redouble the population, in agreement with the overall rate of employment, in the end of 50s and early 60s. The wellbeing in the country can be measured nowadays through the analysis of several factors such as the growing up of automotive industry, iron and steel industry and distribution of electrical appliances, real revolution compared the past.

<sup>1</sup> G. Crainz, *Storia del miracolo italiano*, Donzelli Editore, Roma, 2003.

Do not forget the great expansion of supermarkets, especially in big cities: the introduction in Italy will bring many benefits to the population, but at the same time will cause the crisis of little shops that have difficulties to handle the competition with large distribution chains.

Like the historian Paul Ginsborg wrote, between 1958 and 1963 the rate of growth of Italian P.I.L. increased to 6.3%, such a high level that it was never reached in the history of Italy.<sup>2</sup>

The causes of the economic miracle are more than one: from the financial market, thanks to cheap price and high yield of government bonds that led to a great purchase, the establishment of MEC (European Common Market) in 1957 which provided the free movement of merchandise, people and capital in the Countries, the important role of the Italian state which expanded the construction of the motorway network. Italy also developed a stable policy with ENI and IRI, the two major companies of the energy market.

It is important to underline the technological growth of some strategic sectors such as iron and steel, chemical and engineering industry.

But the main factor for the development of our country was the high availability of cheap labour, thanks to the internal migration that caused a depopulation of the countryside and a movement of many people from the south of Peninsula towards the “industrial triangle”.

The state didn't control the phenomenon and this fact led to the born of several critical elements and imbalances in the country, as the sharpening of differences between north and south, the growing abandonment of agriculture in favour of the expansion of factories and industries, the persistence of a ruling class, especially in the public sector, as wrote Crainz, driven by conservative tendencies, also fed from the historical period crossed by the Cold War.<sup>3</sup>

Genoa was the protagonist, together to Milan and Turin, of this historical period, characterized by a strong intellectual fervour in the entire Italian territory, as well as by a sudden acceleration of industrial production and an improvement in production and consumption.

### **Genoa before and after economic miracle**

As the geographer Pietro Barozzi wrote “the Genoese urban structure descends largely from choices not always knowledgeable and often imposed by the characteristics of the place, which produced and accentuated significant functional imbalances. We can find the recent origin in 1926, when 19 surrounding municipalities became part of the city, without to be prepared with suitable instruments to dictate large development lines, for which the formation of the << great Genoa >> was rightly defined an urbanistic choice.”<sup>4</sup>

The 1926 was a very important year for the construction of the city as we know it today, in fact, they were annexed at the territory of Genoa municipalities before independent as Nervi, Sestri, Voltri, Borzoli, Quarto, Quinto, Bolzaneto, Sestri Ponente, Sampierdarena and others.

Curiously, talking with elderly, especially in Nervi and Sestri, the people often feel themselves like “Nerviesi” and “sestresi” and not Genoese, as to emphasize once more the ancient wrongs they have suffered caused by the fascist regime.

During the second World War the city was badly hit by the bombing that destroyed many buildings and properties; after the war a priority objective of the institutions was a reconstruction as quickly as possible. So the Municipality made many interventions in the <<Old City>>, sometimes not in line with the preservation and protection of the environment and citizens' intentions.

The main areas of work were two: Portoria, which involved the destruction of the ancient Doria Door (Porta Doria) and the demolition of the old hospital called “Pammatone”, where now there is

<sup>2</sup>P. Ginsborg, *Storia d'Italia dal dopoguerra ad oggi*, Einaudi, Torino, 1989.

<sup>3</sup>G. Crainz, *op.cit.*, Donzelli Editore, Roma, 2003.

<sup>4</sup>P. Barozzi, *Lineamenti dello Sviluppo urbano di Genova*, Ecig, Genova, 1988, p. 207.

the Tribunal, and Mother of God Street (Via Madre di Dio), as well as the surrounding area until the border with the district of Jetty (Sestriere del Molo).

The district of Portoria was replaced today by Piccapietra but the municipal order that made more stir was that relating to Mother of God (Via Madre di Dio), concluded in the early 70s. In fact, the demolition of the area was not a direct consequence of the bombing, but it was the implementation of a regulatory plan of 1957, which modified one of 1932.<sup>5</sup>

The residents were not consulted but placed in other districts of the city. Other ideas that considered a reorganization of the area were not taken into account; those projects provided for a maintaining the beauty of the historical sites, such as the native home of the violinist Niccolò Paganini, who lived in Passo Gattamora.<sup>6</sup>

Instead of the historic area they built a few buildings like the “Directional Centre” or “the Ligurian Centre”, which became headquarters of public and private institutions.

In addition, it was created a green area called “Gardens Baltimore” or “Plastic Gardens”, demonstrating the lack of affection that the Genoese have for the place. The green area became in the evening a place for criminals and addicted, cancelling so the spirit of renovation of the Municipality.



Fig.1. .Mother of Good Street (Via Madre di Dio), 1880. (Photo by G. Sciutto – Photographic Archive of Municipality of Genoa). Fig.2. the “Directional Centre” or “the Ligurian Centre” built instead of Via Madre di Dio. (Source: [https://commons.wikimedia.org/wiki/File:Centro\\_dei\\_Liguri\\_Genova.jpg](https://commons.wikimedia.org/wiki/File:Centro_dei_Liguri_Genova.jpg))

It's in these years that Genoa has further changed colour, where the brick was the lord, also because of the economic miracle and a great increase of population which led to an urban explosion, that the *Mass Media* judged irrational and disorderly.

Barozzi reported the data from 1936 to 1965 showing population in Genoa grew from 634.646 inhabitants to 848.000.<sup>7</sup> Data is interesting at the light of the fact that currently the residents are 580.000, then even fewer than in the 90s. the first areas that were interested by a copious

<sup>5</sup> We can find informations about the regulatory plan of the Municipaly at the website: <http://www.polis.unige.it/rco/rapu/pagine/schede/scheda%2034.htm>

<sup>6</sup> P. Barozzi, *op.cit.*, Ecig, Genova, 1988.

<sup>7</sup> P. Barozzi, *op.cit.*, Ecig, Genova, 1988, p. 177.

“rapallizzazione” were the hills of San Fruttuoso, Sampierdarena, Rivarolo and Marassi, where buildings were built wildly considering just of the space to allow free movement of vehicles, including along the rivers Bisagno and the tributaries. Unfortunately, this way of building without taking into account the environment and the rivers played a key role in facilitating the floods of 1970, 2011 and 2013.

Even social housing was involved in this process: always in the 60s were built palaces on Quezzi heights, known as “Il Biscione”, the shape remind a large snake, where many people went to live. The new urbanization weighed on the city streets and the suburb became a tangle of buildings and medium and large industries that impede themselves each other in an effort to expand due to the proximity of the roads.

In the periphery born other settlements just as disorganized, for example the Begato district, born with the purpose of connecting the agricultural area with the town, instead obtained the effect of catalysing many members of the Genoese criminality because of the distance from centre; it is accessible in long hilly roads become over time a sort of open dump and like other housing complexes such as “Quarto Alto” does nothing more than defacing an already damaged natural environment.

In the topography of Genoa’s historic centre designates the city area included within the <<Walls of Barbarossa>>, but it is also the name given to the area of the Sestriere di Prè, the Jetty (Il Molo) and the Magdalene (Maddalena); so the area interested by the <<Old City>> it is actually much broad than that traditionally attributed.

Gazzola underlined in “Genova: urban dynamics and deviance” that in the post-war period, the Historical Centre, as well as damaged by bombing, became the place that hosted several traffics and immigrants, marginalized, unemployed, delinquents<sup>8</sup> “thieves, the killers and that strange guy”<sup>9</sup> of Fabrizio De Andrè, as we shall see in the next paragraph.

### **Genoa and music: the Genoese School**

The Genoese school was a musical, cultural and artistic movement of profound break with the past developed in Genoa since the 60s around artists like Luigi Tenco, Fabrizio De Andrè, Bruno Lauzi, Umberto Bindi and Gino Paoli. The break was not only for the style, but also and especially with regard to topics covered: feelings, passions, sometimes told explicitly, political ideology, connected to socialism, anarchism and antimilitarism as a reaction to Vietnam War (1961-1975).

But the biggest influence was beyond any doubt, especially in the case of Fabrizio De Andrè, Bob Dylan’s folk music, French existentialism and American poets and writers of *Beat Generation* like Jack Kerouac.

The themes of the songs are various, but thanks to Faber,<sup>10</sup> the focus moved to the margins of society, such as homeless, addicted, prostitutes and gypsy and the neighbourhoods where they lived, the so-called “old city.”

Genoa is the background to the works of the intellectual group but if, in Bindi, Tenco and Paul, the city is almost never mentioned directly for leaving space to love, sometimes tormented, in De Andrè and Lauzi the Ligurian capital is recalled in the texts even with the use of the local dialect, the Genoese.

It’s a Genoa post economic miracle, full of industries and flourishing in the port, involved in student demonstrations in 1968 in the hope of changing the world, as well as in other European and USA cities. De Andrè portrayed the historical centre in all of its aspects, its virtues and vices, its

<sup>8</sup> A. Gazzola, *Genova: dinamiche urbane e devianza*, Unicopli, Milano, 1982. In P. Barozzi, *op.cit.*, Ecig, Genova, 1988.

<sup>9</sup> Verse of *La città vecchia (The Old City)* by Fabrizio De Andrè.

<sup>10</sup> Nickname given to Fabrizio De Andrè by the actor and friend Paolo Villaggio.

passions and flaws, always with a delicacy and respect in recounting the adventures of the various “characters”, erected to gods in a Pantheon of misers.

For example, in the last part of the famous “The Old City” (1965), talking about some characters that lived in the historic centre, Faber reminds us:

*“...If you’ll think about it, if you’ll judge it  
as a good citizen  
you’d condemn them to 5000 years of prison adding the costs  
but if you’ll understand, if you’ll investigate even deeper  
if they are not lilies, they are still sons  
victims of this world.”*

There are in the song some important aspects: the political theme, the rebellion against the conformist and Catholic moral, a legacy of Fascism, the desire to understand, not to judge by appearances, despite everything, these people. Indeed “*nothing is born from diamonds but flowers grow on manure*”, famous verse in the last part of “Field’s Street” (Via del Campo), 1967, it is a real gesture of affection and love towards those who were considered “outcasts” and, in this case, “prostitutes”, almost as if the purity and true love could only be found in what is considered the most impure by bourgeois morality. The historic Centre of the city, after the massive damage suffered during the Second World War, went through a period of sharp decline, as demonstrated by the Genoese singer-songwriter songs. One of the areas most affected by the bombing was, as described in the preceding paragraph, the nearby location for Sarzano Square (Piazza Sarzano); so Mother of God and other alleys were destroyed in the early 70s to leave place for new buildings and gardens. A song by Fabrizio De André and the famous Roman singer-songwriter Francesco de Gregori, The Way of Poverty (Via della Povertà/Desolation Row), released in 1974, even if it is the Italian translation of Desolation Row by Bob Dylan, takes us back with thought to the Mother of God, inhabited by the poor, immigrants and the homeless, always treated with great respect by the artists, but eternally condemned to poverty, places where even simple letters cannot be sent. In fact, we read:

*“...All these people that you mention  
Yes, I know them, they’re quite lame  
I had to rearrange their faces  
And give them all another name  
Right now I don’t feel so good  
I don’t want your letters no more  
Not unless you mail them  
From Desolation Row”*

Bruno Lauzi understood several aspects of the Ligurian capital with its “Genoa for us” (1975), where the focus is not the city but the nature of the citizens, the “churlish people.” The song was not written for the Genoese, the “us” of the song are not those who live in the city but, for various reasons they are captured and fascinated until to remain in Genoa forever.

In fact, we read in the first verse:

*“With that iffy face  
that iffy expression  
we have before leaving for Genoa  
and every time we wonder  
whether that place we are going to  
will swallow us and we’ll never come back.”*

But the thing that the interpreters of the Genoese school have in common is the love for the sea and



the importance of living close to it; the sea is mentioned in the songs of all the authors, De André, Lauzi, passing from Tenco and Sapore di sale, great hit by Gino Paoli.

The artists and songwriters witnessed of the great changes of Ligurian society like student movements of 68th, the transformation and urbanization of Genoa, the abandonment and rebirth of the historical centre since 1976, but also tragic events such as the suicide of Luigi Tenco during the San Remo Music Festival in 1967.

### **Genoa and the Old Port**

The port has always been inextricably connected to the history of Genoa, from its founding to the glory that brought Andrea D’Oria in the sixteenth century, with its large fleet known throughout the world. All activities of the Genoese: trade, banking, shipping, finance, shipbuilding industry have always rotated around the harbour. The link with the city diminished in the twentieth century when it ended free access to the Port and there was a major economic and employment growth that made it one of the fundamental international harbours of Europe and the world. For the citizens of Genoa the harbour area is not exclusively related to the departure and arrival of ships; especially the oldest part became a tourist destination and a place of meeting. The site, called the Old Port, knew a great renovation in the 90s, particularly in 1992, when Genoa hosted the International Expo. The event was also called Colombiadi, because they remembered the 500th anniversary of the discovery of America by Christopher Columbus. The protagonist of the change was the famous Genoese architect Renzo Piano who designed and built some areas still used nowadays as the Cotton Warehouses, currently used as a cinema, conference centre, restaurants, the City Library “De Amicis”, the “Bigo” (an elevator for seeing the entire Port from above), the Aquarium which was inaugurated during the Expo. The aquarium, managed by Costa Edutainment SpA, is the most visited attraction in the city by Italians and foreigners, with estimated entrances of more than a million of persons from all of the world.<sup>11</sup>

The Old City area, which overlooks the Old Port, from 1992 onwards also was the subject of a major redevelopment with the designation of Genoa like European Capital of Culture in 2004, and especially the consecration of Rolli’s Palaces<sup>12</sup> in 2006 among the cultural heritage of Humanity Unesco that brought international attention to the <<old city>>, given the presence in the area of aristocratic residences.

### **Genoa and contemporary migrations**

From the first part of the 90s the Ligurian capital had a strong migration, mainly from Albania and Morocco and after from Eastern Europe, Romania, in the 2000s. Later in the city came many foreigners coming from the south America and especially Ecuador, so much so that today still constitute the most numerous and active community in the Genoese context.<sup>13</sup> According to the latest ISTAT data updated in September 2016, in Genoa there are 54.779 foreign on 583.973 inhabitants. Basically, about one on 10 is not Italian; these data necessarily imply a greater interest of authority and politics about integration of an important reality in the Genoese urban context.<sup>14</sup> This change has had and continues to have consequences also on urban planning: the change in Sestriere of Prè, located in the District East Centre, from the neighbourhood of marginalized narrated by De André’s has become a neighbourhood inhabited mainly by immigrants, perhaps equally marginalized, but they brought new languages, values, cultures and colours, drawings,

<sup>11</sup> Source: <http://www.acquariodigenova.it/img/Acquario-di-Genova-cartella-stampa-febbraio-2016.pdf>

<sup>12</sup> “Palazzi dei Rolli” were an official list of noble palaces instituted in the XVI century by the Republic of Genoa for hosting important persons in Genoa. We can find more informations at the website <http://www.irolli.it/>

<sup>13</sup> Data are confirmed by the report of the City of Genoa, “Genoa, Foreigners in 2015” at the website [http://statistica.comune.genova.it/publicazioni/download/stranieri\\_ge/Stranieri%20a%20Genova%202015/Stranieri%20a%20Genova%202015.pdf](http://statistica.comune.genova.it/publicazioni/download/stranieri_ge/Stranieri%20a%20Genova%202015/Stranieri%20a%20Genova%202015.pdf)

<sup>14</sup> Data published in the website <http://statistica.comune.genova.it/>

signs visible in many shops and ethnic restaurants. The migrations and economic crises divided in two Genoa, where foreigners have settled substantially in several neighbourhoods, leaving others for economic reasons related to the cost of living.

The report of the City of Genoa, “Genoa, Foreigners in 2015”, shows some interesting data: the South Americans are the most numerous and constitute 35% of the total, followed by non-European citizens (17.8%) and Europeans (14,7%). In the end we find Asians (13.2%), the North Africans (10.1%) and finally the people from other American and African countries.<sup>15</sup>

Specifically, the most represented is Ecuadorian community with approximately 15.000 members, behind them there are Albanians, 6.093, and Romanians (5117).

the numbers of Moroccans Decreased to 4.187, because of many returns at home caused by the favourable economic situation in Morocco, followed by Peruvians, Chinese (difficult to quantify for the closure of the community), Ukrainians, increased, especially women for the growing demand of elderly’s care in Genoa, given that 28% of residents are over sixty age. The most marked African presence is Senegalese (1.780), followed by Nigerian and Tunisian. The Asian community is also represented by Sinhalese (about 1.150), Bangladeshis, Indians and Filipinos.

Talking about the distribution on the territory, the West Centre district, the area of Sanpierrez, has the highest number of foreign residents, nearly 11.000, followed by the East Centre district, the Port area and the Old Town, 10.346. Together the two districts hosted 40% of foreigners residents in Genoa, followed by Val Polcevera district, 15.3%, Middle West district, 11.1%, Val Bisagno district, 7.6%. At the end there are the Middle East district, with 5.4% and the East and West districts.<sup>16</sup>

### **The foreigners in the Genoese Schools**

Analysing the data provided by Arsel Liguria, Regional Agency for Educational Services and the Work, related to school year 2014/2015 there was a general increase of foreign students than in previous years. Overall, considering state and private schools of all levels, non-Italian students are 18.743 on 161.233 units. Statistically, the percentage reached 11.6% with a clear majority in the province of Genoa with 54.4%, followed by Savona, Imperia and, finally, Spezia.<sup>17</sup>

The data confirm the history of migration and distribution of the new arrivals in the Genoa area. The major concern primary school enrollments, 7.488 on a total of 61.658 children. These data make us reflect on some factors: first, the desire to settle in the region from parents and to build a life in Liguria and try a integration with the territory; *in secundis* should lead the state to some considerations concerning the education of teachers, especially in primary school.

New smells, tastes, colours, bring with them new hope and the role of the teacher will have more importance in a context always more multi-ethnic. Educating at intercultural values and cultural relativism also means this: face the challenges that puts the future in an open, aware and respectful way of the “other”, in an inclusive perspective and always reminding us that the Italians were and still are a nation of migrants . In this sense, a teacher educated in accordance with these principles can make the difference because a child including today will be a man (or woman) more integrated in the future society. The teacher will also have the task of recognizing “the other” not for exclude it, but for include it, enhance it in a society always in constant transformation.

<sup>15</sup>Source: [http://statistica.comune.genova.it/pubblicazioni/download/stranieri\\_ge/Stranieri%20a%20Genova%202015/Stranieri%20a%20Genova%202015.pdf](http://statistica.comune.genova.it/pubblicazioni/download/stranieri_ge/Stranieri%20a%20Genova%202015/Stranieri%20a%20Genova%202015.pdf)

<sup>16</sup> Source: [http://statistica.comune.genova.it/pubblicazioni/download/stranieri\\_ge/Stranieri%20a%20Genova%202015/Stranieri%20a%20Genova%202015.pdf](http://statistica.comune.genova.it/pubblicazioni/download/stranieri_ge/Stranieri%20a%20Genova%202015/Stranieri%20a%20Genova%202015.pdf), p. 12.

<sup>17</sup> Source: [https://www.arsel.liguria.it/\\_docs/osservatorio/Notizie\\_Flash/NF\\_44\\_Immigrazione/2016\\_01\\_29\\_OML\\_07\\_Studenti\\_stranieri\\_NF44.pdf](https://www.arsel.liguria.it/_docs/osservatorio/Notizie_Flash/NF_44_Immigrazione/2016_01_29_OML_07_Studenti_stranieri_NF44.pdf)

## Results

The urban planning of Genoa has changed, often in the name of brick, from the 50s to the present day. It has been 60s, economic growth, and the will, often inconsiderate, of modernization at all costs. Unfortunately, the city lost a lot, and the historical neighbourhood of Mother of God Street (Via Madre di Dio) which hosted Paganini's home, even the Door of Doria (Porta dei Doria) close today's Piazza Corvetto was destroyed because of wicked politics.

The <<Old City>>, celebrated by songwriters like Fabrizio De Andrè or musical groups belonging to the Ligurian folklore as "I Trilli", has been for years place of decay, but with time the marginalized who lived in the "carruggi" were transformed into new outcasts, migrants who can not find integration paths in our country. The analysed researches show how foreigners in Genoa are still rising and that they have helped to bring new colors in our streets and new flavors in our kitchen if we consider, for example, diffusion of a dish of the North African tradition as the "cous-cous" in many Italian regions.

The recognition of different's value has to start, beyond by civil society and politics, above all by the school and the main message of this paper is that teachers of the future will have to consider a training course in the sign of interculturalism and relativism, in order to carry out their job, their mission of teachers and educators of future generations.

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## Sitography

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# **Represent a mental geometry: comprehend and draw the topological space and architectural environment**

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## **Abstract**

In elective affinities of Goethe the nature is revealed in the park, its forces are controlled in an equilibrium in which it can manifest only as an aesthetic phenomenon. But this event is only apparent, in fact, the force of nature conditions and determines the characters' actions, disrupting their ties, proposing other similarities that lead to death. A particular environmental and architectural space are in their source and foundation of a whole generating recognizable affinity, or interpose themselves to these other affinities? For understand and describe this set of possible relationships you need to know, draw them and represent them. It comes to considered the graphical analysis as a deductive useful instrument to demonstrate the possible ambiguities in the process of representation and determine the relationships between a purely natural habitat - and its rural vernacular - constructed anonymous. Thereby you can define the relationship between the data and its phenomenal cognitive representation in the impact with a defined architectural context, also made complex by the physical system that induces constant reflections on the historical processes and the re-signification of the parties. The margin or the frontier between drawing and topological memory becomes prefiguration of the future.

## **Introduction**

The theme related to a description of the representation of the environmental and architectural space formed the basis from which to start a specific search key restraint to investigate the articulations that involve so consequential the architectural object. The disciplines of the drawing of the representation imply propositions that concern and allow you to describe space, and as a concrete fact, and deliberate, perceived and synthesized introspectively in gestalt forms. The question is expressed on how to analyze, through a scientific path decreed by the systematization of the methods and processes graphics and geometric representation, knowledge related to particular causes that relate to the description of the environment, of architecture, relating both space generated, that unit and consequently the architectural representation of the object observed and extracted. The object is therefore analyzed as a whole that defines multiple and extensive reports covering the construction of both the physical space that than the one perceived. Into this manner they determine forms, images, figures, which interpret the object by means of a set of events that organize and contribute to define other and still continuous and contiguous relationship. The object in the synthesis emerges from this relational duplicity given by the space in which it stands, with which it relates and is perceived by the reality known, felt and internalized; from hermeneutics architectural object which, in its many decompositions and abstractions, away, away, is fully part of the subjective values of the observer. The question of subjectivity regards the differences that characterize and determine the space and the object and many other units that the object decomposed and continually re-compound can also get when trying to traced back to the concrete reality.

The space in which it represents describing it this experience is also topological and graphic elements used are necessarily based on euclidean and cartesian foundations.

## Methodology

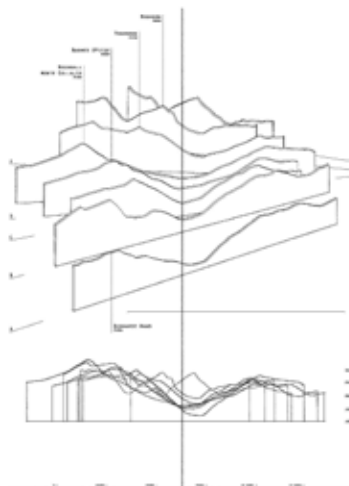
*“We are always inside a space, more or less comfortable and clear in itself and in its margins - frontiers - and we can only pass from one here to a there, from an inside to an outside, and back: movement that, in architecture, can always be said to pass from inside to inside, for example by an internal construction in an “urban” or internal landscape, when one considers the celestial vault as perceptible element of higher constituency of open spaces, and spaces such as enclosed in between earth, sky and margins - frontiers - vertical, whether natural or constructed.”<sup>1</sup>*

The goal of this study refers to the research of the representation of space and the architectural object, at this early stage, it aims to organize the multitude concerning the investigation of this type of experience through knowledge of the drawing. They will initially consider the conceptual categories of space and object which for now are still considered distinct elements. In fact, on the one hand there is the problematic nature of the plots between place understood as a natural space and how anthropic space - lived, in which are layered trims and variety of meanings, the other there is the architectural object investigation as a form anch ‘introspective that it is first of all logical processes in the making are moving towards a search which involves the abstraction of the object itself. This work of study and research is based on the method of representation considered of fundamental importance in the production process of thought. The concept of architectural space as well as the is meant and is expressed in this learning experience becomes comprehensible through a path that first of all assumed to be introspective, then knowledge and finally representative. As a first step to approach productively to a recognition of the place and, consequently, to learn to identify the peculiarities we must arrange with a spirit that is particularly attentive observation and uptake, as well as the *scrutatio* of the facts. Understand space in its multiple aspects and represent it leads to a knowledge that favors the encounter with matter, thanks to the relationship that is established with a site, either to the gradient, the scale of values or metric measurements, etc. to which it belongs. Means to collect ideas and useful drawings and necessary to make continuous observations falling into a phylogeny that allows you to control the processes of space and objectivity that it represents. This leads do constant and continuous reflections on how to represent the process that, according to the objective to be put in place, must coincide with a method and a graphic proceedings to be able to describe and explain the relationships determined from space. What space should be investigated and consequently represented? As said space is a very complex dimension. There are definitions on related space properly to dimensionality, as well as to the perception, introspection and internalization that is a kind of no-adimension. Yet it the dimensional space and the adimensional space are intercepted and is inevitably define in one single unit. How and in what manner this occurs? Think of a space, an open place, whether urban or rural, the nature of which is anthropized or not. This place is given by verifiable dimensions through appropriate instruments able to acquire and to give back the dimensions. They are not considered as priority issues which techniques to use or what instruments to use for the survey, not for superficiality, but because it always returns the instrumentation of measures and values similar to each other, with scraps, differences, additions attributable to the means to the diverse circumstances in which it is operated. Will always appear of different sizes, will rarely be the same, although more interesting, useful and fundamental in order to define a correct graphic elaboration of a measured object and necessarily drawn.

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<sup>1</sup> Gianni Ottolini, Spazio primario e architettura, negli scritti di Carlo De Carli, Ed. Ogni uomo è tutti gli uomini, Bologna, 2012, p. 6

It must be understood that inside a of data acquisition scheme of the outcome does not involve any desired perfection. In the same way it unfolds and organizes a survey for an open space, relating to a specific location, habitat, or building, it can also detect and measure an internal architectural space, whether historical or of any constructive provenance, anonymous or vernacular. Also in this case, as in the previous example, they will track the point clouds units and numerical values related to a measure and a dimension that is related and is defined on elements attributable to human life, based on the styles of life marked by a distant or recent history. Logically yes can give back processed products according scrupulous geometric graphic projective content, defining graphical models, whose data will be acquired in conformity with reality. (fig.1,2)



*Fig. 1 Geographical and environmental settlement system of the Valley of Anterselva edited by Sofia Ambrosini and Veronica Jung; Fig. 2 Geographical alignment of the Valley of Anterselva tops, steps, geographic borders (Bolzano), edited by Arianna Bordignon and Ondrej Hanus*

They opportunely describe the metric content, material, iconic, and / or symbolic which relate to the space, the architectonic object to which they belong recorded at the time when the activity has been documented through a survey of campaign. This acquisition element is considered in this study starting from a zero level, it is in fact an early stage of a foundation on which perform subsequent experiences of deepening of graphics - geometric analysis. It is now necessary to provide greater clarification on this aspect. In what manner the dimensioned space intercepts the adimensional space? In what way it is constituted and represents a special place, which is frontier as decreed by the unit interval of these two values? In the experience of every one, as anticipated, every place takes on a significance. At this space or spaces, it makes no difference whether in the singular or plural, are assigned a value depending on the way you can perceive it, thereby obtaining a positive or negative judgment, that it approves or rejects. There is not a rational reaction in this. In a latent state, in the subconscious is felt in the immediate if a space can be implemented in a manner that it can accept or reject. Intervene so rapidly, many other reactions primarily a result of relations between external facts.

For example, consider a space that is new, it has never been part of familiarity. In that case the immediate judgment can be positive or negative.

This experience is particular, especially if the judgment is subtracted of the conditioning, that is the boundary conditions that somehow lead to a judgment that is just convenient. It would be particularly effective to avoid giving a judgment on the site of what you already think it should be said according to expectations or to the stereotypes, beliefs or notions often wrong. A most frequent type of experience is attributable to an already known, site even if it is recalled as it is done exactly, because they usually do not observe what is usually exist! Looking out the window of their action, which is actually something routine and linked to a normal experience, they do not remember all the elements that are represented in the panel. Nevertheless, a particular experience that you want to consider and that is to be considered a very special event is the way the site is lived, experienced and perceived when it is experienced in a positive way or negative. Such judgment derives directly from the experience already lived and therefore fed from the memory and remembrance, the degree of depth that is significantly internalized unveils whenever that site may reflect experiences already accomplished or lived. Some sites that are part of the already lived considered negatively do not intend to remember them, let alone mention them but they are purposefully avoided and confined to a particular area *off limits* of existence of each. In reality that area is not as remote as it seems, it is a part that is always in "view." On the contrary the site lived positively expresses a particular energy that activates the personal reality and this will happen whenever that site will emerge in all levels and in all spheres that affect and concern the personal nature. Is possible now give an initial form to the union between one dimensional space and one adimensional. The dimensional space you can draw topologically through codes and signs that describe the spatial regions, as well as the sub regions and even the frontiers. (fig.3,4)

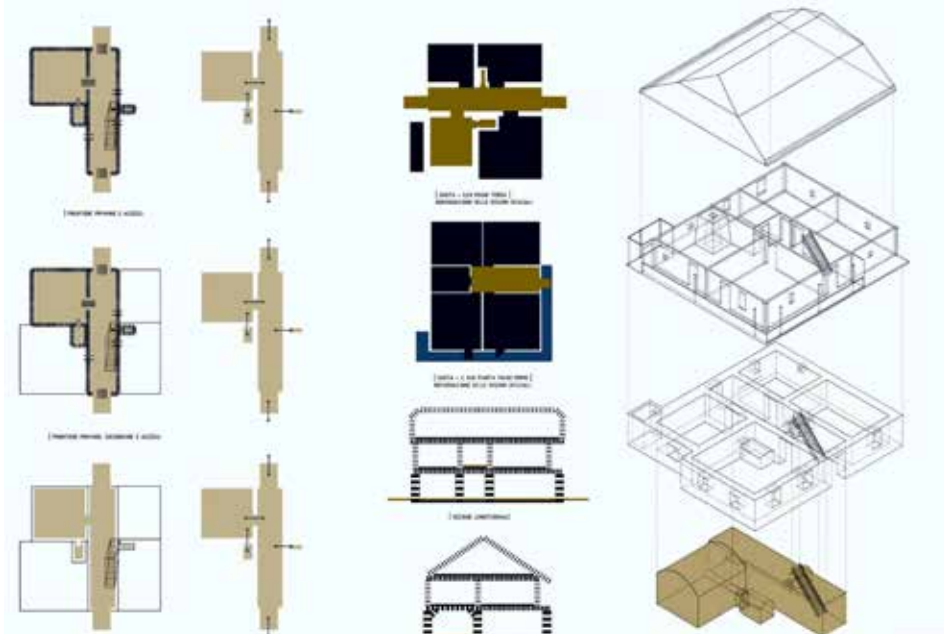


Fig.3 Drawing of frontiers system of cartesian basis relating to the representation of space reported at Maso Anten of Anterserlva Valley (Bolzano) edited by Arianna Bordignon and Ondrej Hamus



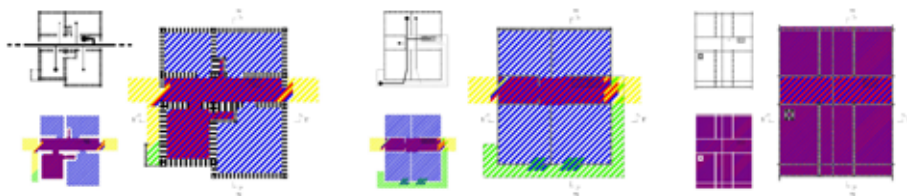


Fig.4 Drawing of spatial regions and frontiers reported the living space of the plane to the share 0.00, of the first floor share 2.67 to the second floor 4.69 share of the Maso Anten of the Anterserlva Valley (Bolzano)

The adimensional space instead found no measurable developments but only perceptible. This is to understand how the dimensionality we can move in the no-adimension is indispensable to understand this new form of threshold, which is a kind of other frontier. This continual interweaving between what is measurable and acquirable materially and spirit that perceives and feels other measures, leads to make the experiences that reveal how inner peculiarities. It is how to analyze the relationship between inside and outside. A continuous skilful play acting on the theme of duality. What is the space that is the extent of this frontier, this interval determined between what is outside and what is inside? In literature it is found in many examples, the theme of the double. You see some essential references related to the nineteenth-century dichotomy between good and evil. In 1809 in *“The Elective Affinities”* by Goethe, the nature is revealed in the park, his forces are controlled in an equilibrium in which it can manifest only as an aesthetic phenomenon. But this event is only apparent, in fact, the force of nature conditions and determines the characters’ actions, disrupting their ties, proposing other similarities that lead to death. English literature offers the two best-known examples of the genre. The first, *“The Strange Case of Dr. Jekyll and Mr. Hyde,”* written in 1886 by Robert Louis Stevenson, and *“The portrait of Dorian Gray”* of 1890, in which Oscar Wilde tackles the theme of the double not only in a moral perspective, but also in the aesthetics and spirituality. Fyodor Dostoevsky, in *“The Double”* in 1846 delineates a case of dissociation of personality. Pirandello in *“One, No One and One Hundred Thousand”* of 1926 deals with the issue of identity crisis; the protagonist Vitangelo Moscarda has in a sense learned “the lesson” of Mattia Pascal, in fact, does not try to change their name (which he views as the onset of death), thus gaining an evolution of their consciousness. Between the two opposites fixing a form of continuity and contiguity, as well as between outside and inside and from the moment it is this relationship which gives form to two spatial regions they may also be in their turn a sub-region with respect to ‘other. In the interval between the other space regions, it represents the frontier. Grasp, perceive and express concept of the frontier is part of in wanting to investigate the signifier of the word. With significant is meant the form and matter that refer to a concept. On this question de Saussure explains that the union of form and content is the relationship between signifier and signified, it is defined with the sign. The concept of sign assumes specific values inherently to the discipline that studies them. Generically signs can be divided into categories: iconic, indexical and symbolic, the latter generally be attributed to a code. In the sign of the iconic signifier type it is similar to the significance, in which case the expression is in some way similar to the content. In indexical sign there is a physical connection with the signified for example there is a direct relationship with the object, namely the expression highlights the physical presence of the content. In symbolic sign there is a relationship between signifier and signified; this is done in an arbitrary way, that there is a link necessarily evident between signifier and signified. For example, if we consider the non graphically natural type frontier but delineated and defined by a simple sign; in that way it is distinguished from another well-defined type of sign, and also specified path in the thickness such as that constituted by a border? Intuitively to border we consider a sign that retains

and delimits a field. The field is here understood as a spatial region, or even thought of as a space relative to an unintended and specified size. On the issue of the frontier concept, understood in terms of interpretation and interpretation of the topology, the sign that separates two spatial regions must allow the connection and connectivity. Unlike the border that is considered as an element that retains, the frontier is a filter element, which allows to connect what is connectable as for instance entities and the values compatible with each other. Also geographically track and precise border a natural confines, because it formalizes as a sign that tends to hold and limit. On the contrary the frontier delineated sign relative to the same geographic boundary allows a filtered transit. The concept of frontier and spatial region constitutes a disciplinary indicative element, even if not immediately conclusive with respect to the knowledge factor. It can not be considered resolute because it is required to come to the knowledge understanding. (fig.5)

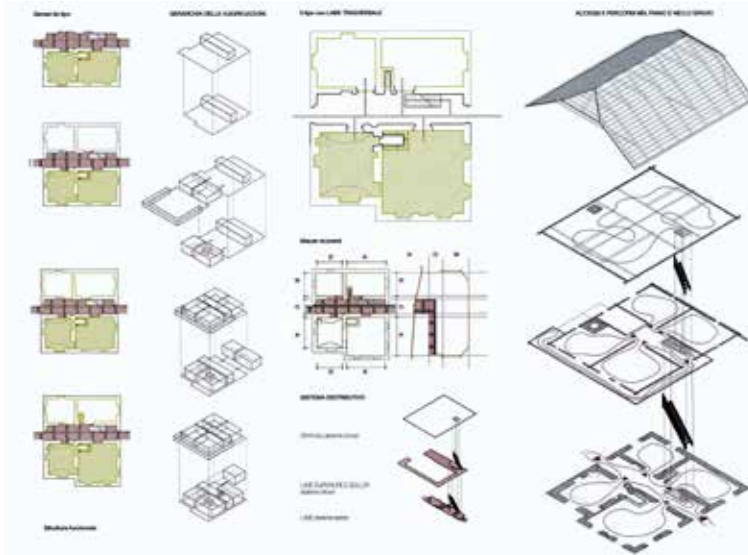


Fig.5 Drawing on the representation of the spatial regions system and functional areas of the Maso Anten of the Anterserlva Valley (Bolzano) edited by Giulia Rossetti and Laura Sartori

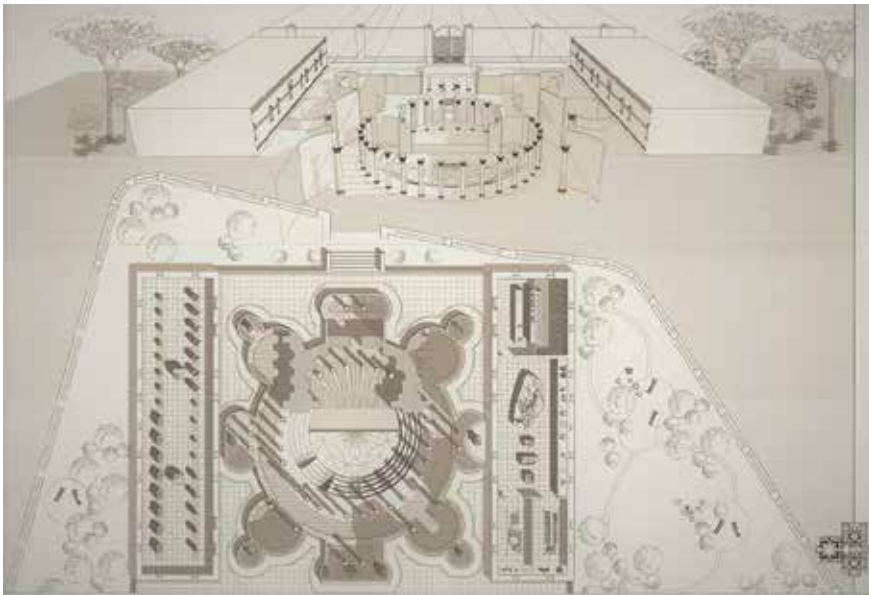
Dino Formaggio maintains that “the verification of the same architectural organisms built makes me think that the space is in any case - especially in architecture - an act of qualification, an authentic assignment or donation of sense - and significance -.”<sup>2</sup>The architecture, the space, the object, if studied by the survey and drawing allow to pursue the matter since their analysis phase, the issue of recognition of the sense of the system and the significance of the topic of study, also liaising with other issues related to the preservation process also as perceived value, not only of the elements that constitute the cultural artistic patrimony, environmental and historical, but also of the whole territory. Thereby frontiers, drawn spatial regions, traced, investigated, described and represented finally give shape to the understanding, lead to knowledge and securing the rule for an architectural structural similarity.

The selection of the camp of the figures, the trans - appear, the search for a model that is also placed the synthesis of research experience at a level that goes beyond a formal and conceptual order finalizing the representation to an indissoluble unity between drawing and architecture.

<sup>2</sup> op. cit. p.10

The aim of the action taken so in fact, is the inseparable unity among drawing and architecture. Space systems, fundamental configurations, formalized expressions give rise to constituent units of architecture, whether historical or anonymous vernacular, allowing a reading of the spatial regions and frontiers, representations of sense and significance of a culture of experiencing and producing techniques, patterns or figurative models that only an elective affinity and sapiential is able to associate. This investigation must lead to understanding and knowledge of architectural space is understood in its dual and unitary structure of significance and space. This fact makes it all the more necessary to research and specify the way in which a set of codes of representation makes it transmissible intelligibility of the architectural object. When this is done, in a second moment, we examine two other important aspects for the study in progress. The first of them is analyzed at a macro level; in it the object of study is related and you have to read a turn on a large scale relationship. Instead, the second develops in a micro context and refers to the investigation carried out on a small scale report. Obviously the question is not only linked to the ratio scale, but also on how a system or multiple systems constitute a relationship that generates a structure and how they reordering between them. The initial question is primarily geometric - Cartesian. The element preparatory to the different phases related to the study is the architectural representation of the object considered in all its thematic aspects and graph - geometrical obtained by redesigning. Matrices and generating graphic / geometric that are part of the settlement system and measured and redesigned architecture, form the basis of study on which to determine the first compositional / constructive relations inherent to a first reading of space. Thereafter, the integrated architectural object study understood, known and represented through the graph models - geometric implies a particular and circumscribed consideration based on the organization on the recognizability of the object and how it is represented both in its part, as well as in its entire. Of particular importance is the evaluation on the application inherent in the modeling of graphic systems - geometric. This datum essentially rational based on the definition and allocation of graphic representation of values opens the penetration route on the representation of the object that before being considered in its broad analysis phase defines and establishes through a careful graphical analysis of the relationships decreed by the description spatial regions and frontiers, as elements of representation and control of the architectural and structural whole space. The use of perspective opens up a question that sees more than as applied and perceptual experience as a human being, for his undisputed nature also seen in perspective as a useful tool for perception. The site consists of objects, material, colors, lights and shadows lets you put together and unite suggestions, memories and signs. Pragmatism and ideal blend and form the essence decreed by the prospect. (fig.6) This oscillation between perception and sense involves the relationship that is established between the space interval that separates the interior from the outside and that constitutes the frontier. In representing graphically and geometrically the prospect is recognized in the tracking of the horizon line the limit of the image of the drawn model, in this determining a condition in which the figure, namely the model described, the metrics loses properties and becomes a perceived element, purchase through a particular subjectivity. It is the result of a personal culture of the subject according to the degree of penetration he possesses relatively to 'modeled object causes it to give a judgment. The judgment will resume dimensional questions only perceived in perspective, form, light and shadow, color and position. Also there will be judgments that refer to the clarifications on the quality of the object - model, as we will go on qualitative assessments, taking on additional significances of dependency or less than the qualities expressed by the molded object. In representing an object described by a representation of what system is the orthogonal projection with the homology is found a form of the same object abstraction. Recognizing the system method and consequently in the graphic process the qualities basic metrics, the object represented in the inclined plane also lose

the quality metrics, assuming a position not realistically realizable, thus accepting forms of abstract representation that solicit and refer to more introspective aspects. This way of observing the object obtains new questions, since it is no longer subject to physical reality, as it was observing an object modeled in perspective; the object, in its degree of abstraction, poses new and other conditions. For example you can get out of a judgment of generality or synthetic, combining judgments instead of a special nature, specific to the part of the object represented in this way. In fact, from the reading of the object made of distinction of dependent parts and no, it emerges the meaning and the very nature constituted in all its parts. Observe the object in this form of abstraction, which lost its importance, is to enter into a no-dimension in which the particular defined by the position of the object placed in a place “unreal”, but not symbolic, is the universal, not as a dream but as a concrete expression value and especially how knowledge of what defies any research. Thus the architectural space can be considered observed through the unity of these two attitudes of thought. The first concerns the graphic research on the representation of space through the description of the spatial regions and frontiers system: study that involves the acquisition of the concept of space is relative to the location, the architecture, that the building because the space is he founded in the unity of the building. This aspect also affects the perceptual data useful in recognizing the relationships in the description of the space itself. The second concerns the architectural object, its shape, what constitutes it through understanding and knowledge of the space and consequently the given object. The object analyzed can be disassembled and reassembled, and these elaborations explicitly concern the drawing and every system of representation that is due to forms of realistic description of what the redrawing of the whole of an architectural organism, or even to forms of abstraction in which the modeling axonometric, and in particular that in the orthogonal projection homologous, allows an abstraction of the object represented freely and consequently perceived “in no-dimension”. (Fig.7)



*Fig.6 Represent an ideal place in perspective. The model projected in perspective from its center, not lets you capture metric values on the framework plan. Edited by Eugenio Fusarini and Domenico I. Viceconte*

## Conclusions

The perception of space is particularly noticeable through the notion of materials, so the organization of space is based constructive attitude both natural and anthropogenic. The space is considered in its essence as belonging to a place, and similarly the architecture has as a requirement to be able to represent. For represent space through disciplinary knowledge of the survey and drawing is essential to outline a research process that falls in the experiences and knowledge practices and systems and methods of representation for architecture. The practices graphic - geometric and topological interpretation extraction are based on the architecture of cartesian foundations, through a descriptive representation process identify the outcome of a knowledge and establish the size criteria of space. The architectural object analyzed before in its context and then proceeds from it to be abstract, it reveals various comparisons referable now in its basic position now to composition categories of space involving subjective aspects. The space and the architectural object giving rise to certain multiple relationships easily identifiable when it comes to dual experiences, when this duplicity multiplies, reflects on the variety and the interweaving of many other possible relationships. The drawing specification through the experience of the geometry plays a privileged role in investigating the productive structures generated by dimensional vastness

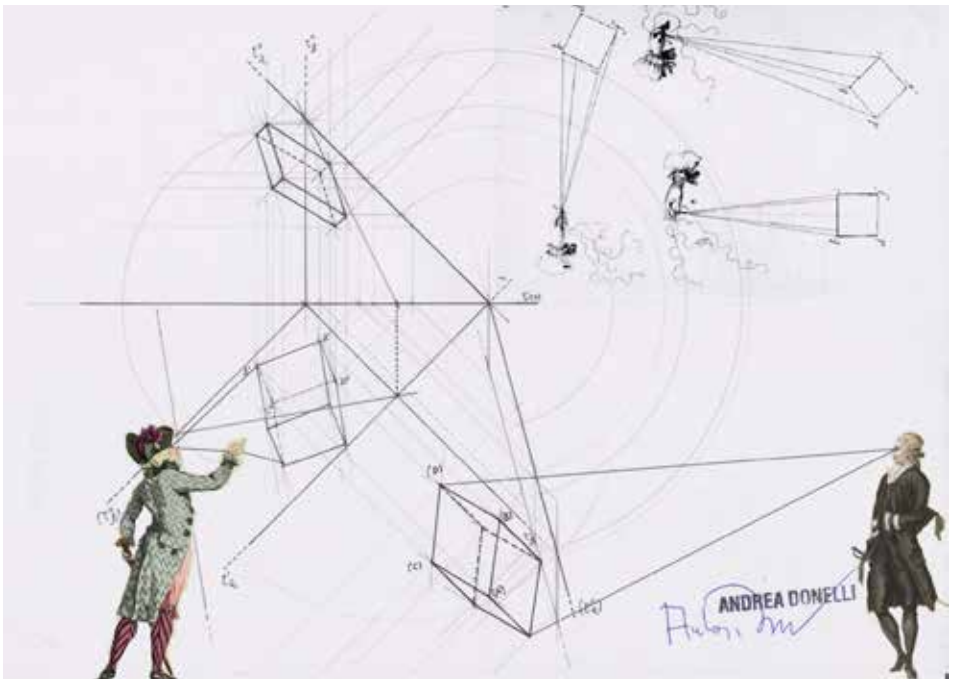


Fig.7 Into projection orthogonal design with the homology of a solid figure.

The homology allows you to abstract the object and to observe it into a unique and unrepeatable. The image of the model output to the same topic drawn is represented in the different steps related to the same movement. edited by Andrea Donelli

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## **Event-oriented cities. Mutations, narratives and re-uses from the past to the future**

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### **Abstract**

The past has a very strong and emotional presence in Italy, and this influences the way we think about future. Traces of the past remain in the present as evidence of previous times like footprints in the sand. We live in and with these footprints: we act, by mapping and documenting; we react, by designing scenarios to rehabilitate places, defining goals; thirdly, we interact, by involving people, creating platform and collective actions. Cities are not just made out of buildings and streets, they are mainly built of events, actions and practices, shared knowledge. Events assume a social significance that meets with representative and promotional needs. They are collective expressions of a will and of an intention. They are a way to stage and test possible uses, to put back into circulation spaces and environments by using installations, products, signs and messages. They are tools to propose new cycles of life, give meaning, narrative and uses - even temporary uses - to underused or forgotten spaces. Thus, the function of an event is expressed as an anticipation action. Events are design-initiatives, performed through a sequence of actions, characterized by the use of specific design devices, such as prototypes, mock-ups, design games, models, and sketches. Why is the term event so widespread today? What semantic area does it cover? How should we use it? The multiplication of events modifies temporalities in cities. What can be the impact of events on heritage or vice-versa? And their relationship in the city?

Design is the capability to solve problems by introducing into the environment new artefacts, and designers introduce mutations to improve a function or enable a new capability. Depending on several channels and technologies, actions and practices bring ideas from designers to people, by generating alternatives. Designing activities is a way to experiment possible investigations and propagations of thinkable futures. The method goes through two main steps: Imagining “what it could happen if” analysing any need; sharing the subsequent ideas, involving people and acting.

### **Presence of the past**

The past has a very strong and emotional presence in Italy, the past is present in our cities, in our villages, through traces, remains, residues we are living with. As a matter of fact, the number of abandoned or disused spaces and building is growing more and more<sup>1</sup>. These are often bits of the past, suggestions in the urban scenery; these are disused containers, industrial areas, but also monumental buildings, property of our artistic heritage, whole towns or villages, often unable in adapting to the economic and social changes of our cities.

The Italian way of living is abounding and rich of traditions, history and heritage and this influence

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<sup>1</sup> In Italy it is estimated there are over 1,5 mln of vacant building; over 6,000 “abandoned villages” (Istat). Giovanni Campagnoli, autore di “*Riusiamo l'Italia*”, Osservatorio on line (<http://www.riusiamolitalia.it/ita/autori.asp> - visited on 2017.04.17)

the way we think about future, we are *flâneurs* moving among the signs of our history. Our heritage talks about us all over the world through our food, our art, our craft, our culture.

An idea of heritage portrays our culture based on museums, galleries, festivals, local rituals and traditions, literature, film, performing arts. An idea of heritage shapes the Creative Industries system of Made in Italy: it includes all those productive activities that are not, in itself, a cultural heritage, and derive creative lymph and competitiveness by culture, such as design, architecture and communication. Creative industries, therefore, develop services for other sectors and convey content and innovation in the rest of the economy - from food and wine tourism to manufacturing - creating a hinge, a “hybrid zone” where is located the creative-driven production, ranging from advanced manufacturing to artistic crafts and so on.

Thus, like footprints in the sand, traces of the past remain in the present as evidence of past times. But “not everything that will exist has existed or does exist” (Bell, 1996, p. 12). Back from what does exist, that is the footprints, we act, mapping and documenting, by reviving every new thing from the imprint of the past that we get with us. We react, by designing scenarios and vision to rehabilitate places and situations, defining goals, objectives, intentions. And then we interact, by involving people, creating platform and participation processes, collective actions. Each of these projects is nothing but a mutation, built on narratives and re-uses from the past to the future.

As Fuller said, “The function of what I call design science is to solve problems by introducing into the environment new artefacts, the availability of which will induce their spontaneous employment by humans and thus, coincidentally, cause humans to abandon their previous problem-producing behaviours and devices.” (Fuller, Kuromiya, 1992). Objects evolve as technical culture progresses: that is, designers introduce mutations to improve a function or enable a new capability. Designers produce mutations, but the energy of the crowd drives those ideas to realization. (Ratti, 2015) Depending on several channels and technologies, actions and practices bring ideas from designers to people, by generating alternatives.

### **Events and practices**

Cities are not just made out of buildings and streets, they are mainly built of actions, events and practices, shared knowledge. (Fagnoni, Ricci, 2016) The social significance of events meets with representative and promotional needs. In the twentieth century, festive occasions, outdoor performances, exhibitions and mass demonstrations taking place in the city, assume a social binding function. They provide an opportunity to establish collective relations, to sensationalize, to stage contrasts and languages of a community that needs, in some sense, to be reconstituted. Events, temporary happenings labile and uncertain, become the expression of a community that is rebuilt in the same place simultaneously. They are collective expressions as manifestations of a will and of an intention. In particular, designing events in abandoned or underused places temporary gives life to provisional spaces. However, they fully enter into the processes of urban identity creation, aimed to innovate the product-system cities. They are a way to stage and test possible uses, to put back into circulation spaces and environments by using installations, products, signals, messages. Thus, the possible function of an event is expressed as an anticipation action.

Why is the term event so widespread today? What semantic area does it cover? How should we use it? Newspapers, magazines, television networks, advertising, star system, cities, are full of events. From roughly the sixties, it has developed in a frenetic way as the theory of specific philosophical field, interested in understanding what happens.

Whenever an event can be described in a way that makes it intentional, that is, and it presupposes an intention, that event is an action; if it doesn't assume any intention, that event is an event. Actions are what I do, events are what happens to me. Whenever there is action, there are reasons, in that



the reasons are all that acts within us and leads us to act. This relentless syntagma normally is in relationship with all forms of cultural representation. (Calabrese, 2007)



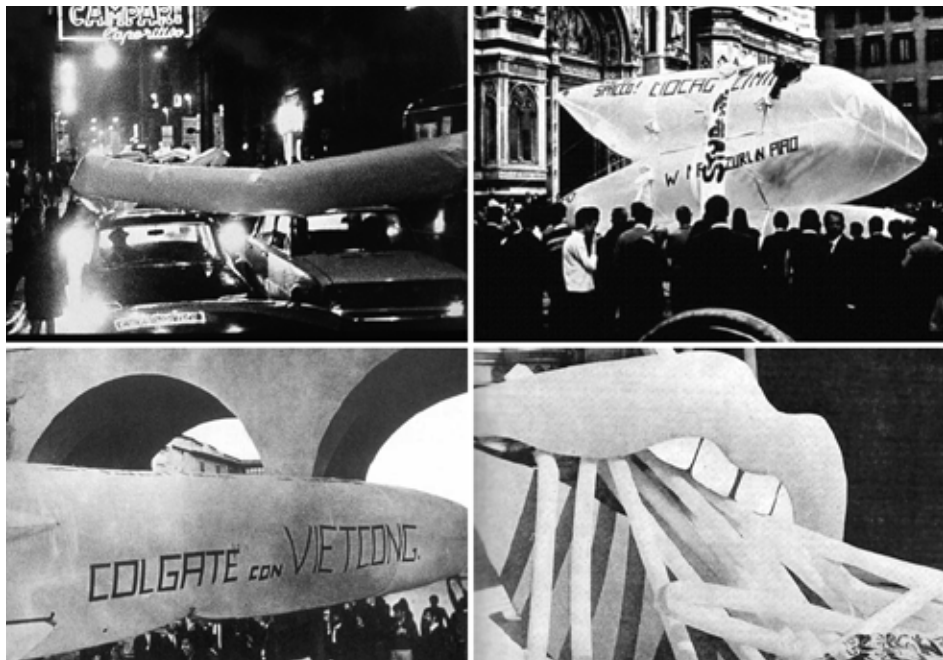
Fig. 1. *Superelevata Event, Area Riparazioni Navali, Genoa, Installation by Re-Cycle Italy network 21.09.2014, Ph. Sara Favargiotti.*

Slavoj Žižek, the great Slavic philosopher and sociologist, explains this clearly in his beautiful text “Event” (2014). He generally defines it as an effect that seems to overcome his causes, change in the way reality appears to us, overwhelming transformation of reality itself.

The event is a mutation or disintegration of the frame itself through which reality appears to us, we perceive the world and engage in it. It is a *reframing* since only a fantastic, ghostly frame makes us able to experience the reality of our lives as a totality: *enframing* is the proper human attitude to reality, it is the way we relate ourselves to it. Still, the event is breaking the normal course of things. The idea of event is a means of shared production of researches. In this way, a cultural event becomes a temporary service, a first example of virtual experience, suspended memory in a given space and time.

This peculiar idea was born in Italy the sixties, when the Florentines radical group UFO introduced a profile of ironic project, in conformity with the logic of doing research and not product. (Branzi, 2014) Events do not just happen; they are carefully crafted to weave narratives (content) into places (context) through processes of experience design. (Richards et al, 2014, p. 7) Effective design of events can generate successful business models and it contributes to sustain cultural activities even in difficult economic times. Modern societies have increasingly recognized the power of events as economic, social and cultural tools, and this has arguably led to a growing number of events being purposefully staged. (Richards et al, 2014, p. 8) This has led to the emergence of an ‘events industry’ that is growing fast: it belongs to the Culture and Creativity Industry, that in Italy has produced in 2015 a total economic value of 48 billion euro, equal to 2.96% of national GDP, with a

growth rate of 2.4% over the previous year in direct revenues. The 86% of revenues is represented by direct revenues, i.e. arising from the activities of the creative industry such as design, production and distribution of cultural and creative works and services, while the remaining is due to indirect revenues, or those relating to activities collateral or subsidiaries. (Pirrelli, 2017 p.1). It is a sector that ranks third in Italy for employment, with 880.000 direct employees (+ 1.7% on 2014) rising to over 1 million if we consider the indirect ones.



*Fig.2 Ufo, Urboeffimeri, Firenze 1968. The UFO group, founded in Florence in 1967 by C. Bachi, S. Gioli, L. Binazzi, R.Foresi, T. Maschietto and P. Cammeo, adopted a desecrating and ironic approach to bourgeois habits. UFO experimented in the urban context of Florence, a city where the presence of history is suffocating yet at the same time stimulating, coming face to face with the monumental nature of renaissance architecture. Urboeffimeri are inflatable elements used as instruments of struggle: they represent an alternative way to contrast against the heavy power of academia with an architecture made of air. (cfr: <http://www.domusweb.it/content/domusweb/en/architecture/2013/01/03/ufo-story.html>)*

### Designing Events

Events are design initiatives, performed through a sequence of actions, characterized by a clear design approach and by the use of specific design devices such as prototypes, mock-ups, design games, models and sketches. The design of events refers and focuses on the experience design<sup>2</sup>, that is the core phenomenon of an event, (Berridge 2011, p. 278).

The most events, in fact, as defined by Richards (2014), are based on live-content and the co-presence of large numbers of people: it implies that timing becomes a design issue, as do problems of access, and dealing with waste and nuisance. The effective use of events as value creation platforms in the knowledge economy therefore raises a range of design-related issues

<sup>2</sup> Pine and Gilmore (1999) introduced the transition from the service economy to the experience economy. Whereas the management and design of services had tended to focus on the actions of the supplier, experiences can only be created in the presence of the consumer, and each experience is individually mediated.

for events. Design processes are therefore applied to events in order to: increase effectiveness and efficiency; increase recognition of events among stakeholders; ensure the production of discrete effects, such as social practices, social cohesion, cultural processes and economic impacts; minimize undesirable effects of events, such as noise, nuisance, environmental damage; optimize the success of the event, in terms of visitors' numbers, the quality of the experience and other outputs. (Richards, G. et al. 2014, p.10). The design phase involves more concrete concept development, as Mossberg et al. (2010, p. 4) point out: creating the story line, designing the service-scape (i.e. physical location), packaging and programming the activities, for instance offering a number of storytelling activities in combination with a meal and accommodation or making a programme for on-stage storytelling activities, music and other performances. Creating awareness for the storytelling offer with point of departure in a marketing plan as well as prolonging the storytelling experience through souvenirs and other relevant products (e.g. food) are also central activities of the design phase. (Richards et al. 2014, p.15)

Design is often crucial to the success of an event, despite until a few years ago design has often been ignored in the practice of event management. Brown and James (2004, p. 60-61) identify five basic design principles for events:

Scale – size of event

Shape – layout of event

Focus - attract attendee gaze

Timing – event programme

Build – ebbs and peaks in an event

Designing events is something far more than design product, in fact, events can be catalysts, conduits, and lenses that enable people to function within and reflect upon their own role in society. In the context of the knowledge economy, for example, events could be viewed as generators, containers, and disseminators of knowledge. (Richards et al 2014, p.11)

Taking into account our background we propose a more specific and contextual approach and a set of principles for using events as tools to reactivate and start up again abandoned places:

**Scale\*** –

not only a physical size, but it includes a collective, generative and participative dimension of the event.

**Shape\*** –

layout, design phase. Designing the servicescape, furniture, choosing materials and elements due to meaning, local history, circular economy, not only appearance.

**Story\*** –

designing the storytelling in a way that it becomes part of the more intangible design elements, being central to the DNA of the organization and /or the event. This process may include creating a vision or a storyline that seeks to involve audiences through identification processes (Richards et al. 2014, p.15)

**Experience\*** –

considering the experience design in each aspect – communication, food, services, all the elements of the scenario.

**Time\*** –

involving time and focus on the user experience, planning the event in the city times.

**Schedule\*** –

programming the activities balancing ebbs and picks involving people and stakeholders

**Set up\*** –



*Fig. 3. Cultural and Public Events in the city. Genoa, Videomapping, Palazzo Ducale, Andy Wahrol, 2016. Here*



*Fig. 4. Cultural and Public Events in the city. Genoa, Festa dei mondi, Porto Antico, 2017. Here the citizens*

*are onlookers and participants.*

### **Events as Mutations, narratives from the past to the future**

In Italy, the common ground of many cities and villages shows traces of the past and the fullness of abandoned places. They contribute to building identity and stories. Buildings and empty spaces are now an experimental laboratory, where informal actions, events and temporary reuse practices become innovative instruments.

In this sense recycling and reuse practices and events on abandoned areas, that have been deprived of meaning, have progressively spread in the latest years, becoming the subject matter of research groups who investigate the potentials of such strategies. The activist-designer, according to Fuad-Lukas (2009) is an happenner and his project is an essential human expression able to smooth our transition towards a more sustainable future. (Fagnoni, Pericu 2016, p.212)

The activities of event design merge urban policies, social design, exhibit design, communication design and storytelling, with cultural and economic development. It is interesting to analyze their social role and their often bottom-up dynamics. In the last years, a growing number of events and practices are proposed in cities and villages as strategic and planned tools to achieve different aims: this is the field in which event designers are emerging. This is a strategy extensively used, for instance, in regenerating Barcelona run-down areas starting from 1992 Games. Later these practices have also spread to other cities, and we note these activities also in Genoa.



*Fig. 5. Genoa, Ex Magazzini del Sale, Sanpiederarena, Concert Improland OFF, 20 may 2016, promoted by Municipio Centro Ovest (ph: <http://www.comune.genova.it/content/il-riuso-temporaneo-degli-spazi-3>). Here the citizens are onlookers participating in the reuse of an ancient place.*

The aim is to promote a more civic and responsible use of spaces and create confidence and social harmony by performing cultural events in areas marked by the occurrence of social and economic emergencies. Richards and Palmer (2010) have analysed and reported the system and the strategic approach to the relationship between a place and the events in their book “Eventful Cities”. The move from being a ‘city with events’ to being an ‘eventful city’ is a potentially interesting moment, because it marks the point at which place stakeholders begin to realise the potential of events to change things and have longer term effects rather than just short term impacts. (Richards 2017, p. 7) In fact events have taken on a new meaning in postmodern societies, where they become not only an essential experience in themselves, but also a great enhancement to tackling the deterioration and promote reuse or temporary reuse of our abandoned or disused places, and to encourage identity and sense of belonging.

Events and practices, especially those activate in abandoned spaces, are living organisms, because of they are born of fertile connections between people, they grow, creating more value in the process, they change, they reproduce and they eventually die. (Richards 2014, p.9)

The dissemination of bottom-up practices and events in the city of Genoa can be an opportunity to revive some ruined places in the city; it may be a chance to create job opportunities; it may be also the occurrence to reweave a bond between citizens, sense of belonging, cohesion



*Fig. 6. Genoa, Liberi Giardini di Babilonia, ph: Clara Cullino, (cfr. <http://www.inventati.org/spaziolibero/>; <http://www.liberacollinadicastello.org>). Here groups of citizens are the reuse and reactivation promoters for the ancient church.*

### Open source events and place-making

Open source events can be a tool for transforming a space in place, for making places where people love to go: open source events can be a tool for place-making<sup>3</sup>. The idea of place-making (Jacobs, J., 1992; Whyte, W, 1980; Burns, D., 2004; Hamdi, N. 2010) proposes an approach to urban issues from a different point of view, opening up to new prospects and opportunities. The focus of practice is the place and, consequently, the community that lives and works there. Place-making capitalizes on a local community's assets, inspiration, and potential, with the intention of creating public spaces that promote people's health, happiness, and wellbeing. It is political due to the nature of place identity. In a place-making process the community is the main reference expert, human being is at the centre of this practice. Place-making is a way to act, it is a process, but it is also a philosophy to create a sense of place, involving visual, cultural, social, environmental characteristics and providing meaning to a location. Open source events aim to create something collaborative, social, culturally aware, sensitive to the context, multi-disciplinary, visionary, inspirational/motivating, inclusive, transformative, using a bottom-up process. As Richards argues, in fact, "Eventfulness is intimately linked to the process of placemaking" (Richards, C. Palmer, P. 2010, p. 31).



Fig. 7. Genoa, Giardini Luzzati (ph.: <https://www.facebook.com/GiardiniLuzzati/?fref=ts>  
<http://www.giardiniluzzati.it/chi-siamo/>) Here groups of citizens are the reuse and reactivation promoters, creating public place, urban gardens, scheduling different kind of events.

### Conclusions

We witness the multiplication of events and modification of temporalities in cities. Cultural events, transforming spaces in places, reusing them, are fundamentals for the cities and the communities to achieve a range of objectives: economic, social, political and cultural. Where *physical space* is made of materials, the *imagined space* gives and takes meaning from the social and cultural context, from heritage and remains. Thirdly, the *lived space* is the result of the creativity of the space users, that means fed on open source events.

Designing a physical space means to shape materials, buildings, to design urban furniture, devices, and so on. Designing a symbolic space means to reuse and design icons, symbols, identity, narratives, etc. Designing lived experiences, practices or events, means to create patterns of daily

<sup>3</sup>Theorized as early as 1975 by the New York Project for Public Spaces (PPS) in the United States and is now internationally used by more than 3,000 local communities in 43 nations. (<https://www.pps.org>, visited on 04.21.2017, Project for Public Spaces, Placemaking for Communities)

life. (Soja, 1996)

What is the designers' role in this scenario? On one hand, it relates to the designers' ability to 'shape the future' synthesizing knowledge into tangible options, concepts, prototypes, to aid people to experience 'what could be'. On the other hand, designers take a role as facilitators of creative processes (Nelson & Stolterman, 2012) not a passive, reactive role mere servant to the users' wishes, but a role as designer expert (Manzini, 2015) i.e. performed by those who have been trained as designers, envisioning concepts and co-designing, co-making. The concreteness of design does not directly concern the materiality of objects that are promoted or manufactured. The concreteness of design is to design concrete actions that can influence people's thoughts and behaviours, and thus also apply their design skills in a different context.

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# Port City Borderscapes

## Origin, Nature and Evolution of the Administrative Boundary

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### Abstract

*«Borders are both makers of belonging and places of becoming»  
(Brambilla et al., 2015)*

In the era of globalization and transnational flows, the multiplicity of borders in urban planning and landscape imaginaries is a lens to illustrate changing configurations of the social and political contexts.

According to geographical thinking, «in the late 1980s the transition from the concept of border to that of *bordering* [...] allowed borders to be viewed as dynamic social processes of spatial differentiation» (Brambilla et al., 2015). Besides, «today fast rail links, airports, and motorways are what make cities grow. ‘Magnets’ like these shape and solidify the urban field into one of a number of *scapes*. We shall describe the distortions borders bring to the built environment as ‘border solidifications’ or borderscapes. » (Harbers, 2005)

From these standpoints, it is possible to state the potentiality of borders as fields of research and grasp their dynamic and symbolic character in space and time.

Between a city and its port an administrative boundary exists: a consequence of the first port consortiums that were set up as independent entities from the 1950s internationally. Though the urban-port boundary is a separation, «the port-city interface may be described as a system, or as a concept, or as a series of mechanisms that, collectively and individually, link port and city.» (Hoyle, 2006). This intermediate zone is a ‘threshold’ (Crotti, 2000) with mutable thickness and configurations that vary according to multiple factors. Exploring this border organism offers opportunities to set up strategies for the urban-port territories and map the relationships between politics and aesthetic.

### Introduction

#### Borders are everywhere

In the late ‘90s, the French philosopher Étienne Balibar argued that scientific research on ‘borders’ topic, especially the political and institutional ones, wasn’t disappeared, indeed it was so widespread to have turned whole nations into *borderlands*<sup>1</sup>, triggering a relevant change in their meanings. Interest in borders, and in the spaces generated by them, has emerged mostly after World War II together with their theorization in the academic context. More recently, the topic was further developed due to major changes in the international geopolitical landscape.

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<sup>1</sup> Cf. A. Paasi, “A Border Theory: An unattainable dream or a realistic aim for border scholars?”. In: Wastl- Walter, D. (editor 2011), *The Ashgate Research Companion to Border Studies*, London, Ashgate, 1996;

The growing emphasis on mobility and trade in the field of sociology (Sassen, 2002) and the emergence of the *network society* (Castells, 2000), produced irreversible transformations: conceptually speaking, ‘the global’ has replaced ‘the universal’ and ‘space’ has replaced ‘time’. (Therborn, 2000 in Brambilla et al., 2015)

The *spatial turn* (Rumford, 2006), indeed, gave new meaning to the idea of space, pushing its definition beyond the territorial limits and turning it into a powerful metaphor of the contemporary world, a bold paradigm of political and social relations. If this process, on one side, increased alternative approaches to some disciplines before predominantly analytical (i.e. geography), on the other, inspired new reflections about the genetically rigorous and fixed nature of borders.

Then the phenomenon of globalization, - whose effects have pervaded all human fields -, pointed up the potential of virtual dimension: there was no more need of physical space to meet and relate, but increased significantly the request for cultural and symbolic landscapes to live, places able to represent ties and territorial belonging, to tell stories, to draw qualitative and personal images (Farinelli, 2009). This shift decreed the ‘death of distance’, the end of territory as a measurable space: «[w]ireless is killing location, putting the world in our pockets. The communication revolution is profoundly democratic and liberating, leveling the imbalance between large and small, rich and poor. The death of distance, overall, should be welcomed and enjoyed. » (Piguet, 2004 in Brambilla et al., 2015)<sup>2</sup>

Globalization has severely impacted territoriality from a theoretical point of view but, mostly, has conditioned its transformation and management potentialities. This phenomenon has ‘de- solidified’ the contemporary world asserting its fluid and *liquid* complexity (Bauman, 2000), but above all it introduced the ‘borderless’ world model, questioning the national hierarchies and the concepts of ‘center’ and ‘periphery’.

But paradoxically and just in this context, the topic of borders returns: « [...] border, that seemed over-passed during globalization, now come back strongly boosted in a universal dimension. Globalization is the shifting of the border until its conceivable limits. [...]» (Ferrara, 2011) At the turn of the new century, in fact, many disciplines involved in cities and territories studies report an unprecedented explosion of various typologies of borders: static or naturalized lines that mark the limits of the authorities and emerge usually for reasons of surveillance, regulation and fear.

So, as Balibar says, «borders are everywhere»: this multiplication, or *overproduction* and *overactivity* of borders, turns them in interpretative lenses of the the contemporary condition of territories and communities and also in strategic objects valuable to define new operative meanings and tools in planning fields. After all, these liminal spaces determine a new spatiality which represent the bond between different forms of power and urban patterns defining notions as citizenship and territorial identity.

### **Borders, Bordering, Borderscapes**

The introduction of *bordering*, namely the process of building borders, gives the possibility to gradually see borders as social practices of spatial differentiation and to place them in a mutable framework. This ‘processual turning’, occurred between the 80s and 90s, has released a critical potential of the idea of border, highlighting the need to find an innovative concept that could express its plurality in the decades to come. On this point, the notion of *borderscape* seems to enrich the reasoning developing a more detailed image of the complex contemporary dimension of the liminal spaces from an ontological and methodological point of view.

The formulation of the term, - *borderscape* -, is part of a widespread practice of using the suffix ‘-scape’ to give to some spatial components a conceptual complexity and, at the same time, a

<sup>2</sup> Cf. C. Brambilla, J. Laine, G. Bocchi G., *Borderscapes: Imaginations and Practices of Border Making*. Routledge, 2015;

certain degree of ambiguity. As with the word 'landscape', this suffix not only confers aesthetic and symbolic values but, above all, links its original meaning to the term '*shape*' referring to the action of '*giving shape*' to spaces. This semantic process is only a part of the broader evolution of the concept of landscape that conquers new importance in recent decades combining with urbanism (reference is to the Landscape Urbanism theory developed in 2000s mainly by Charles Waldheim, Mohsen Mostafavi and James Corner), overlapping, or sometimes even replacing, the notion of architecture. This extension of meaning introduces the possibility of new imageries and narrative for the borders: not only lines on a map, but dynamic and infrastructured landscapes.

Among the most interesting studies on the combination between 'borders and landscapes', is worth mentioning the research by the Dutch planners Topotronic, led by Arjan Harbers. Even in this study<sup>3</sup> the political-institutional component of borders emerges as an influencing factor:

«political ideologies have affected architecture since earliest times. Government buildings and urban ensembles reflect not only the *zeitgeist* but also the political climate at the time of building. [...] An attempt to make sense of this patchwork [...] with different political systems, traditions and alliances requires case studies, new classifications and recommendations on a continental scale. The best places to carry out such research are border areas, the fault lines between political entities.» (Harbers, 2003)

Contemporary territories, especially the most infrastructured and equipped, are forms of 'logistic landscapes' (Waldheim, 2006; 2016)<sup>4</sup>, a specific typology of *-scape* that not only guarantees the functioning of society, but also transforms systems condensing the urban plots.

«'Magnets' like these (i.e. fast rail links, airports and motorways) shape and solidify the urban field into one of a number of *scapes*. We shall describe the distortions borders bring to the built environment or nature as 'border solidifications' or borderscapes. Borderscapes can find expression in various ways.» (Harbers, 2003)

Plurality and dynamism of borders are often causes of ambiguity in operative use. The proliferation of terms coined to represent the diversity of borders, moreover, seems to confirm both the richness and the disorder of the theme.

Border, boundary, limit, margin but also barrier, frontier or threshold, more or less each of these terms refers to the same basic concept: an element that is located 'between' other things, that divides, communicates the end of a situation and the beginning of another, marks a decisive structural variation. Going further, it is possible to affirm that a border is something that separating connects (or vice versa, which separates connecting) and, moreover, that produces an ambient, a field with its own genetic characters. In this sense, it is crucial to study the 'border space' or even better the border 'as a space' (Zanini, 2000).

These lines of thought often result in varied and complex disciplinary plots. The terms listed above are not synonymous but allow variations often depending from the overall scenario. Still, two guiding ideas should be highlighted. First, border is an element with variable thickness and size whose form is difficult to describe and represent in a finite way; it is an architectural figure (Crotti, 2000) with many potentialities that requires dedicated codes and suitable languages. Secondly, border is an intermediate space made of streams, bonds and trading, a 'unifying suture' more than an 'insulating barrier'<sup>5</sup>. In this specific research, border is conceived as an interface that presupposes transition and motion, a 'dynamic threshold' where, while flows and forces converge and diverge, identity and character of communities and places condense.

<sup>3</sup> A. Harbers, Borderscapes. The influence of national borders on spatial planning, in Broesi R., Jannink P., Veldhuis W., Nio I. (eds), "Euroscapes – Forum 2003", pp. 143-166, Amsterdam, MUST Publ. and AetA, 2003;

<sup>4</sup> Cf. C. Waldheim, "Four: Post-Fordist Economies and Logistics Landscape". In: Landscape as Urbanism. A General Theory, Princeton University Press, Princeton and Oxford, pp. 69-85, 2016;

<sup>5</sup> Cf. K. Lynch, L'immagine della città, Marsilio, 1964 (ed. 2006);

## Methodology

### Port City Borderscapes

In theory, the contemporary concept of border has lost its classical nature of dividing and defensive element to assume a more heterogeneous and active configuration. However, the operative experience shows a quite different picture, especially in the field of spatial planning, where the issue of borders almost doesn't exist, or rather is managed in a random, non-specific way. Yet, in some particular cases, - i.e. the boundary between a city and its own port-, interesting characters of alliance and synergy along the administrative border are detected.

The port condition always shows a certain attitude to change. Because of the incessant technological and infrastructural developments and the global maritime and commercial dynamics, the structure of the port city is often subject to profound cycles of adjustment and upgrading. The most complex and evident combination of patterns and fluxes condenses along the administrative boundary: though it is often perceived as space of conflict, the liminal landscape located between a city and its port is a responsive interface characterized by strategic potentialities and, firstly, subjected/willing to change. Port city is a system that has undergone secular contaminations and, in the current framework, reports opposite scenarios that are at the same time unitary and multiform. It is an organism with particular qualities that define a 'distinct urban category' (Ducruet, 2011) turning a *general city* in a *port city* (Broeze, 1997). In order to better understand this distinctiveness, continues the historian Broeze, it is necessary to conduct a multidisciplinary exploration about ports and cities, but even more recognize a starting point of the reasoning: « [...] the port creates in the urban community that surrounds it a "distinctive form of environment", a *milieu* that derives its uniqueness from the physical and economic dominance of the port. Hence the analysis must take its start at the places where goods and passengers are transferred between ship and shore, the ultimate rationale of the port. » (1985)

The definition of a specificity of port landscapes is influenced by a combination of global trends and local forces: trade by sea moved goods and knowledges between very distant places of the world and strongly contributed to the spread of architectural and urban ideas capable of shaping cities and territories over time. The urbanist Carola Hein gives value to the *networked analysis*, a research that assesses how port cities are unique organisms among the built systems but, at the same time, have common traits and become, as far as geographically distant, mirrors of each other. This ambivalence makes ports valuable examples to explore global relations and their impacts on the urban form.

The complexity of the urban-port category is object of historical studies long since, but has extensions also in investigations about geography, sociology and urbanism, giving rise to a current that studies port cities in their promiscuous dimension, the one generated by the mix of civil and operative structures along the shared border. This situation shows an intermediate condition, a kind of *otherness* compared both to the city and the port: basically, it is a new urbanity, - a 'portuality' we can say -, with strategic potentialities solidified in the border space between the two entities.

This 'portuality' status originates a particular landscape where « [...] maritime and associated networks create dynamic, multi-scaled, and interconnected cityscapes. I call them port city- scapes, and they exist around the world. [...] As a result of the various flows between port cities, specific elements of their respective urban environment are related through a range of factors such as funding, technology, style, concept or building material. » (Hein, 2011)

So, this kind of border space or *borderscape* is a very important area, an urban-port threshold that materializes in the complex space along the margin between the two authorities, in that recurring landscape in which the city and the port are side by side.

The threshold is a spatial figure which doesn't have a standard shape but various patterns and models

according to different aspects usually related to the morphology, planning tools and governance of the territories. The urban-port threshold is, indeed, a unique and multiform system, a ‘filter space’: precarious, discontinuous, fragmented into parts where the juxtapositions take sufficient shape to acquire a dimension and be recognizable.



*Fig.1 Port city-scapes, Hamburg, 2012. Source: Hafencity Hamburg, [www.hafencity.com](http://www.hafencity.com)*

In this sense, the institutional side seems the most suitable channel to explore the current nature of those thin areas between city and port in different contexts of study, in fact «[today] the forces that shape geographical shifts in the port-city interface have become much more complex, and are better explained from an institutionalist point of view: a view that attends to the rules, norms, and beliefs that govern the policies and plans for city and port, without neglecting the ever-changing behavior and capabilities of those affected by the port and port-related projects.» (Daamen, Louw, 2013) The urban-port threshold is, therefore, a strategic zone in which are enclosed and represented the potentialities of dialogue and project of the ‘portuality’ regime and condition.

### **The Administrative Boundary**

The urban-port boundary, the one that divides administratively a city and its port, is a particular kind of border that marks two different territories, equally essential in economic, productive and figurative-symbolic terms both for the local and non-local contexts.

It is a political idea, a regulation need originated in the middle of the last century to deal with the port development and the global introduction of new trading methods.

In Europe, its origin is not always simultaneous in the various ports. In general, if we are referring to the physical separation between city and port (barriers, fences, gates) it must be clarified that this does not always coincide with the administrative disjunction between the two entities that is defined, instead, by the creation of the port from a legal point of view.

The research developed by the International Maritime Geography in the past century is probably the main tool thanks to which it is possible to understand steps and reasons that led to the contemporary condition of contrast and marginality. In short, as described by the geographer Brian S. Hoyle, in the first phase -that lasted about fourteen centuries from Ancient Middle Ages to the nineteenth century, city and port lived in a symbiotic, spatial and functional integration. From the beginning of the 19th century, however, the growth of maritime traffic and the advent of the industrial age caused the first strong separation of the two organisms. The complexity and automation of port mechanisms accelerated the exodus of ports from the centre to the suburbs. This phenomenon is increased in the 20th century when containerized trade spread worldwide together with a gradual but steady evolution of the fleet size (naval gigantism): at this time, the first ports consortiums are set up as independent administrative realities and new laws impose specific restrictions between operative spaces and inner city. The new port territory generated and developed throughout the 19th century in Europe was conceptually closer to a support mechanism than to a district of the city. The shape of this support, indeed, was designed in a strictly functional relationship with the dynamics of movement. (Rosselli, 2005) The container, introduced by an idea of the American entrepreneur Malcolm McLean in 1956, is perhaps one of the earliest and most viral global-diffusion phenomenon. It impacted the dimension and the organization of port areas, adapting the spatiality of the coastal territory to the new logic of the market and the needs of safety in navigation and production performance; observes Marinke Steenhuis: «it put an end to the very concept of quayside warehouses, because the container itself is the construction.» (2015)

This evolution has completely revolutionized the relationship between city and port. For a long time the two entities lived integrated and the border between them did not exist because the spaces of community life (squares, markets, quays, canals) coincided with the spaces of exchange and work. By contrast, from about sixty years ago, the standardization of trade and intermodal transport on a regional scale imposed the definition of specific boundaries between the port and the city areas, in order to steer more efficiently the process and ensure competitiveness to the port. This change gave more autonomy to both territories, but at the same time, produced an irreversible separation after which also the original port core, often placed in the historical inner city, it is unused and disposed. In Italy, in this phase, customs walls, barriers and gates appeared and, almost simultaneously, it is possible to detect the institutionalization of many port organizations recognized by the State. The port was no longer part of the municipal territory but an independent body guided by autonomous companies; in some cases, i.e. the port of Genoa, the Independent Port Consortium was set up even in 1903 and in the following decades extended his authority on the coastline.

When ports became independent entities, the urban-port border began to emerge as a real figure. A line which was perceptible in everyday life in the movement of people and goods, a physical barrier and a functional margin. Says Hoyle on this topic: «the port-city interface is a phrase that would not have been understood in past times when an interdependent city and port shared a common identity. [...] As ports and cities have developed new roles within contrastedbut interrelated and interdependent systems at local, regional and global scales, a new interface between port and city has emerged [...] as a major concern of many people and organizations over the past fifty years.» (2006)

This condition lasted until the '90s of the last century, when the growth of the port, the increase of the terrestrial network and the speed in the logistic processes, made inevitable the drafting of a specific regulation. Law 84/1994 (4) has given to major ports a new perspective. First, it established the development of specific port plans (art. 5) that are no longer viewed as simple programs for maritime and infra-structural works, but are understood as articulated and complex processes of planning and management. Moreover, the norm instituted the Port Authorities as public entities with legal personality to control, manage and enhance the largest ports (art. 2).



Compared to the past, when port was seen as a static moment, today the port area is turning into just one link in a continuous transportation chain. In this perspective, ports not only tend to adapt physically to the new requirements of the transportation cycle, but must constantly adapt to the demands of the market and its rapid transformations. This has kindled the need to set up flexible spaces that may be quickly reorganized. According to Rosario Pavia, the different speed at which transformation occurs in port areas compared to urban areas is one of the key factors that have caused the port to behave as a closed and separate system from the city.

Following the prescriptions of Law 84/1994, the port is institutionally divided from the municipal territory by defining an administrative boundary. The limits of the territorial jurisdiction of each Port Authority are decided by the Minister of Transport and Navigation and determine not only the overall layout of the port, but also the area within the Port Master Plan where guidelines are applied. Another important paradigm of Law 84/94 is the involvement of local authorities in the development of the Port Master Plan: indeed, the Municipality and the Region organisms must contribute in the drafting and, after, in the approval of the strategic guidelines. Despite this boost to interaction, a constant fragmentation between municipal governments and the Port Authority is still observed. Again, according to Pavia, these diverging trends and necessities present themselves with a bias, without an overall strategy capable of understanding the new connection between the economy of the port and the economy of the city, between the identity of the port and the identity of the city.

Even with the 2016 Port Reform<sup>6</sup>, there are not substantial modifications in terms of definition and management of the administrative border. Basically, the Reform aims to revolutionize the governance system by reducing the number of the actual seaports and combining them in territorial clusters, called Port Authority Systems (ADSP). This evolution suggests a more comprehensive involvement and a broader view of the regional scale at least, but practically does not change the role of the border which in fact keep its regime in legal, functional and planning terms.

The administrative boundary, therefore, exists and his regime is effective. What is important is to recognize an alternative aspect, an emerging potential of liminal landscape that helps defining the complex and multiform identity of port cities. In this perspective, «the port-city interface may be described as a system, or as a concept, or as a series of mechanisms that, collectively and individually, link port and city, closely or tenuously. [...] In spatial terms, on land and water, an interface zone exists between urban activities and maritime activities. Through this zone there may run a line of demarcation between urban and port administrations. The zone may be an area of cooperation or of conflict, and may present a scene of degeneration and decay, or may be characterized by regeneration and lively growth. » (Hoyle, 2006) The institutional issue, indeed, is relevant in all the different situations of interface between port and city. This condition identifies the forces involved in the border space and, above all, shapes the governance model, that set of processes through which territories are governed by local authorities.

A significant example of strategic interface definition is the port city of Rotterdam, where the administrative boundary is effective as an active collector of transits, cultures and economies. In short, after a century of municipal management of the port, in 2004 the government set up the Port of Rotterdam, a public limited company led by two stakeholders, the City of Rotterdam (70% of the shares), and the Dutch State (30%). The new political-territorial governance model has revolutionized the role of the port: not only a 'landlord' (owner of the areas), but also a 'developer' (process active manager). This transition gives the institution a new profile theorized by economists Van der Lugt and De Langen as the 'beyond the landlord role' (2007). The status of 'government corporation' allows the port to be more involved in the market and in activities not strictly related to his property but managed

<sup>6</sup> L. 28 gennaio 1994, n. 84, Riordino della legislazione in materia portuale <http://www.assoporti.it/sites/www.assoporti.it/files/Legge%20n.%2084%20del%2028%20gennaio%201994%20testo%20vigente.pdf>

beyond the physical limit of the port in a more direct dialogue with the city.

This example confirms the multiplicity of urban-port thresholds: in fact, it is possible to affirm that the variation of the governance model generates different figures of the border. In this sense, we can state that the landscape produced by the administrative status - the *port city borderscape* -, is the best space to represent the 'portuality' condition, that particular and conceptual dimension through which the intensity of spatial and economic implications embodies and defines the identity of the contemporary port city.



Fig.2 *Port City Borderscape, Genova, 2012. Source: Luigi Merlo.*

## Conclusions

### **A matter of representation, the development of a matrix**

Illustrating the border areas requires the development of a technique of representation but, first of all, the exploration needs to clarify its methodological position individuating those tools able to grasp and communicate the multiplicity of information through which borders are constantly affected and transformed.

On this subject, it is useful to recall Mohsen Mostafavi's question, «what are the tools, conventions, and scales that we should employ in order to tell the story, describe the characteristics of a particular territory, including even the narrative of dynamic change and transformation?» (2016) It is, of course, a matter of representation but, above all, a matter of stories and narratives that, just as in a piece of fiction, contain meanings that can be altered, contaminated by external factors or intentionally transformed by a project. For these reasons, we need to develop a 'cartographic imagination', «a specific mode of description of topography» according again to Mostafavi words. This means the improvement of a new capacity of seeing 'reality' through conventional signs and, at the same time, of preserving its 'visionary' and 'conceptual' aspects. In this perspective, everything (or nearly) depends on the purpose of the map and on the story that aims to tell on that particular occasion.

Using conventions and diagrams to represent spaces leads to elaborate a symbolic language, rich in abstraction but still full of contents to express the spatial components. Such maps should also be able to project themselves towards future configurations, disclosing the dynamism of the landscape outlined on paper and, above all, returning the inseparable interrelationship between what is given - topography - and what is yet to come - design.

However, the representation of borders and *borderscapes* is particularly controversial. It is something about the bond between spatiality and law, about the visual portrayal of a contradictory and paradoxical condition, but not only. A matter that concerns mapping something that exists but is not visible, that determines an institutional regime and a binding statute, but is often quite invisible. Locate a border into a space, - 'give it a place' -, has a lot to do with 'where' the border really is and depends from the knowledge that people have of its existence (Rumford, 2006).

This reasoning relates to the unstable processes which determine form and character of borders, namely relies on the individual and collective practices involved in the construction of the border concept. Amongst other, Kevin Lynch provides an important reference about the issue of borders representation: in his famous research on the evaluation of city form, he formulates a new criterion - *imageability* - and shows its potential value for develop different mental images of cities based on dwellers perceptions and experiences of living spaces<sup>7</sup>.

Nevertheless, the issue of invisibility of territorial borders is real, says Brambilla: « [...] questioning the 'where' of the border also involves a focus on the way in which the very location of borders is constantly dis-placed, negotiated and represented as well as the plurality of processes that causes its multiplication at different points within a society. » (2015)

In the specific case of port cities, the urban-port border describes a crystallized state in which today, in most cases, the physical limit of the two territories coincides with the administrative one; as mentioned, this separated condition is often worsened by planning tools that persist to regulate the spaces surrounded.

Borders are often drawn as polylines, but are actually uncertain spaces with variable thickness, thresholds that implicate movement and in which are recognizable characters that make possible, or impossible, different kinds of interferences, connections, crossovers. So, the purpose of the port-city threshold map is to represent the intermediate and mutable condition of 'portuality', caused by the presence of the border, and to embody « [...] the imaginary power of borders as a concept.» (Sidaway, 2007)<sup>8</sup>

For this end, the research methodology elaborates a specific tool, a 'matrix', which catalogs different but recurring *models* of the urban-port threshold by grasping various characteristic, or better *aspects*, that affect the port city *borderscape* among several European port cities. Specifically, the exploration is conducted through the analysis of three particular *aspects* of the port city border: the physical and morphological one, the institutional one and the functional one, more connected to all the planning components. Here some examples of the threshold *models* outlined so far: crossed, dotted, multiple, filtered, barrier, infrastructured, interfering or organic thresholds...

Obviously, the *aspects/models* 'matrix' operates a simplification, or better a conceptualization, of some *aspects* in order to 'shape' the complex and elusive nature of the interface; a still in progress version of the 'matrix' is shown below.

<sup>7</sup>Cf. K. Lynch, *L'immagine della città*, Marsilio, 1964 (ed. 2006);

<sup>8</sup>J. Sidaway, *The Poetry of Boundaries*, in P.K. Rajaram, C. Grundy-Warr (ed) *Borderscapes: Hidden Geographies and Politics at Territory's Edge* (Borderlines series), University of Minnesota Press, Paperback, pp. 161-181, 2007

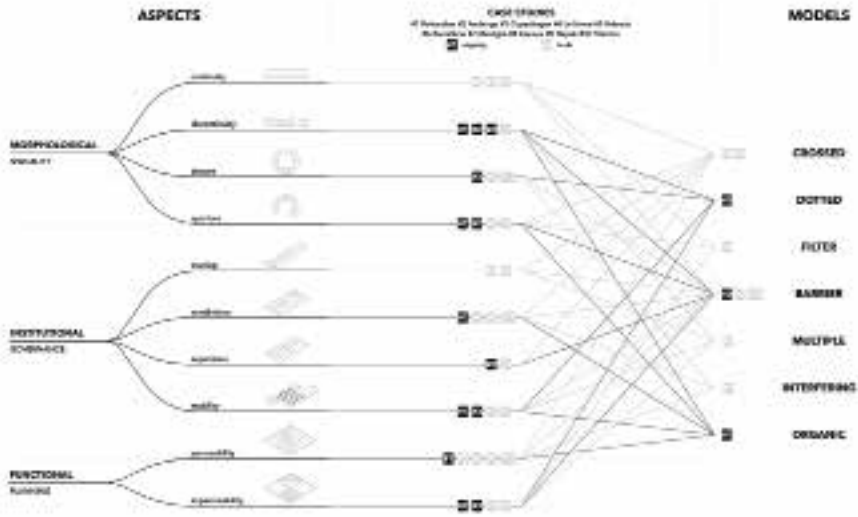


Fig.3 Matrix (in progress), 2017. Graphic elaboration Beatrice Moretti.

Talking about graphics features, a useful source is the study of different forms of ‘line symbol’ produced by Jill Desimini and Charles Waldheim<sup>9</sup>: « [...] in cartography, the line is used for many things, including hachures and contours, boundaries, borders, property lines, rivers, infrastructure, and, finally, routes. [...] [Lines] are generalized, approximating lengths and curves, depending on the scale of the drawing.

They not only connect precise points but also tie together relational elements. Lines represent both physical features and distances between places. The line typology describes a hierarchy of physical presence and character in the landscape. The density of lines alone can reveal patterns of settlement and urbanization, while choices of type encode information. [...] The thickness of the line, too, is embedded with information about use, profile, material, distance, speed, and time. In route maps, the physical depiction of the ground is thus overlaid with a temporal narrative. »

So, a simple line, studied in shape, color and proportions, can contain many meanings but also express strategic potential. Different types of lines constitute a starting point for the elaboration of a personal set of codes useful to draw different geographies of the threshold.

The map itself is a simplified representation that requires a sort of inaccuracy or a certain degree of approximation and compromise. More the contemporary technology has provided precise and realistic media to describe the world, the more the search for new languages has spread in order to represent relationships, flows, divergence, even impressions and feelings. Maps have been enhanced thanks to conventional signs that became less and less interested in the physical objects, but instead increasingly concentrated on space phenomena, on the stories derived from the experiences, on the resulting landscapes.

Though this evolution has requested a radical update in the field of drawing, it has not changed the original ambiguity of maps: still they are imperfect images, non-neutral visions that return an

<sup>9</sup> Cf. J. Desimini, C. Waldheim, *Line Symbol*, in J. Desimini, C. Waldheim, *Cartographic Grounds. Projecting the Landscape Imaginary*, pp. 196-220, Princeton Architectural Press, 2016;

indefinite, plural and dynamic ‘reality’. These qualities seem to be in accordance with the variable nature of borders: they are in tune with the ability to interpret the continuous changes happening in contemporary spaces, to put together the multiscalarity issue and, above all, to enhance the diversity of urban-human cultural heritage often embedded in the liminal spaces.

In the end, the study of borders as powerful icons of the contemporary territoriality, demands rather than a comprehensive technique of representation, of a ‘multi-perspective approach’, like the one suggested by Rumford « [...] borders do not have to be visible to all in order to be effective. The case for a multi-perspectival border studies is then outlined: borders cannot be properly understood from a single privileged vantage point and bordering processes can be interpreted differently from different perspectives. » (2012)

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# **Historical identity of Perugia: analyses of the representation of the city and the importance of the tower during the image's transformation**

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## **Abstract**

The study is aimed to understand the importance of the characteristics elements of the city, that now has lose because of the transformation during the centuries. In particulars, the research were focused on the towers, which were very important for the identity and urban landscape of medieval cities of Italia's centre. The case study is located at Perugia, an important medieval city that was subjected to completely destruction and transformation during the transition from the Middle Ages to the Renaissance. The first buildings that were destroyed by the power of Pope Paul III Farnese were the towers, which represented the key role inside the urban pattern. The study considers these buildings as an important urban heritage inasmuch the city identified itself with these and, because of it, the new domination decided to destroy all towers inside the historic centre. The first step was the study of landscape's perception thanks to medieval portraits and the literature, then the research focused on the identification of these characteristic signs in which Perugia meets again itself. Despite lots of towers are completely lost itself, today the tower remains the most representative sign for the city, and the research's results want to open a new course to valorize the important urban heritage that was incorporated inside the urban pattern.

## **Introduction**

The tower was the most representative element of medieval city even if its diffusion started during the Mesopotamian civilization. At first, they were born to fortify, but during the centuries they became the symbol of the city's aristocracy and independence, in particular Bologna, Florence but also othersmallercities such as San Gimignano and Perugia.

Perugia is a city located in the centre of Italy, it has a particular shape similar to the five fingers of a hand, and it was characterized by several transformations implemented by the control of the ancient populations.

This study aims to investigate the centrality of the tower's structure during centuries, and how they contributed to the transformation of the city, in fact the towers had a key role for both territory and its evolution.

Its origins started during the VIII century BC, when Perugia was an important military outpost of Etruria's territory, in fact its lands were provided of a lot of sighting towers in order to control all the area and to defend them from the enemy's attack.

There were other motivations about the diffusion of the towers, the first one was the orography that wasn't allowed to develop itself on horizontal, but vertical; furthermore, during the medieval period, the tower represented Perugia's richer class, like the Baglioni family's. Perugia experienced a period characterized by prosperity during the Middle Ages and it is sure enough that inside the historic centre of the city there were more than seventy towers, even if the study of portraits (Fig.1), called "Gonfaloni", and of literature notice about 42 towers.



Fig. 1 Gonfalone della peste di Berto di Giovanni, Cattedrale di San Lorenzo, 1526

In the sixteenth century BC, Pope Paul III Farnese arrived in Perugia and decided to conquer the city with the demolition of the towers; this event has implicated the end of the local aristocracy and, at the same time, the change of Perugia's *forma Urbis*. In fact, during the domination of the Pope, Perugia was exposed to an hard control and to the phenomenon of "scapitozzamento" of towers, that is a decapitation and incorporation of these inside the urban pattern<sup>1</sup>.

The importance of this event concerns the loss of identity and, at the same time, the loss of independence of the city, represented mostly by the Baglioni's family.

The local aristocracy was located on Landone's hill, that together with Sun's hill, were the religious and political heart of Perugia, but these areas were totally altered especially Landone's hill because of the construction of the Pope's fortress, called *Rocca Paolina*<sup>2</sup>.

Perugia during the Renaissance, suffered a tough transformation of its urban structure, it is possible to see the evidence among the buildings of the historic centre; today a lot of towers were converted in a lot of uses and, at the same time, have lost their features.

In this paper, we will examine 25 towers documented by literature and archival sources, and that are dislocated inside the medieval walls of the city.

### The research aim

Perugia's historic centre, in particular the urban pattern characterized by the stratification that is architecturally and historically significant for the study of urban shape's change, holds his identity and reveals it through the towers. In detail, the study aims to investigate the different aspects of the city through the comparison between the medieval image and today's Perugia's image with regard to the structures of towers. This work examines the reasons of their disappearance.

<sup>1</sup> P. Camerieri, F. Palombaro, *La Rocca Paolina un falso d'autore. Dal mancato compimento alla radicale alterazione del progetto di Antonio da Sangallo il Giovane per il Forte di S. Cataldo*, Perugia, Provincia di Perugia, 1988

<sup>2</sup> M. Filippucci, *Dalla forma urbana all'immagine della città: Geometria e Figurazione dello spazio costruito*, (Doctoral Thesis) Università La Sapienza, Roma, Italia, 2012



The approach employed is based on the study of literature and on the ancient portraits that represent a turreted city that now we have lost, and allows us to define their features and their important role inside the city. The attention was focalized on the transition between the middle ages and the renaissance because of the arrival of the Pope Paul III Farnese who decided to change the image of the city and to deprive it of its towers, symbol of affluence and independence.

After the in-depth analysis, the parameters for the research and cataloguing of these element were established, and the standards are:

- 1- Relationship between height and width (Fig.2)
- 2- Relationship between width and depth
- 3- The wall's weaving

The influence that the Pope had on the buildings and the proof of the change of Perugia's shape, led us to rediscover the real image of the city and the importance of heritage that needs to be enhanced.

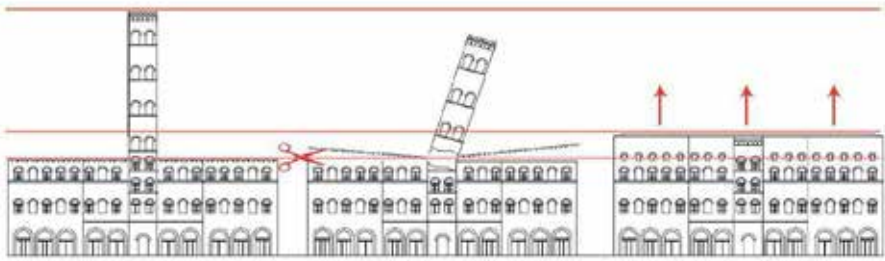


Fig. 2 The Phenomenon of Scapitozzamento

### The medieval Image of Perugia

The research started with a systematic examination of the whole system of towers inside the medieval and etruscan walls.

The image of Perugia's city was characterized by the elevated number of towers; it can be possible to know this, thanks to the ancient portraits which represented the city as a turreted place.

Perugia promoted the construction of these structures for different motivation, in fact, the orography of the place didn't allow the horizontal development, and at the same time, there was the change of use destination from defensive to residence.

In the historic centre of the city, the towers belonged to the local aristocracy that used these both as a residence and as sighting buildings to defend their property and their control against the other powers who wanted to conquest the city.

The identity of the city was given by the towers, thanks to their relevance about the rhythm of the space but also because these buildings were the representative point of the city.

This study followed the method of comparison between the current image of Perugia and its medieval image.

The change of the skyline pushes us to investigate the causes of this transformation and the first step was the research of local literature and the survey about the local aristocracy.

The ancient portraits, called "Gonfaloni", allow us to identify the position of each tower and, by comparing the result with the sixteenth-century plans, it is possible to see that many towers were absorbed inside the urban pattern by decapitation and other towers were totally destroyed. The survey was carried out combining traditional and digital techniques, in fact after the study of the medieval portraits and the process of locating, it was possible to seek regularly all towers identified.

Although the medieval literature notice about 42 towers, even if the other sources notice about over 70 towers of this kind of structure, today we can find 25 surviving towers according to the comparison between the various sources.

The process of cataloguing is based on three important elements: relationship between height and width, relationship between width and depth and the wall's weaving.

The first element represents the key to understand deeply the rule of these structures, in fact the relationship was about 1:8 instead today is about 1:4; this is because of the phenomenon of "*scapitozzamento*" that has involved all the towers of the city due to their importance in the control of Perugia's city.

The second relationship examines the base layout, in fact, many towers have a square-shape and some of these present a rectangular-shape.

The last point is about the wall's weaving which is represented by white limestone bricks. During the survey around the historic centre, it was studied their dimensions and their relationship with the context and were found more than one-hundred towers inside the medieval walls, differently to the results of the research made by Roncalli di Montorio Francesco, Nicolini Ugolino, Nucciarelli Franco Ivan.

The result obtained after the survey, was a digital cataloguing of all the towers (about 23), which were converted in residence, thanks to AutoCAD 3D software.

The 3D models were oriented and scaled using AutoCAD 3D and isometric axonometry views were produced and drawn, and they provided a detailed basis on which subsequent stratigraphical considerations were carried out.

The considerations allow us to understand the motivation of their perish, in fact during the passage between the fifteenth-century and sixteenth-century Perugia's city was completely revolutionized by the power of Pope Paul III Farnese who decided to get rid of all the towers inside the city.

The principle reason of the Pope's choice was based on the fact that the towers were the most representative elements of identity and independence of the city, and therefore these structures were a disturbing element for the new power.

The stratigraphic analysis allows to understand the process of absorption of all this kind of structures inside the urban pattern, in fact their wall's weaving succeed in highlighting the different types of material used for the new constructions.

In the analytical phase, it was studied the place where the towers were built because it represents the key point of the interpretation of the change, in fact it was possible to distinguish two important places inside the historic center: Sun's hill and Landone's hill.

The first one represented the important religious and political hearth of the city, and today there is no mark that recalls the towers' structure even if the medieval portraits give an image of this area as fortified.

The second important place is Landone's hill, and it represents the antipode of Sun's hill because in this area lived the Baglioni's family, the local aristocracy who were considered a disturbing element for the Pope's new control.

The nobility's residences were absorbed inside the new fortification that the Pope decided to build there, and today it is possible to enjoy these by walking around the structure that was called Rocca Paolina.

The other towers dislocated along the streets, are completely absorbed inside the new buildings and the characteristics elements that allow us to recognize them is the belt course, which highlights the reduction of their height.

After this deep analysis it was possible to define the importance of these structures during the transformation of the urban shape, and in spite of the fact that today there aren't as many as in the past, the towers remain the characteristic element of Perugia's skyline.

## Conclusions

The results that the research give us, is the possibility of cataloguing medieval towers inside the historic centre of Perugia.

This outcome allows us to have a completely vision of the medieval image of the city, and how these were decisive structures for the urban transformation.

In fact, the study brings us to distinguish three categories of towers: residence towers, belfry and watchtowers, at the same time it was done another distinction inside the group of residence towers that is divided in three macro-areas that are Landone's hills, Sun's hills and the rest of the historic centre.

The reconstruction allows us to define the importance of the towers inside the urban heritage and although today their presence is more limited than in the past, they continue, however, to be a representative element for Perugia's skyline (Fig.3).

Furthermore, the cataloguing opens a new way to study and valorise these important structures inside the cultural heritage of the city, and according to this research it's important to study the towers if anybody want to understand the profound transformation of the urban shape.

In spite of the Pope's domination and his will to destroy the city and to delete its identity, the towers will remain the representative element of an ancient independence and prosperity of Perugia. The research gives the possibility to examine in depth the change of a city under a new point of view that is necessary to understand the rule of the transformation during the centuries.

Probably the death of these structures allowed gathering all the little and middling cities under a unique control and ensure that one day, as how is it now, all cities were unified. The presence of the tower wasn't the principle reason of the division of the territory, but since the tower represented the identity and the independence of the city, probably it was one of the most important element. In fact, a lot of towers, especially the ones who represented the local aristocracy, were destroyed.

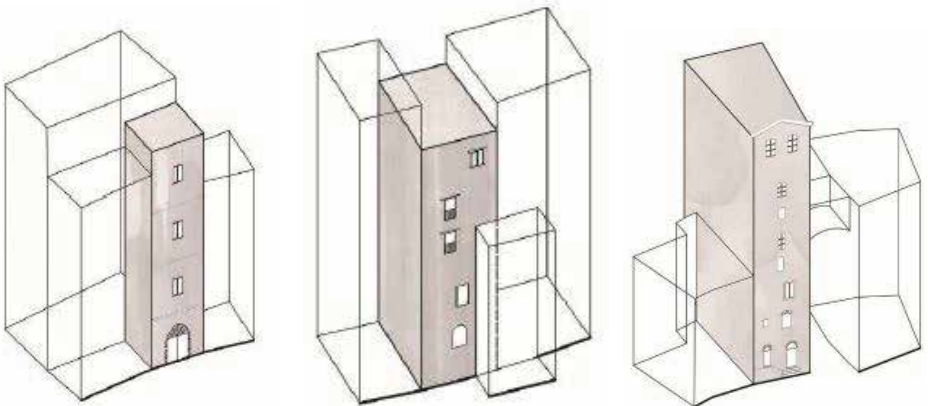


Fig. 3 Example of cataloguing

## Conclusions

Following the course of the research done in this work of thesis, the first consideration is about the shape of the tower that gave the epithet of *turrena* to Perugia's city. The tower not only in the past, but also today carries out a determinant rule inside the politics and urban strategies and it is a representative element of the city and of its fifteenth-century transformation. Their landscape value and their importance, tied to partition of the spaces, reinforce themselves thanks to the analysis of the historic sources and to the study of the comparison between the past and the present.

The orderliness of individuation allows to interpret the towers as a significant element of the local aristocracy and how these structures had a determinant rule inside the transformation of the urban shape. The phenomenon of "*scapitozzamento*" generated the growth of new constructions and it's possible to see the change thanks to the presence of belt course along the principle street of historic centre. In conclusion, after the study of all the medieval towers, we realize that the towers represent the cultural and urban heritage, which must be conserved by the institutions and at the same time it's necessary to project a plan to valorise this kind of structure and to guarantee their rebirth.

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## The Relevant Hypothesis

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### Abstract

We all believe that thinking is an individual and solitary executive function, which is entirely independent of others, and it could be considered as such if we refer to the activity itself, as it is related to the relationship between our own brain and mind.

Nevertheless, when we think about anything external or internal to ourselves, we unconsciously refer to our social and cultural background, the one in which we developed and experienced since birth.

Designers do rely on their own ideas while “thinking” about the realisation of a project, though their ideas are still interpretations of already existing and influential concepts, historically settled in the evolution of the discipline and part of an ongoing and constant cultural development. In addition, regarding the concretization of the thought, as in its codified transposition (thus forms, signs, logotypes, colours, spaces and times) the designer uses a computer and a software that were already the fulfilment of someone else’s idea.

Finally, once the project is realized, both ideas and thoughts, on which the design was built, will become part of a wider shared cultural and social knowledge that will affect others’ ideas in different times and places.

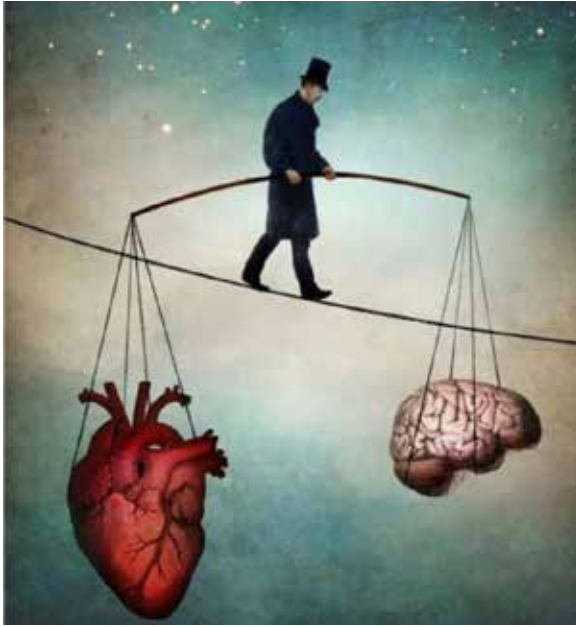
Consequently, the action of designing, even if experienced without the presence of others, still involves the mind of many and this phenomenon is not restricted to design.

In fact, we can consider the development of human thoughts as the processing of previous significant ones, which have influenced history, and those that are affecting our contemporary period, finally adding our personal interpretation to them.

Therefore, the question is: “When, how and why a concept-design is relevant to reality, as it represents something that could be potentially significant to everyone’s reality or, at least, to some?”

The aim of this paper is to highlight some Relevant Hypothesis, thanks to which it is possible to justify and legitimate the intervention of a designer’s concept-design, with the purpose of offering elements defining the discipline of design itself, from artisanship, bricolage, or self-production.

The Relevant Hypothesis, established since the beginning by the designer, before creating the concept-design, which reflects the outcome of his/her personal understanding of the world and relationship with customers, may become a valuable methodological help through which it will be possible to enlighten his/her intentions in the project.



All human beings are highly sensitive to stimuli, be they internal, coming from within, or external, coming from the surrounding environment and they respond to them with specific and sometimes complex reactions. This process is known as the stimulus-response theory.

Behavioral psychology believes that most of human behaviors are manifestations of the interaction between stimuli and responses. Although, it is likely that reasoning develops also in terms of objectives, motivation and the possible retroactive feedback, especially in the case of complex living organisms. As a matter of fact, thanks to retrospective thinking our species has learned to automatize certain responses more than others, as they appear the most convenient in new environmental situations which resemble other occasions that we have already experienced in the past. For example, the action of waving at a bus that we are willing to get once it gets to close proximity, has become an automatic action as we have processed that cultural response over the years. We have repeated it many times, performed it in the presence of other individuals and we have watched others doing it. In this case the activation of cognitive processes is not required as it would be if an unpredictable event occurred (a bus approaching the bus stop when a strike was announced) which would demand us to step away from that mechanical action we have stored in our memory. Consequently we can consider our responses to that situation as being already assimilated. On the other hand there is the issue of adapting to unfamiliar events and contexts. In those cases it is essential to elaborate a more flexible way of thinking without exclusively relying on retroactive thinking. Therefore when facing new and unknown experiences it is critical to identify the causal and intentional relationships required to manage them, as our response will either evoke or not an appropriate behavior. In fact, each individual determines and selects the variables that are more significant to them in evaluating a given situation in order to establish, according to his/her aims, the most convenient actions.

The process of deciding what is proper in a given situation, in which the individual intuitively feels capable of putting into effect his/her objectives, is the reflection of a desire to control his/

her existential relevance to the reality in which he/she lives. As an example, if I found myself in the urgency of setting up a tent and believed that I had the appropriate competencies to carry out my task, I would carry on fulfilling my desire to set up the tent. If, instead, I were to consider more convenient, according to my abilities and the context, to level the ground letting others to set up the tent, my actions would move towards another direction. In the name of this process, we can introduce the “Relevance theory” which states that, in any situation, it is possible to utilize one’s designing abilities in order to complete a product that complies with the relevant hypothesis. Essentially, it is possible to control the designing process towards a specific target by following this assumption, which will probably prevail on many others.

There can be many and diverse underlying hypothesis however as they are arranged, in a figurative way, in a hierarchical order, the designer is able to determine the most appropriate ones for the given project. The lack of prioritizing certain objectives over others would cause confusion in the designer, who would not be able to develop a proper action plan. This applies to all professional fields and it is particularly critical in the case of designers, whose task is to intervene in the reality of many, materializing the current cultural idea of beauty.

Michael Tomasello introduces the concept of individual intentionality, in this respect. Explaining how this process enables the fulfilment of a goal just visioning it, while contemplating what would happen as a result of certain action rather than others and how external stimuli could affect it, without directly executing and working on it yet. This imaginary process is similar to simulating the potential perceptual experiences that could occur. In order to think before one can act, the individual must, thus, have (...) three prerequisites (...): a) the ability of cognitively create representations of an experience; b) the ability of simulating, or coming up, with inferences while applying those representations to a response-effect setting; c) the ability of monitoring those simulated experiences and to determine the possible behavioral outcomes; in order to take a reasoned behavioral decision (M. Tomasello, *op. cit.*, pg.20).



Based on these considerations, it is now possible to clarify what cognitive style characterizes the designer. He represents reality and the situations in which he operates, in terms of content and format. As a matter of fact, his/her aims, principles (and positive and negative attitudes), are the cognitive representations that he/she is aiming to maintain or create from scratch. The designer demands the realization of certain elements from his/her project and in order to do so he/she must pay attention to that hierarchy of relevant assumptions, previously mentioned, as only by doing so there will be the fulfilment of the desired objectives. Consequently, the design becomes the appropriate and relevant solution in that specific situation which will improve the quality of people's behaviors at that given moment.

To fully understand this cognitive process, to which all designers could refer, contemplate the following image representing a banana tree.



A chimpanzee perceives this experience like a human being; their visual systems are very alike, through them, the same objects are processed as well as the same spatial relationships. But which potential aspects will the chimpanzee focus on, perceiving that given scene? The experience could lead to numerous situations, yet since its main aim is finding food, the chimpanzee will pay attention to those aspects and possible details which are relevant to its goal, which could be:

- The tree is rich of many bananas;
- The bananas are ripe;
- There no other chimpanzee on the tree;
- The bananas can be reached by climbing the tree;
- There are no predators around;
- Running away once on the tree would be very difficult.

For the chimpanzee, which will take advantage of its enhanced perceptive abilities and knowledge of the surrounding habitat, the assumptions listed above are all relevant in order to adopt the



appropriate behaviors to find food. (It should be noted that also the absence of what is expected, as in the case the presence of bananas on the tree, represents a relevant assumption).

Organisms, in fact, pay attention to those situations that could represent opportunities, obstacles that could compromise their ability to reach their goals, potential sources of information on how to prevent those difficulties that could occur. In addition, as species live differently from one another, they also perceive distinctively and focus on the particular experiences that are convenient to their own way of living. In fact, for a leopard, the situation that we considered previously “bananas on the tree” would not have food as a prospective, if there were chimpanzees instead of bananas then it would become significant to it. On the other hand, the presence of the leopard represents an obstacle for the chimpanzee as one of its aims is “avoiding predators”, consequently it will look for situations that will allow it not to be in danger, as a tree, which displays only braches in its upper part otherwise the leopard, would be able to reach the chimpanzee. If we now add in, the existence of a caterpillar in the bundle of bananas, the relevant experiences for the three different species – challenges and opportunities of reaching their respective aims- will be even more diverse. As we have seen, the relevant assumptions are the result of collectively processing the aims, values and the perceptual and behavioral abilities of the living organism as a self-regulating system. Determining the appropriate hypothesis to carry out a specific behavior is a process, which takes into account all the different aspects of the way of living of an organism.

This close examination on how natural human thinking develops is essential to understand the evolution of the relevant assumptions. The chimpanzee in front of the banana tree has made several elaborative considerations that resemble the same observations that a designer makes when he is commissioned with a project. No offense, the designer must have an abstract plan which considers the potential solutions to the problem on which he will develop the appropriate hypothesis. Then he will need to arrange them according to their level of relevance, examine potential challenges and opportunities. From a professional perspective his cognitive style is characterized by patterns, categories and models of his previous experiences that represent the starting point of the project. Otherwise, it would not be possible to realize an innovative product or, in any case, a creative one. In this way, a project becomes relevant (in general) to a more behavioral or emotional or aesthetic or naval design. More precisely, let’s analyze all the cognitive evaluations of the chimpanzee. Suppose a customer requires a designer to design a representation of a banana tree. Let’s consider the first two cognitive assessments of the chimpanzee, as they were ours. The design of the representation of the tree would rely on those actions, which are considered significant and critical to the project. We are referring to those experiences evoked in the user, by the vision of the tree.

Considering the first one, the main relevant assumption is the quantity of the fruits that a tree could carry which could stimulate to create positive features which will induce the desire of bananas in the user. If this is the designer’s aim, he might want to design the tree highlighting the fruits by coloring them carefully. Consequently, the objects considered will not just be appealing for their quantity but also for their aesthetic appearance. The designer will instinctively move towards the quality of the design, as it relates to the ripeness of the fruits.

As *Homo sapiens sapiens*, a further relevant assumption must be taken into account while designing the product that is the construct of space, thanks to which the image of the tree will be able to persuade the customer to go to the greengrocer or to the supermarket and buy some bananas. Therefore the designer will try to combine all the relevant assumptions in the design, as space, quality and quantity, following a personal and a more cultural model and by doing so two critical elements such as the informational aspect and the aesthetic one, will be integrated in the product. With this model, the designer suggests specific behaviors that the consumer should assume, as going to the supermarket.

Contrarily if the aim is to represent an exotic environment, the relevant hypothesis becoming “weather”, the size of the tree could be reduced, it could be placed in the background or even displayed as a texture, since there is no intention of inducing the urge to go and buy the product. As we can see, the design of the product, of the event, and so on, changes its perspective according to the relevant assumptions of a specific situation. As the designer will deal with diverse and numerous contexts, he will be able to acknowledge more and more models which will result in a richer and a more complex type of cognitive processing.

Cognitive models, systems and schemes reflect imaginary and iconic outlines of previous experiences of an organism (...). As so they are not subject to that interpretative vagueness which some academics attribute to iconic representation such as mental images- if a certain image referred, let's say, to a banana, a fruit, an object and so on (...). These representations lack of this difficulty, as they are the products of specific experiences during which the organism focused on a relevant situation (already processed and elucidated). Therefore the organism defines or acknowledge various assumptions and specific elements according to its objectives combining them to those already assimilated (already existing mental representations) (M.Tomasello, *ibidem*, pp.25-26).

In agreement to Piaget's cognitive theory, when the human mind needs to overcome a challenge, a tangible problem, he proceeds according to the method of inferential simulation. The mind considers all potential solutions, possible actions and imagines the probable consequences. This process is also applied to others thanks to mirror neurons through which it is possible to share, in an empathic way, the actions of others and the intentions behind those behaviors (A. Bertirotti, 2016). That is how each one of us is able to build cognitive models of intent and causality and it is possible to rely on images that represent situations, objects and events that we did not directly experience. Staying in touch with other people's experiences and creating cognitive models of them, by observing or enjoying them while communicating, means being able to increase our number of options and solutions. Individuals contribute and can take advantage of this enriched knowledge, which characterizes human culture.



Even though these mental processes characterize the project of the designer, it is still essential to include another fundamental element, such as self-assessment.

In order to come up with a successful creative process, it is necessary that the designer is able to evaluate his performance in relation to the objectives. Being able to consider the cause and effect relationship, while planning and working on the design, means connecting the theoretical and practical dimensions without any possible break in continuity. It is possible, then, to predict, during the process, the potential flaws and mistakes. This ability can be considered as one of the most valuable and advantageous while carrying out a design, because by anticipating the various reactions and responses which a consumer could have the designer can decide the most appropriate color to use, which aspects of the product must be more appealing, and so on. This means thinking long-term with an instrumental rationality. In the case of planning a space in which elderly people live, the designer can determine the most convenient design considering as relevant hypothesis the social aspect of the project or the choice of the color and the potential perception of the users of them. According to this example, saturated and warm colors instead of unsaturated and cold ones could evoke specific social and interpersonal behaviors.

This self-evaluation, which requires executive functioning, is a cognitive process. The individual does not only consider his actions and their consequences on the surrounding environment, but also the predictions that he made. The organism can evaluate the available information to make a decision in order to assess its potential success before realizing it. Human beings also simulate others' evaluations- or as far as communication is concerned, their understanding- to decide which behavior to assume. Self-assessment is critical for all those actions that reflect thinking and reasoning because in those it lies the consciousness of what is occurring (M. Tomasello, *ibidem*, p28).

In order to do this the designer must follow five fundamental procedures- which are also common to great apes- a) abandon a partial immediate success to obtain a better one at the end; b) if it is necessary, avoid using a situation similar to one that presented a flaw in the past and elaborate a new one; c) assuming a formative and cognitive training which requires effort; d) desire to design a solution, despite the unsuccessful attempts experienced; e) avoid distraction and focus on the goal. As we can see, self-assessment implies several of cognitive processes. Through this specific way of thinking it is possible to reach the aspired design.

In a given scenario, a particular objective of the project (product, event, yacht, etc.) is outlined in our mind. This development occurs thanks to the use of systems, models and schemes (S. Arnaldi, R. Poli, 2012), which are characterised by three main concepts. The first one consisting of all those mental representations of images. The visual system is the most consciously exploited one, by our species. We use this system for a series of abstract cognitive processes. These mental representations are composed of image synthesis, physical actions, behaviours, intentions, within which the imaginative dimension is indistinguishable from the real one. For example, a mental representation of friendship, which is an abstract concept, difficult to be defined, is the iconographic set of those actions and attitudes that characterize a friendly behaviour (smile, eye contact, taking a comfortable posture). All these actions are clear behavioural expressions of what we mean, in our culture, with the term friendship. Yet, these mental representations are not sufficient to express exactly what the designer meant by friendship, as it will be necessary to use a specific stylistic form, to represent the invisible content, such as the emotional and the intentional. Thanks to this stylistic form, the project will acquire a formal and substantial relevance. The representation will be a relevant abstract idea of friendship and friendly behaviours.

The second one (for which the example, described above, is explanatory) is that these mental representations are all schematic: they are generalizations of personal experiences or experiences that were observed.

They can also consist of objects, situations and events that are the result of the relationships present within a group of people. These schemes have a precise meaning given by the group you are part of. This meaning is able to shape the behavior of people that are part of the group. The developed patterns reflect both the images and the intentions of those who produce them. For example, imagine having to do the render of a yacht of 60m or a 25m one. The designer, while processing this scenario, creates a schema which takes into account the causes which could lead the boat to be part of that given context, the owner's intentions and those of the guests. So he will make a render of the 25m yacht in a pond rather than in the ocean, to highlight the size of the yacht.

The third and final feature is that all these mental representations are relevant to the purposes for which they are produced and the ethical and moral values of the person who produces them. For example, the design of a fruit juice packaging builds on the importance that the designer gives to the nutritional value of that type of fruit and the ethical value of such nutritional value within his own culture. In winter, oranges acquire more importance in our culture thanks to their health benefits against disease. Therefore, it can be a good choice to represent the fruit cut in half on the product packaging, to evoke the desire of juicy oranges. Such a desire is the result of our brain wishing to eat the fruit, which is associated with the action of cutting. On the contrary, a whole orange reflects a completely different situation, because it doesn't evoke the action of cutting therefore it does not generate the desire of eating it.

The reported examples show that relevant hypothesis relate to the forms of thought which we have outlined and can represent the project area within which the design adds value to a project.



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### 3.0 human being, new approaches in design process

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#### Abstract

The concept of *Human Centered Design* was born in the industrial society, when the individual and the relationship between his body and the objects were at the center of the project.

In the next digital society “the person migrates from the body to the screen” (D. de Kerckhove), and we started to talk about User Centered Design.

Today, in the *Network Society*, the user largely suffers the influence of the pervasive presence of technology. Technology becomes extension of the body, requiring further adjustments to the specific skills of digital natives. The interaction with digital devices change not only the gestures and posture of the human being but also its behavior.

D. Norman coined the definition *User Experience Design*, to combine and understand more comprehensively the various aspects involving the person-user.

These changes in design approach highlight the increasingly close relationship between the two elements. Actually we can distinguish and to become aware of our being person or user based on context, associating the first analog-real aspect, and the second a digital-virtual aspect.

However, the time at which the exponential evolution of technology will undergo the final surge is near (R. Kurzweil) with a consequent immersion of technology that will make coincide the person and the user, the analog and the digital, the real and the virtual.

The **boundaries** between the **body** and **technology** are no longer recognizable.

For the 3.0 human being will be required if the new design paradigms. The article aims to analyze a selection of case studies that represent significant **models of the new trends**, signals of a very near future, and to identify **new design approaches**.

#### From Human-centered Design to User Experience Design

Ubiquitous computing allows 2.0 human being to interact with different systems, simultaneously and everywhere, with consequent effects on the nature of social relationships, on communication, and on the itself 's consciousness.

The world as we know it is therefore undergoing an unmatched transformation where interaction sensors are for example able to translate body movements, even weak, or biophysical signals into gestural and sensory controls.

Very soon the boundaries between body and technology will no longer be recognizable and technology will be not only around the body but also inside it.

2.0 human being will turn into 3.0, the recipient of a project / process / service / experience, in his most complete new condition to be hyperconnected, with mind and body, within a ubiquitous, virtual society, more and more Ephemeral and intangible than now.

What will be the needs of this new human being hyperconnected? How do design paradigms changes?

The approach to the design process (from idea to project) has always followed, and also trying to anticipate, the evolution and revolution of our world. With the concept of Human Centered Design, human being in his most tangible physicality lived in the industrial society of serial production and ergonomics. The designer's eye was on the analog body.

Then with the advent of the digital society, the User Centered approach is added, where the user and the interface are at the center of the project, but the rest of the body remains in some way excluded. The Human Centered design paradigms are very different from the User centered design, and are therefore hyperspecific and one often does not include the other.

Only with the subsequent definition of User Experience Design has been able to combine and understand bilaterally the different aspects that involve the person and the user.

However, we came to the Big Data era, the augmented reality era and therefore the Network Society (or data-driven-society) era, so also this time the approach to the design process has to follow and anticipate the evolution and revolution of the our "new" world.

Through the analysis of six case studies we will see how this alignment and almost overlap (even not entirely) between person-user, between real-digital is revolutionizing and dictating the new laws of making design.

Signs of a not too far future.<sup>1</sup>

#### LA CURA – S. IACONESI, O. PERSICO

**Hacking images of your body and cancer to transform it into an open-source element as a source of both cure and global communication.**



*Fig. 1 A image of the cancer of S. Iaconesi posted on the open-source platform [www.la-cura.it](http://www.la-cura.it)*

<sup>1</sup> Da Empoli, G., Contro gli specialisti. La rivincita dell'umanesimo Dijk, J. A. G. M. van. (2012). The Network Society (Third Edition edizione). SAGE Publications Ltd. McLuhan, M., & Powers, B. (1996). Il villaggio globale. XXI secolo: trasformazioni nella vita e nei media. (F. Valente, Trans.). Milano: SugarCo. Schnapp, J. T., & Michaels, A. (2011). The Electric Information Age Book: McLuhan / Agel / Fiore and the Experimental Paperback (annotated edition edizione). New York: Princeton Architectural Pr.

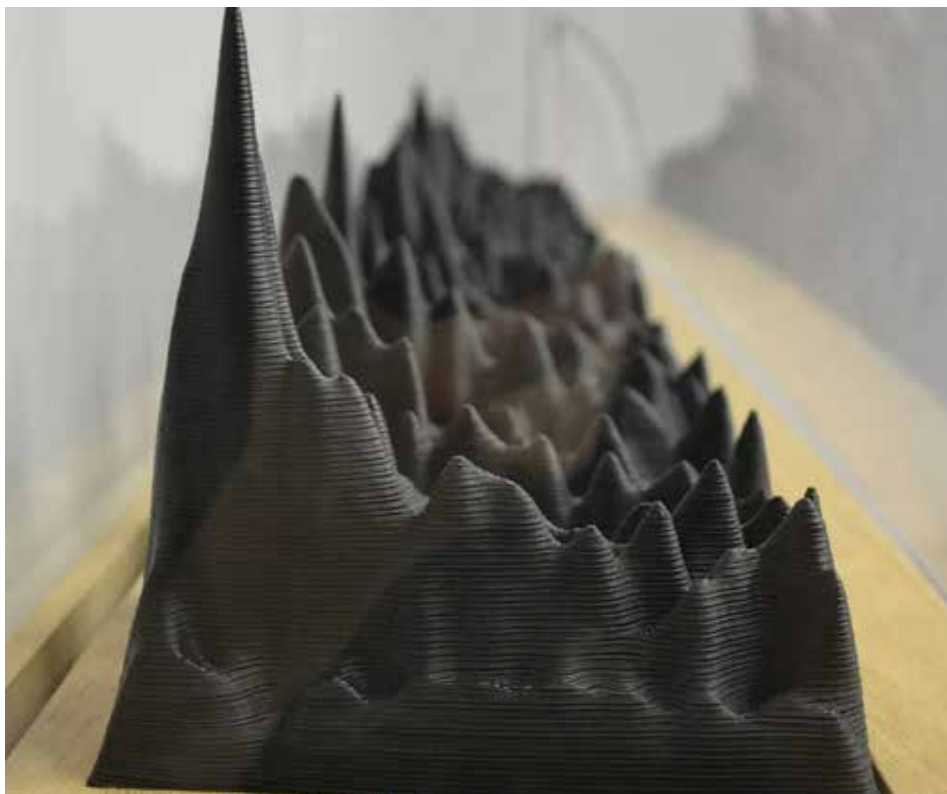
*“Okay, cancer, you’re not all, I’m more than just this. A cure, whatever it is, will deal with myself ... (...) There were many tips on how to treat cancer, but many more were on how to treat myself As an individual. (...)*

*Patrick Lichty, for example, produced a 3D sculpture of my tumor and sold it for sale on Thingiverse. (...)*

*And it’s not over here! Scientists, traditional medical experts, various researchers, doctors, all connected with me to give me advice. With all this information and support, I could put together a team of neurosurgeons, traditional doctors, oncologists, and several hundred volunteers with whom I discussed the information I received, something very important. Together, we have created a strategy for my care in many languages, according to different cultures. The most important thing of La Cura has been to become part of a truly connected and involved society whose well-being really depends on the well-being of all its members. This global performance is my open-source treatment against cancer. And I feel it is a cure for me, but also for all of us. “<sup>2</sup>*

### **VOICE SCULPTURE – GILLES AZZARRO**

**I see what I hear, what the body says.**



*Fig.2 On June 18th, 2014, Gilles AZZARRO was invited to the White House to the first Maker Faire White House to present the Work “ Barack OBAMA - Next Industrial Revolution “ to President OBAMA.*

<sup>2</sup>An interview of S. Iaconesi for La Repubblica.

The speech of B. Obama printed in 3D.

In this case study technology makes what is proper of the person from an analog and real state to a digital state. We can explore with this project the relationship between digital and emotion, empathy, feelings. How do the lines and structure of the sculpture match the emotion the body might have when pronouncing those words?

A visualization that makes the insecurity of the voice and then of the person visible, where the fragmentation of the sculpture breaks.

## **GIF LOGO FACEBOOK - MATT NAVARRA**

### **Digital postures**



*Fig.3 frame of Matt Navarra's gif*

This gif illustrated by Matt Navarra has quickly become viral through various social networks. Exemplification of what D. Kerchove maintains that man moves from body to screen not only through thought and perception of himself but also physically.

Technology is conditioning our body and creates new poses that fall into our normal daily postures, so it goes literally towards technology.

And how will these postures change when technology is integrated into my body?



## RUNTASTIC

### Body generates digital data



Fig.4 Screenshot about the Runtastic App.

The running app that monitors the course and the sport performance. This app contains and can tell how flows of moving bodies move in the city, their habits, uses and consumption of the territory and the city they live in. It can also tell how the body uses the territory of its own city, even improperly. What are the areas in the city where more people are running? At what time? What age? How often? This can answer many questions in disciplines where body flows and therefore people are fundamental, such as architecture, and urban planning where you plan for the city and its citizens.

## THE FELTRON ANNUAL REPORT – NICOLAS FELTON

### Body generates analog data



Fig.5 Information Visualization's of Felton Annual Report, 2005

In 2005, N. Felton published a very detailed Annual Report, which chronicled the minutiae of his life, the states he'd visited, the music he'd listened to, his weekly work:play ratio, and much more, in a series of elegant charts and graphs. It was a fascinating study of personal data tracking and a gorgeous piece of design, all based on information drawn from his memory, calendar, photos, and Last.fm data.

Compared to *runtastic* where the body generates data unconsciously in this project, data generates consciously and through programmed monitoring. From this comparison you can delineate the differences between conscious data generation and unconscious generation, and how you can use your body or body of the person / user of the project and its daily routine activities to know, understand, design, and study.

This confirms how in routine the life of the person / user are hiding crucial elements to understand where the design can interfere.

### SELFIECITY- LEV MANOVICH

**How selfie can tell about a city and its trends, its flows, timetables and cultures.**



Fig. 6 Information Visualizations of the Selfiecity project; focus on London.

The project investigates the style of self-portraits (selfies) in five cities across the world. Selfiecity investigates selfies using a mix of theoretic, artistic and quantitative methods, present findings about the demographics of people taking selfies, their poses and expressions. Rich media visualizations (imageplots) assemble thousands of photos to reveal interesting patterns. The interactive selfieexploratory allows you to navigate the whole set of 3200 photos. Finally, theoretical essays discuss selfies in the history of photography, the functions of images in social media, and methods and dataset.

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# **Temporary Architecture**

## **Project for a modular wooden structure and dynamic configurations for optimizing sound**

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### **Abstract**

The recent earthquakes have caused the destruction of some of the many villages that characterize the landscapes of central Italy. From this swarm, still in progress, it has emerged primarily as many buildings are structurally inadequate; from the current debris also it remains difficult to imagine again enhancing the area; following the example of Aquila, among the numerous reconstructions, stands out as the temporary Renzo Piano's "Auditorium del Parco". Starting then from this type of building, it is thought to an equally temporary structure, but to be included within an existing building, in such a way that both modulated according to different needs. The research investigated the configurations of space to retail architecture: defined four 'types' of the auditorium configurations, it has gone to the structure, choosing such as wood material, defining the construction details. Having the bond of temporary nature, it was expected to solutions that optimize assembly and disassembly. Particular emphasis was given to the acoustic design, which assisted the architectural part: the use of acoustic simulation program Ramses allowed to define a first state; the next step is the acoustic correction, with a new set of simulations, was defined by a particular configuration of the ceiling, which follows so the auditorium forms, obtained through the study of a tessellation.

### **Introduction**

Italy presents important seismic activity for over 80% of the territory, mainly superficial, the sources of earthquakes are typically found in Earth's crust at depths of the order of 10 km: earthquakes with a magnitude not very high can be quite dangerous. In recent years many areas of central Italy suffered the destruction in whole or in part, of some of the many villages that characterize the landscapes, such as the recent case of amateur o Norcia. Following the example of Aquila, hit by the earthquake in 2009, among the numerous reconstructions, stands out as the temporary Auditorium of Renzo Piano Park. Even there the emergency, there also need to have a place of urban aggregation as close as possible to what was the nature of the city center.

Starting then from this type of building, it is thought to an equally temporary structure, but to be inserted within an existing building, in such a way that both modulated according to different needs. This article will show results subject of a thesis study on the subject of the auditorium; research has investigated the configurations of the space up to the detail of the architecture: defined four 'type' configurations, it has gone to the structure, choosing as the wooden material, defining the constructional details.

For this purpose that was pursued was to devise a structure denoting its own character in terms of design and architecture. For this aim, with the study of tessellations, it is defined as a particular ceiling, based on the shape of more adaptive sound absorbing panel for the purpose, which on one hand solves the acoustic problems, and at the same time denotes the architectural quality of the room. On the other hand, draw tessellations has always been a widespread practice in the art history; just think of the mosaics that have left us the Romans, to the Alhambra (the famous Granada Palace), some works by contemporary artists such as Escher.

The acoustic analysis was carried out by means of calculation based on the code Tracing Pyramid, on which is based the simulation model employed by Ramsete software, used for this study.



*Fig.1 Global view of the auditorium*

## **Methodology**

The project consists of a square room, side 12,50 m, used as an auditorium: from the beginning has been developed the possibility of being able to switch the internal environment, and this has been one of the project constraints. They were then selected four configurations ‘type’ according to the type of auditorium (Fig. 2):

CONFERENCE: classical, with speaker in the front position with respect to the public;

TALK SHOW: central, with separate speakers and audience in a symmetrical position;

MEETING: central, with speakers sitting around a table and the public in a symmetrical double position;

VARIETY: central, with audience arranged as in the previous configuration, but speakers standing in the middle of the room.

Fig.2 Arrangement of seats in different configurations

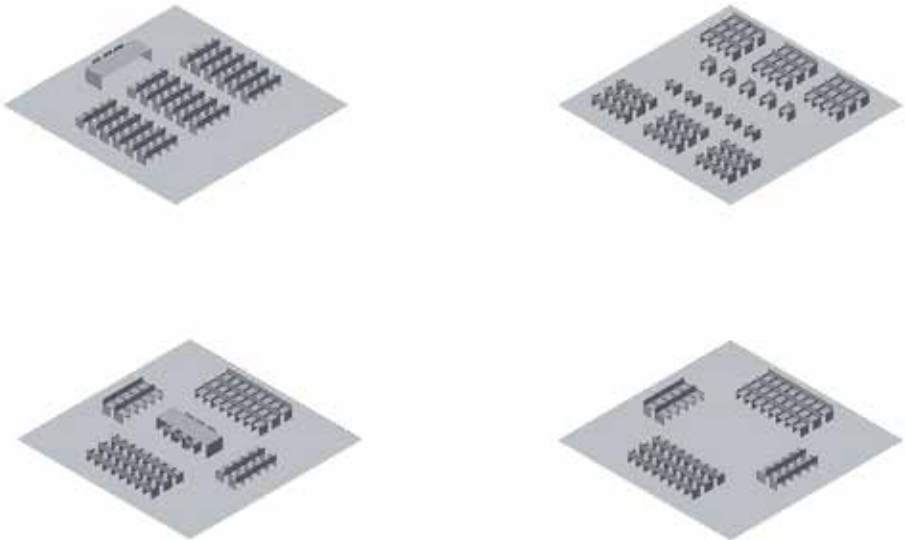
Another constraint was that place is temporary, as it was envisaged the installation into existing

exhibition halls: the project is, therefore, as a kind of 'box' in which you can do small conferences, so that the acoustic quality of the room inside is optimum, and that at the same time does not cause disturbing noises outside.

The modularity also distinguishes the ceiling through a tessellation, the latter has been divided into simple elements in wood and sound-absorbing panels; Also in this case, four configurations are envisaged, made possible by the rotation of the acoustic panel. The modularity is also maintained in the choice of the structure, made of wood, consisting of a series of places frames at a constant distance. Inside, in addition to furnishing, a LED lighting system has been expected.

The structure was designed in fir wood, with constructive platform frame system, the system perhaps more prevalent in the world for the construction of buildings in one or more planes in this material. Almost all residential buildings in North America are in fact built with this system.

It is formed by six frames arranged at a constant distance of 2.50 m; the upper part is characterized by the presence of reticular beams. The frames are connected to each other through planks of wood and bracings of 8x12 cm section.



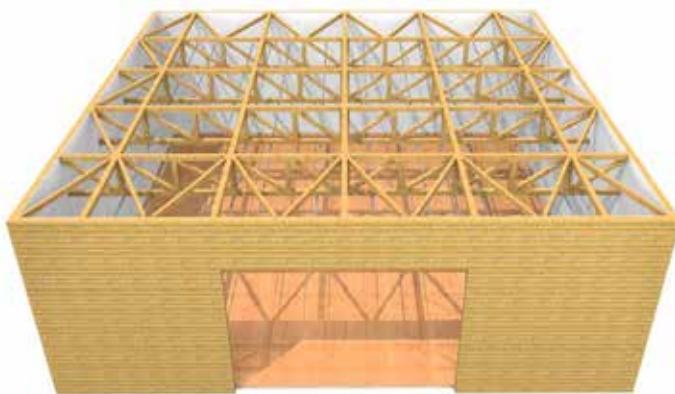
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*Fig. 3 View of the structure*

Each truss has been designed in such a way as to be easily mounted inside the exhibition centers: it is in fact been broken at the midpoint, thereby forming two identical blocks already assembled, can be connected with threaded rods M12 for detachable fastening. Each block is then fitted earlier. At the main structure it has been inserted a plugging, also made of fir wood, consisting of uprights and crosspieces 12x12 cm section, connected to each other by means of angle and screws and attached to the main structure through the retractable connectors.

The construction of the package walls provides for the insertion inside the cavity casing of insulating material Rockwool 211 compressed; for the completion, however, gypsum fiber plates have been inserted inside, while the outside slabs perlinato fir.

The floor has been designed as a series of ready-made elements that can be connected between them, in such a way that the mounting and dismounting are carried out in a timely manner. In particular it has been chosen wood bleached oak: they are formed by modules 114x240 cm; the package includes a OSB wood plate, topped by 8x8 cm wooden planks laminated interspersed with each other by insulating material, another layer of OSB wood, and finally the wooden plates. As for the floor, to ensure access to all, it was designed a ramp. The stratigraphy of the ramp is the same as the floor, except for the insulator which in this case has not been inserted.

Outside it has been provided for the insertion of sheets for the poster advertising (Fig.5): in particular in the side walls and in the main one. For this reason it has been studied a system consisting of an angular hooks that is fixed to the buffering structure, and that at the same time connects a wooden bar; the latter allows the affixing of LED strips for the lighting of the canvas and, through a hook, the positioning of the canvas itself.

With regard to the lighting, the preparation is in correspondence with the ceiling of the blanks: it is thought to iPlan, a luminaire emitting direct and indirect suspension for use with LED sources neutral white 4000K high chromatic yield. The assembly can be done with the same technique of ceiling frames, or through a box-shaped profile, with hooked bolts for the removable fastening beneath the truss.



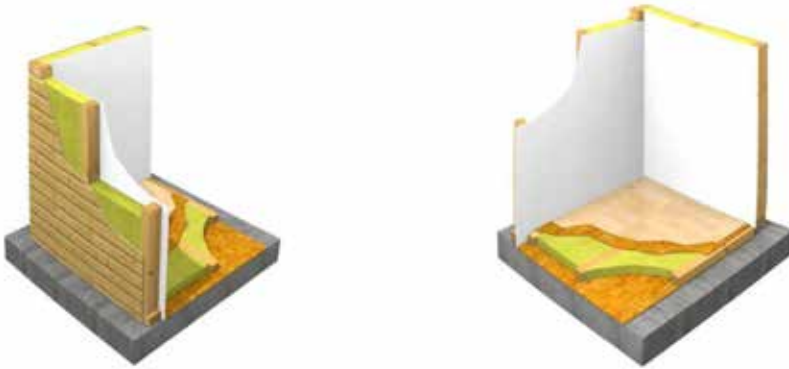


Fig.4 Stratigraphy of wall and floor



Fig.5 Main perspective drawing

At the structure already described it is a cover been inserted, engaged at the intrados of the truss beams and designed through the study of a tessellation; in the initial phase of the study it was decided to use one already known, but the introduction of sound-absorbing panels, arranged in order to improve the acoustic quality of the room, gave an input in the development of an unpublished subdivision. The starting point was, therefore, by a known geometry element and can not be modified, represented precisely by the sound-absorbing panel.

The chosen panel of Caimi Brevetti, especially the Snowsound® Flap, already used in Italy and abroad, commercial and accommodation spaces (Fig. 6).

It is desired, however, go beyond the simple engagement as has been done: studying the geometry, the configuration of this element, we have searched and identified forms that could stabilize. At the same time, by the creation of a form, it has been possible to divide equally, through repetition, the whole surface of the ceiling itself (Figs. 7-8). In this way it is possible to optimize the use of the panel: from the study of acoustic quality have been investigated positions in which the panel to be inserted. In doing so, the regularity is not compromised, as well as the architectural quality of the room.



Fig.6 Sample application panels

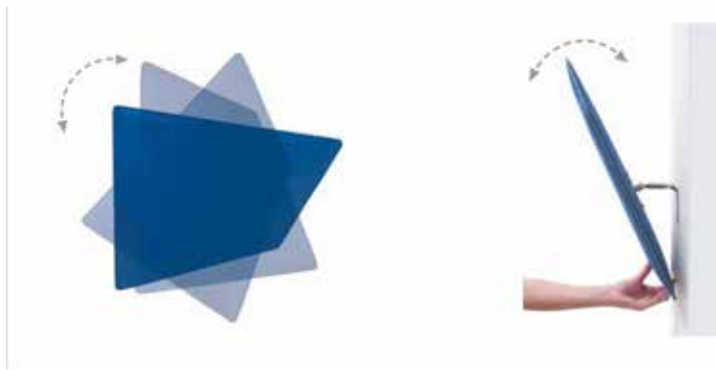


Fig.7 Caimi panel with the various possible rotations

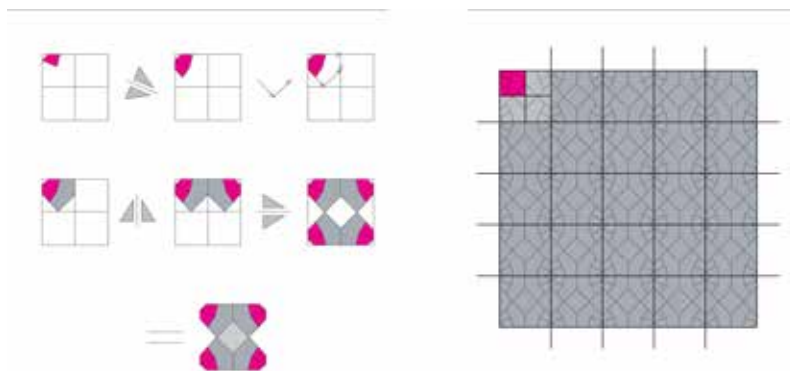
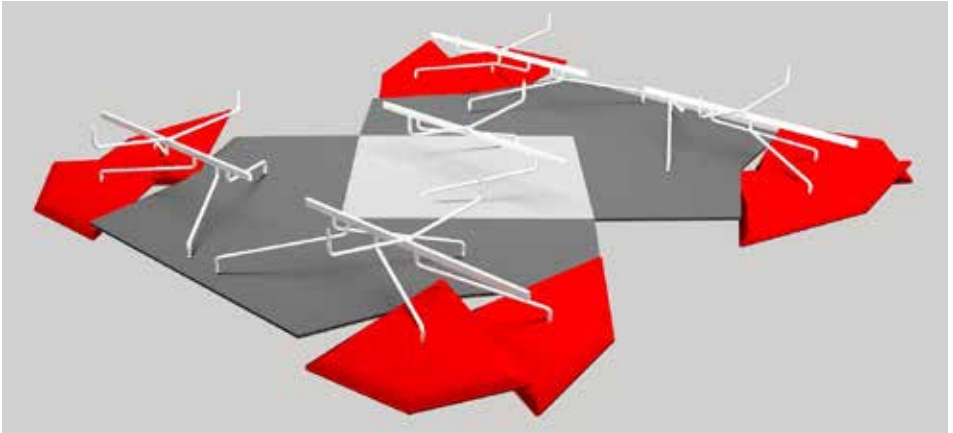


Fig.8 Creation of tessellation

Once defined the geometry, it is passed to the choice of materials and the study of individual elements of tessellation. In particular, the anchors, as well as by the sound-absorbing panel, are constituted by elements made of beech and pine plywood: the first panel are adjacent to Caimi, while the latter are in a central position. To allow the passage of light, the remaining spaces were left blank. The coupling of the elements takes place through a series of chromed steel frames, having arms that can rotate and ending with a ball joint: in this way the rotation is also allowed to the panels (Fig. 9). It was decided to maintain a fixed position of the woods, while each configuration was chosen rotation of sound-absorbing panels. The frames are hooked through a box-shaped profile of the intrados trusses. Considering a single module of the tessellation, you have a total of eight soundproofing panels, four beech panels and one in birch, which are supported by five frames.



*Fig. 9 Single module docking scheme*

### **Study of the internal acoustic quality**

The simulation model used for this study is the Ramses software developed by GENESIS, supplied to the Laboratory of the Department of Engineering Acoustics. This code calculation is based on the pyramid tracing method. Having defined the geometry of the structure, it has created the three-dimensional model, with a detail at a maximum of about ten centimeters. An accuracy too high in fact entails an excessive prolongation of the calculation time, without actual benefits in terms of simulation of the acoustic behavior of the room. Made model, are attributed to the materials drawn objects, assigning to each the number of the corresponding material in the Material Manager. It then passes to the source location, chosen from one of those present in the Source Manager, and the various microphones at the measuring points fixed. For the first simulation with the Tracer module considers only the direct wave; This serves to confirm that the three-dimensional model is effectively closed and that none of the rays generated by the source from the bait, distorting the results. Any rays that come out are saved by the program in Escaped Ray folder, in a file viewable in .Ray Ramses Cad that superimposed to create three-dimensional model, it allows us to understand where they come from and then promptly provide the geometry correction. After verifying the correctness of the geometric model, you can proceed with the real simulation.

Since the structure under consideration is in the design phase and is not yet existing, a measurement campaign was not possible to make the main acoustic quantities, and therefore has been omitted from the model calibration phase.

In the present case it has been assigned a type of omnidirectional source, with emission to a pressure

level of 95 dB for all frequencies, while the materials with the relative absorption coefficients that constitute the model are shown in Table 1. the simulations were carried out for all four design configurations, in a first phase with the lack of tessellated ceiling models, to understand what was the state of departure, and subsequently with the ceiling affixing same. It is emphasized that the modularity is repeated: in fact, for each configuration you have chosen a different inclination of the sound-absorbing panels.

Materials	Frequency (Hz)						
	125	250	500	1000	2000	4000	8000
Gypsum fiber	0,280	0,220	0,170	0,100	0,120	0,130	0,130
Painted wood	0,233	0,233	0,233	0,233	0,109	0,109	0,109
Unoccupied chair	0,250	0,500	0,650	0,700	0,700	0,750	0,750
Wooden table	0,850	0,650	0,300	0,200	0,100	0,050	0,050
Velvet curtains stretched	0,054	0,131	0,395	0,515	0,431	0,407	0,407

Tab.1 Coefficients of sound absorption at various frequencies

As an example, the report the results related to the reverberation time, indices of clarity and definition, Rasti / STI, divided into octave bands, between 125 Hz and 8 kHz for the configuration 1 (conference).

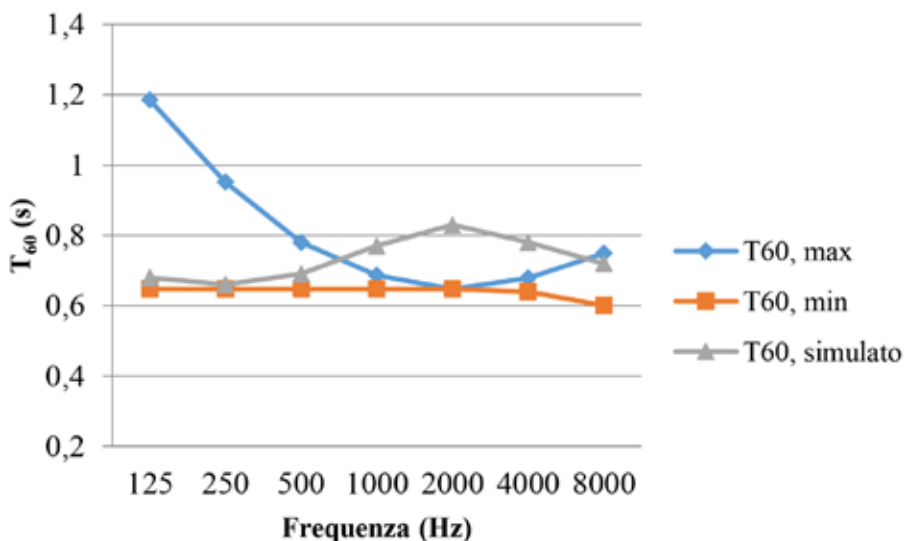


Fig. 10 T60 configuration 1 (conference)

Frequency (Hz)	C50 (dB)
125	5,36
250	5,99
500	5,78
1000	5,14
2000	4,48
4000	4,79
8000	5,22

Frequency (Hz)	D50 (%)
125	77,47
250	79,89
500	79,11
1000	76,57
2000	73,71
4000	75,07
8000	76,87

Frequency (Hz)	Sti/ Rasti
-	-
125	0,84
250	0,85
500	0,84
1000	0,83
2000	0,82
4000	0,83
8000	0,84

Tab.2 C50, D50 and RASTI/STI

After the first simulations, it is clear that the intended use for speech proves to be optimal for all four configurations; Whereas the reverberation time, for example, and comparing the values that assumes at different frequencies, it is noted that in general the deviation from optimal values is less than 1 s, more than acceptable difference. The room, therefore, does not present particular problems; in order to further improve the acoustic quality has been inserted in the ceiling already introduced previously, the sound-absorbing panel of Snowsound® Flap Caimi firm, designed by Alberto Meda and Francesco.

At the base of the patented technology is the use of compounds panels from material with variable density, which allows to obtain a selective absorption at different frequencies, and then to optimize the acoustic environment in spite of the very low thickness of the panels. The absence of stitching and frames and the characteristics of the material with which the panels are made, make them extremely lightweight, little bulky and adaptable to any environment. The panel surfaces are coated polyester fabric Trevira CS® solidly applied to the inner padding, with which it forms a single body without solution of continuity. Such property allows to obtain a resistant surface, difficult to tear and perforate. The panels were tested in reverberating chamber according to UNI EN ISO 354 obtaining the “Acoustic Absorption Class A” in accordance with the UNI EN ISO 11654. The absence of frames makes the surfaces of Snowsound® completely sound-absorbing panels. The entire surface is to be considered useful for the purpose of acoustic correction. No part of the panel is covered by structures other material that could hinder the sound absorption or reflection of the sound. In addition, the panels have the same aesthetic characteristics, acoustic and functional from both sides.

The FLAP panels are fitted at the rear of a chromed steel plate connected by a ball joint articulated to a chromed steel arm that can be attached directly to the wall or ceiling. The joint allows to rotate the panel 360 ° and tilt in all directions to customize both the aesthetic aspects of the product that those of acoustics. With this feature, it was possible to diversify the ceiling, choosing to tilt according to the project configuration option panels. Furthermore, it seems the appropriate choice: it in fact known as the absorption coordinate values are higher at medium-high frequencies, where it was necessary to act. The results of the simulations show, after the insertion of the constituents of the ceiling anchors, an overall improvement in acoustic quality of the room, which is already starting as evidenced presented no particular problems. As an example we report the data concerning the time of reverberation for configuration 1. This is due to the materials chosen for the same coverage, in particular acoustic panels Caimi Flap, which is well adapted to the acoustic correction. The latter has been paid in particular to the lowering of the reverberation time, especially at medium and high frequencies, where usually had the values exceeding the optimal range. In this interval, the panel presents its peak of sound absorption, and in fact after its introduction there is a reduction of the index. Conversely, at low frequencies, where the values were already optimum, the panel has low absorption capacity, and this has contributed to not have a high decrease.

By improving the reverberation time, and consequently have improved other indices: both the clearness index of that definition undergo an increase of the values, as well as the STI index, which turns out to be excellent.

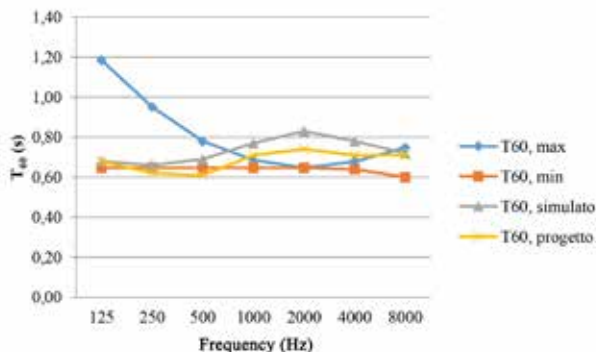


Fig. 11 T60: trends before and after affixing the tessellated ceiling

## Conclusion

In conclusion, an original tessellation has enabled us to design the ceiling variable configurations, which is spatially congruent with the four different variations of the configurations that have been deepened. The three-dimensional representation is then guaranteed the detailed study of the structure and construction packages that make up the architecture, taking care of every detail, from the screw to be applied to the angle up to the furniture. The integrated design, able to relate in geometric form, construction and functional performance, adaptive configures the soul of an idea and ideals of architecture, capable of responding to the real needs of contemporary living.



Fig. 12 Configuration 1 (conference)

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## **The image of place. Survey, representation and project in the plan of color of Deruta**

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### **Abstract**

The Plan of Colour is a normative instrument able to study and to define the identity of urban character, aimed to find the quality of public spaces through regulation of recovery of colour. Guideline rather than prescription, the duality between project and survey finds an interesting experiment: analysis and synthesis are interrelated losing their boundaries in critical reading of the image of place. Design analysis is about the territory of Deruta, an Umbrian area close to Perugia with 9 small historical urban center, paradigmatic case able to explain close affiliation of this project in representation sphere. In more of 400 tables is developed the survey of facades and of critical emergence, and with the help of more of 2.000 schedule, is built a strategy to interpreting the state of the cultural heritage. Extrapolating values by cataloguing action, a logic able to understand emergency of planning is systematized, “where” and “how” in town’s element we have to intervene. Values of materials become vehicle of immaterial values, able to exploit the primary resources of place, the culture, expressed in landscape, so as to trigger a cascade-process of upgrading in perception of place, in space, in society.



*Fig.1 - The colors of Deruta town.*

## Introduction

The Deruta Colour Plan was born as a normative instrument to pursuit public space qualities throughout a way of existing colors restoration.

It mainly concerns all Deruta's smaller villages around, as already identified by the General Plan: Deruta, Ripabianca, Casalina, Fanciullata, San Nicolò di Celle, Celle Sant'Angelo, Sant'Angelo di Celle east, Castelleone, Pontenuovo.

Referring to the issue of relationship between colors and historical centers with a perceptual point of view, the Plan regulates a process of coloring, cleaning and restoration of different facades, seen as a whole set of architectural components that being together, creates a peculiar set of the roads and urban scenes.

The methodological path finds its basis in the perceptual issues, as a critical reading of the image that develops from analysis (survey) and synthesis (design) fusion.

Through a redevelopment project of the individual façades capable of preserving aesthetic continuity, main goal of Color Plan will be to preserve and enhance handed the local identity. Color plan objective is the enhancement of homogeneity of historical centres

Color plan goal is the enhancement of historical centres unit through a redevelopment project of the individual façades, capable of aesthetic continuity to preserve and enhance handed the local identity.

Protection of landscape is basically linked to the perceptions arising from vision of the whole urban environment: even before capturing a single color, our mind will consider its multiplicity and identifies the color contrasts and dominant tone. The colors, as well as the general appearance of the man-made perceived environment, are elements that must be studied and valued because vehicles of the urban image as well as of the culture revealed from urban landscape.

The choice of this peculiar approach should be read purely in this sense: a perceptual one focused on the primacy of the eye that is the concern also informing the "European Landscape Convention"<sup>1</sup> where perception is the main instrument of knowledge, another way to recognize the peculiar identity.

## Basis of the analysis

The project is informed by studies on relationship between design, cities and their perception of the image of the city, a topic already addressed in international and national researches that have placed in the center of the debate the "primacy of Visual and of the Eye"<sup>2</sup>, which denoted the development of Western culture.

Gaspare de Fiore clearly explains that "the image of the city not only wants to analyze its representation and its meaning finding the relationship between history and design, but above all it aims at indicating and identifying those places, by searching -through historical knowledge and the graphic investigations-, this identity that modern globalization seems to delete"<sup>3</sup>. These studies seek to investigate "a sensory level which shows how understanding ... the skill in creating patterns that are able to give an interpretation to experience through organized forms"<sup>4</sup>.

The city relevance is based on the balance between the unity of the urban form and the exploitation of singularities. The color is to support this logic. The relationship between unity and fragment, so important to the vision, to the relationship between the types and figurative structures, is in fact already described by Plato in the *Phaedrus*<sup>5</sup>.

<sup>1</sup> <http://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/176> [2016]

<sup>2</sup> F. Purini, "Dodici frammenti per disegnare il disegno... Lettera romana a Margherita De Simone", in "Palermo: Le parole e i segni", La Collana di Pietra, N. 2, 1982, p.342.

<sup>3</sup> G. De Fiore, "Appunti di Viaggio". In "Immagine della città europea", V. Volta (eds.), "Proceedings of Immagine della città europea", Brescia April 2004, Tamellini, 2005.

<sup>4</sup> R. Arnheim, "Arte e Percezione visiva", ried. Feltrinelli, 1993.pp.55-58.

<sup>5</sup> Platone, "Fedro", 265.



The vision is natural to man, but needs its own “education”<sup>6</sup>, which is why we ourselves need to deconstruct the complex process to better manage it.

In this sense then becomes really interesting an historical reference to the romantic figure of Alexander Von Humboldt, who in his *Cosmos*<sup>7</sup> distinguishes between three stages of knowledge, which work as well as for the research in the image of the city and in the perception of color:

- the first is that of the suggestions, the man like a white sheet, impressed by the external landscape an approach that concerns the relationship between subject and object;
- the second step is the examination and the disarticulation of unit scientifically seized into individual parts;
- the third and last stage is the synthesis, where the whole is no longer reassembled in an aesthetic impression, but it's structured by scientific thought.

The Colour Plan will then start thinking from the impression, in the perfect matching between landscape and its icon, trying to understand the current state as well as the foreshadowing future. Deconstruction imposes then the relationship with similarity: deconstructing the reality to inscribe it into known categories, to ensure that from all the observations a law can be extrapolated.

The conversation between reality and its model is entirely left to abstraction. Subjectivism is fundamental, because it is not possible to observe without judging: the image is influenced from the imaginary, conversely, is the critical result of different observed images. From the three previous conditions of relationship between unity and fragment, the value of the laws' perception, with the centrality of the interpretive process, almost inevitably follows the dependence of the project to the action of survey.

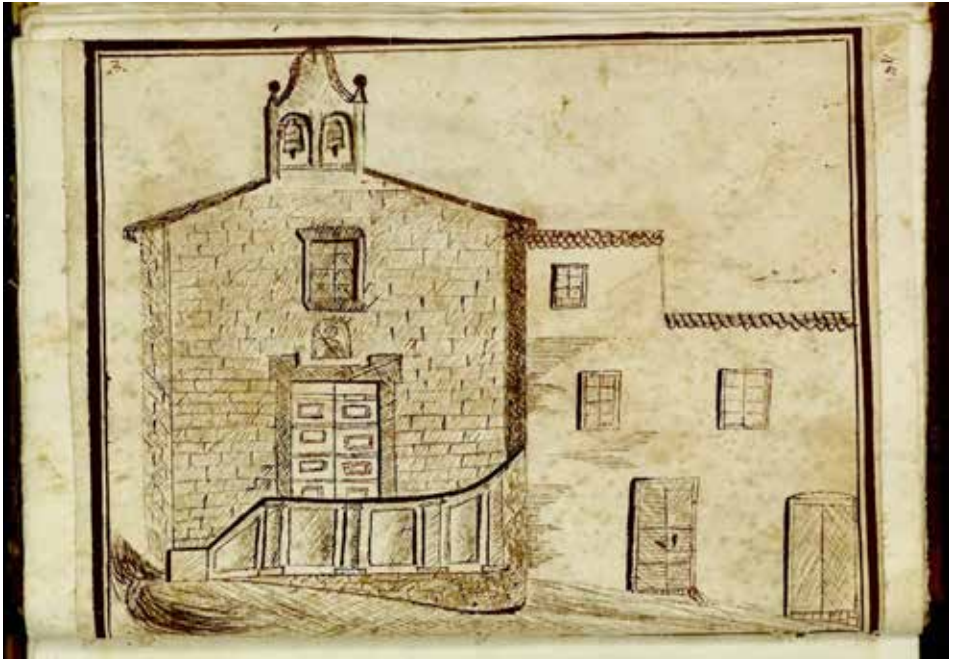


Fig.2- Fabretti's drawings.

<sup>6</sup> K. Lynch, “L’immagine della città”, ried. Marsilio, 1985.

<sup>7</sup> A. von Humboldt, “Il cosmo: saggio di una descrizione fisica del mondo”, Del Vaglio, 1844.

## The phases of the Plan

The Colour Plan is divided into three parts: the survey, the cataloguing and the project, closely related in the critical reading action of the complexity of landscape.

### Preliminary study

A study phase undertaken starting from the existing literature, among which it can be mentioned the Fabretti ancient research<sup>8</sup>, important description that gathers to the text of 28 drawings of monuments built in the territory and highlighting the morphological and material appearance of the city. In order to identify the original matrix which then led to the development of buildings the historical cartography has been studied to trace the peculiar evolution of this urban area. The analyzed maps have been mainly the Chiesa-Tiroli (XVIII sec.) and the Gregorian cadastres (XIX sec.), with its updates and photos of the transformation occurred in the area.

In preparing the Colour Plan it has been necessary to define the agreement by which identifying the detected chosen color. With the purpose of determining an unequivocal reading NCS (Natural Color System), developed by the Scandinavian model of colors of Stockholm (1950) has been examined<sup>9</sup>. The study shows a similar pattern to each location which starts from a table with, on the left, a schematic representation of the territory (capable to let the reader understand the position in the landscape local system) and, on the right, the floor plan shows the analyzed fronts and the urban sectors in which the city is divided in relation to its interpretations for parts. Following the same logic, the summarizing tables have been prepared with the main colors detected, placed in the plant over the footprint of the building. The project tables are based on setting the color detected and the subdivision into compartments, with the colors of the project replacing in one of the possible simulations, the captured colors divided into a schematic legenda as subsequently will be analyzed in detail; below are showed the tonal results, plotted in order to show the constraints on the colorings.

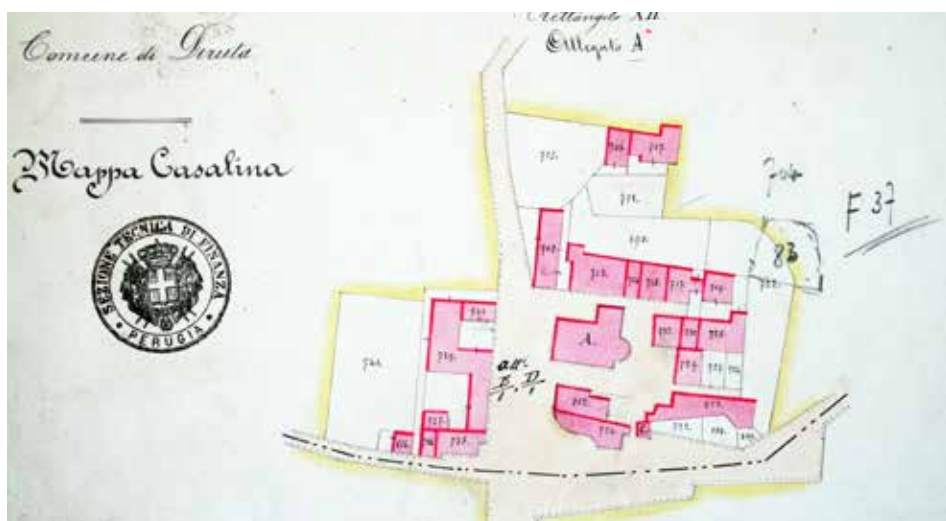


Fig.3 - Gregorian cadastres (XIX sec.).

<sup>8</sup> G. Fabretti, "Memorie ecclesiastiche delle Chiese di Deruta", 1845, Biblioteca Augusta di Perugia, Ms.2004, rip. in <http://cdwdoc.demo.alchimedia.it> [2016].

<sup>9</sup> [www.ncscolour.com](http://www.ncscolour.com) [2016].

## Survey

As a premise of the description of the detection actions undertaken, it is appropriate to consider what relief action means: a cognitive interpretation of reality. In this sense, the plan is strongly based on the critical reading of the existing state which, through the sign, has allowed us to understand the existing matter of state. The survey campaign, developed in parallel to the cataloging one, affected all the main fronts invested by the Plan, action founded by an expeditious detection obtained with techniques of digital straightening, based on topographic contours.

The design makes possible to identify the shapes of prospectuses and therefore to correlate the individual minimum units in their context, through relationships with others who exercise contiguous elements.

The tables represent the facade in line drawing, in an urban scale of 1: 250, suitably divided by the same structure. The top right place is a zoom on the marked plan with the reference face represented. Next there is the front representation, internally patterned with color detected by NCS converted to RGB, and with the reference code of first main substrate, the hoof, doors and windows, frames. For the first two elements is supplied a specific encoding result surveyed and converted in NCS colors, instead for the other colors is established generic colors in correlation to standards the value of the same generic perceptual (fixtures green dark, rather than light brown etc ...).

In the draw, the singularities have been also identified by points associated with a number. The identification aim to remark the emerging elements in the prospectus which will then be either enhanced or eliminated. Through photography and design elements are then marked in order to allow the reader to capture the status of the territory, a really important tools of knowledge, going beyond the planning purposes of the Plan.

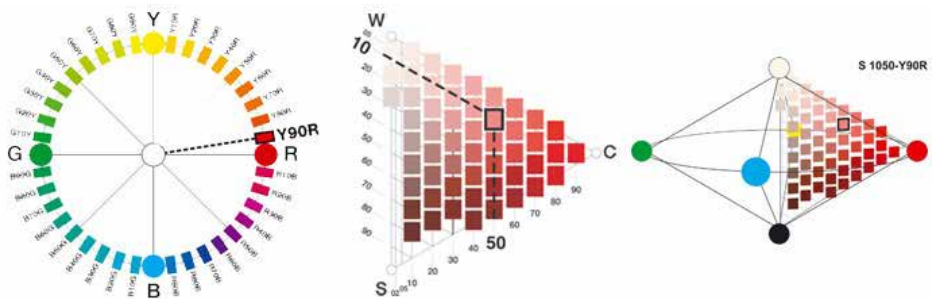


Fig.4 - NCS model.

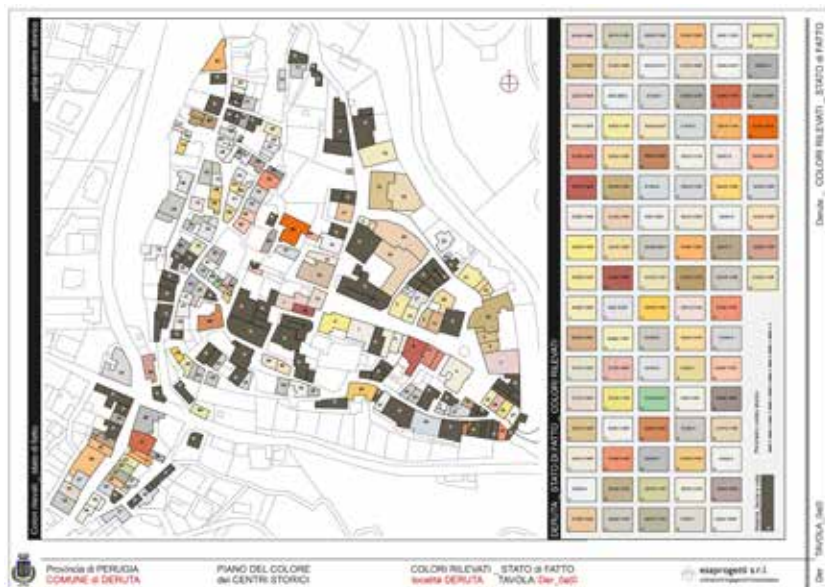


Fig.5 Color survey

## Cataloging

In the analysis phase, it has been catalogued using a minimum unit of decorum, trying to select the useful elements to the place image comprehension as well as to data that may contribute to the area interpretation and evaluation up to the project plan purposes .

The first part of the cataloguing aims to be an identification one: essential elements are primarily reported to identify the minimum unit, such as location (square or street numbers), cadastral references (sheet and particles), the urban classification of the General Plan in force. It is therefore interpreted the prevalent function building typology (residential, production, warehouse, services, religious) as well as in the configuration typology (detached house or semi-detached, small apartment), highlighting floors number and anything that might be useful. With the goal to bring out the property history, given the inability to trace the property genesis, it has been decided to note any presence in the historical registers that have followed over time, particularly if scored in the Chiesa-Tiroli Cadastre, as well as in the Gregorian one.

In order to characterize possible modalities to approach the problem, ownership (public, private, mixed) has been highlighted and constraints (according to the Law 1089/39, 1497/39 or other). Moreover to contextualize the property in the landscape, a morphological perceptual analysis of the context has been drawn up, highlighting visual areas (closed, open, knots; main, secondary), the belonging context (front continuous, discontinuous, scenic backdrop, singular elements , nodes, focal points). The building classification deprives marking the building or even parts of it with an historical value (historic architecture, ancient historical, urban environment), or even by using a valuable contemporary architectural language and ultimately bringing up any cartographic and bibliographical references.



Fig.6 Emergencies survey

The second part of the cataloguing form aimed to the description of the property starting from prospects: through their dimensional and qualitative analysis; their characterization (primary, secondary, side, rear side); the number of floors above ground and articulation (basement, mezzanine, original plans, raised, attic space); main accesses (single, double, multiple); possible detractors visual context (billboards, banners, signs, parking meters, waste bins); presences or any affecting vegetation in the front. In this logic finishes facade are also analyzed, starting by highlighting the existing elements (bottom, plinth or pedestal, pilaster, shelf, balcony, string course, string course frame, frame for doors and windows, ornaments, coat of arms), their respective material (plaster, brick, stone, mixed, stone cladding, ceramic), their conservation status (excellent, good, medium average, bad, really bad) elements.

### **An innovative approach: identification of the parameters synthesis**

Taking a cue from the Latina Colour Plan Latin<sup>10</sup>, from cataloguing the first synthesis values have been derived, capable of inducing assessments of the prospectus in its context, highlighting the conservation of the background color (V1), the preservation of the building (V2), the surface alteration (V3), the relevance (V4): these are parameters related to the previous form entries.

To these four “visible” values, as a result of the analysis, many evaluable parameters have been associated, related to the design choices: the possibility of intervention (V5), the visual impact (V6), the historical integrity (V7), the contextualization of the color (V8). With these parameters it’s possible to begin to mark the property fate, as relationship between color and the property itself have been already highlighted.

From interaction between parameters other items that will affect the design choices have been extrapolated. From the starting three values related to the initial synthesis, the first is connected to the

10 L. Piemontesi, “Progetto piano del colore. I piani del colore della provincia di Latina”, Gangemi, 2006.

opportunity for action (A1), given by the minimum possible intervention and the contextualization of the color (MIN V1, V8): low values lead to not appropriate or impossible interventions, high values to primary interventions. The second parameter tries to explain the characterization of the place (A2), the average of the product between the visual impact and the historical integrity ( $V6*(4-V7)^{1/2}$ ) if is an high one identifies a featuring property .

The third parameter is related to the state of conservation of the property (A3), it mediates amongst the first three values related to background color preservation as well as to the preservation of the building and any possible alteration in the building surface ( $V1*V2*V3)^{1/3}$ , which if it is low it thus explicit the possibility of a good conservation of our architectural heritage.

Following these parameters leads to indicators seeking to realize an interpretation of the property status and the prominence in the context: I\_C stands for emergencies color as a result of a mathematical relationship between any further action opportunities and the local characterization ( $1.5*(A1-1)*A2)^{1/2}$ ; I\_D represents conservative degradation, which is the relationship between intervening opportunities and conservative status ( $1.5*(A3-1)*A2)^{1/2}$ .

Eventually from these two data derived synthesis parameters that carries to the project: E, the emergency, the maximum value between I\_C and I\_D, useful to comprehend which building (following the design steps) needs the first action, ie the first colors to impose; G, ranges, represents instead the class of the permitted ones, which reveals the freedom to vary even having a front, a value only correlated to the characterization of the environment (IF ( $P11 < 1.7; 3$ ); IF ( $P11 < 2.3; 2; 1$ )). E and G, ranges values and the emergencies plan, which, obtained, will be plotted in the project tables for every locality.

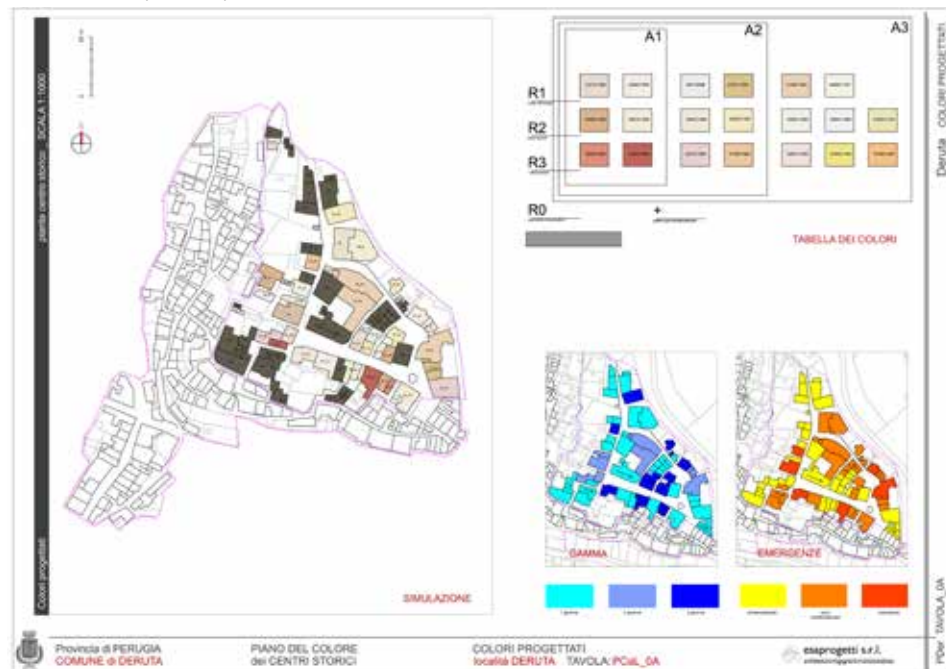


Fig.7 a Interpretation, synthesis and selected color



Fig.7 b Interpretation, synthesis and selected color

## The Design

Far process automation, the parameters study aims to exit from a subjectivism of aesthetic assessments too often left to the sole designer sensibility, structuring a methodology to define any choices. The interpretation system construction, which is still based on the interrelation within objective analysis and project evaluations, led to develop a way of doing determining what kind of elements to intervene on to in a temporal order as well as the color choice and the given freedom. Following the parameters construction, then it's clarified how some buildings will not be affected by the Plan, which in the event of material elements will suggest a building restoration and just in case of an historical interest, it will follow the competent Superintendent choices. First subjecting to the logic of design the most prominent to which is set a certain strictness in the color selection, the rest of views will have a wider choice that will follow the new conditions since both the original heterogeneity of colors -between adjacent elevations-, and the congruence with the first buildings changed color which will limit the infinite possibilities of the contiguous ones. It is a design relationship, to address any singular choice to the purpose to create in each historic center that unicum. The action follows the design of built and the perceptive reading of the city image, so that the space is primarily seen through the perceptual and visual axis, fundamental elements to understand the result to achieve: for example, in an urban property, visible only from an axis and in which the observer is moving fast, the will feature bright colors, able to capture the generally fleeting attention. Instead, in a introverted urban part, for exemple the heart of the urban and social space, there will reflect the main colors environment whereas.

The perceptual space interpretation, synthesized with primitive figurative bases such as point and line, is further an interpretative action of the territory which helps on building the system choices. The chromatic ranges are divided into:

- “local colors”, identified among those already in the punctual locations as well as judged adapted to the context, according to the “geographical colors” theorized by Jean-Philippe Lenclos<sup>11</sup>;
- “soft colors” and “bright colors”, clearly designed to create certain perceptual effects that will find similar elements amongst different locations with the goal of linking singular urban experiences in a wider landscape context. The key is the interpretation of the city image: there are conditions in which to enhance the “colors of the place” is necessary to contrast soft colors, and there are conditions in which in order to increase the attractiveness of the city centers bright colors are used.



Fig 8 -. Simulation of selected color.

Thus the instrument will report a two-dimensional plan with the class of colorings and range of allowed action for each minimum unit. Rarely will be imposed a color and generically, it will be left the right to decide to the owner who, in this way, will not suffer passively the city’s image, but it will be the protagonist following the dynamic relationship of a reflected identity from any environment. It is fundamental to combine to a punctual color choice, being aware of the inherent complexity in their design: in order to understand the adopted procedure, it may entrust the narrative to the construction of evolutionary logic<sup>12</sup> which has addressed the choices.

The “color event”, experimental data to be analyzed, is in the global builded of historical center in a shape that seems generally random, given the generally autonomous logic. “It happens” that in the city there are colors that are cataloged and classified. By applying a reasoned criticism, based on historical documents analysis and systematic comparisons, it can be recognized how certain colors

<sup>11</sup> J.P. Lenclos, D. Lenclos, “Colors of the World”, W.W.Norton & co, 2004.

<sup>12</sup> R. de Rubertis, “La città mutante”, Francoangeli edizioni, 2008



reflecting the identity of a peculiar environment, survived, through an ex-aptation, or prevailing over others or even just surviving as sporadic traces, as if they were self-generated antibodies to respond the image problems of current city.

The task of a good designer is first to identify these colors, then enhance them: once marked as the aesthetic points of reference capable of directing the further development, the project becomes a kind of genetic engineering intervention on the image of the city.

Thus historical centers in the area are identified, interpreted and represented, or rather re-presented with a tool able to analyze the landscape beyond the mere material aspect, being a knowledge tool, involves the community, simplifies the bureaucracy and therefor transforms the way of planning. The materiality ferries across a set of intangible values, using primary environmental resources, the culture, that “re-raised” in the landscape and reinforced in his being, triggers a cascade process retraining in the perception of the place, in space, in society.

## Conclusions

The color is the main character that defines the architectural survey, highlighting the elements of value and degradation of main fronts of the examined urban areas as well as the enhancement of physical scenarios in some urbanized areas and conservation and protection of the housing as well as control of new possible interventions and their insertion in the context.

The Plan of color also brings economic advantages: if someone interested in painting, cleaning and restoration of the buildings facades apply the addressed indication, published in full in the city website<sup>13</sup> [13], he can start to working just after a simple communication to the authority. It has to have the available chosen color range according to international encoding NCS, and / or any operations other than coloring, with attached cadastral plan concerning the identification building and photos of the facades from which it is possible to detect the context in which the building is inserted. This simplifies the process, by replacing the classic procedures of evaluation involving the relevant bodies and the preparation of appropriate practices, with a savings for citizen and for public administration as well.

The color Plan is not limited to a general aspect of fronts, but providing guidance on cleanup interventions related to these limited but unified areas becoming the city face, going down in the scale till these details related to the painting of windows and exterior doors, gates, windows, gates or shop windows, and also including the accessories or complementary.

The color thus reveals its nodal role, the foundation of a strategy to enhancing the image of the city that reflects its culture. Researching the type figurative is indeed associated with the action of identification, which means literally becoming equal, a coincidence of being that guarantees this feeling of “being at home” a membership of an ensemble. *Habitare* connects etymologically to the possession, *habere*, which is reflected in the act of realization of its architecture. In the embodiment of the defined relationship the discovery and awareness renewal path of belonging to a place, to a story even to a society ineffably strengthens. The Heidegger’s lure of “poetically living a place” thus finds in the implementation of the Plan, the conceptualization declination of the relationship between building and signification, whose penetration characterizes both the individual elements of the city, the figurative type, as well as the unit in the structure, in the mutual relations, thus the content research of shape and image.

<sup>13</sup> <http://www.comunederuta.gov.it/piano-del-colore/> [2016]. P. Costantini, *Spazi aperti della città diffusa*, in “Casabella”, n. 597, Electa Periodici, Milano, 1993

The identity research is linked to the underlying recognition process, a necessary condition to the memory to be able and remember.

The color denotes the identity, placing its references in the character, in quality as well as in essence. In the sense of the place.

## PIANO DEL COLORE DI DERUTA



Fig.9 -. "Deruta Color Plan" Internet home page

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## Drawing the Color: Project - Rules – Suggestions

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### Abstract

The color is a fundamental component with different peculiarities: human, environmental, architectural, objective, suggestive, formative and modifier, natural, designed, casual, that has always been object of study in the national and international scene whether it is analysis of the places that project of the color.

This study aims to highlight the need to understand the high impact aspect that color has in our management and planning choices, highlighting different approaches aimed to analysis and study of the individual cases. Color's Project, often result of unregulated subjective choices at national level, in part at regional and international level, play an important role in perceptual-environmental and identity level (Liguria, Piemonte, Miami, Brazil ...).

At urban scale the projects to rebuild entire neighborhoods can create a new vision of integrated urban scene or not as far as the spirit of the sites is concerned. (England, Italy, ..)

The precise color choices of individual buildings included in historical places, become elements of attraction or strong opposition both in the mnemonic aspect of the places that visual comfort. (Rotterdam, London, Panama ...)

The drawing, through the consolidated chronological, structural and visual-perceptive analysis, and also through the new advanced methodologies representation is the essential tool for understanding and propose new chromatic urban planning.

### Introduction

This study puts into evidence how the color appearance within the urban context should not be limited to only historical values, but also and above all to the overall vision of the city. If the United States, as shown in a careful reading of urban essays, sees in "Superblocks" building the fall of the city "lived" in favour of the only "inhabited", for Europe the construction of so-called "self-sufficient" and in Italy specifically most subsidised housing quarters beginning denouncing aspects contradictory as programmatically for formal design, spatial and constructive, but never self-sufficient with respect to the overall logic of cities. In addition, made initially public and subsequently redeemed in large part by private, these settlements are also inconsistencies in the management aspects; which, as well as on the town planning, architectural, landscape, social, economical, we inevitably reflects on the problems and strategies of a possible territorial *protection*.<sup>1</sup>

<sup>1</sup> G. Pellegrini The drawing for the Colour Plan: study on the compositional patterns in connection with the chromatic choices of planning. In: a cura di Maurizio Rossi e Veronica Marchiafava . Colore e Colorimetria. Contributi Multidisciplinari Vol. X B ., Santarcangelo di Romagna (RN):Maggioli editore, ISBN:978-88-916-0438-5, Genova,2014.

Color, with its ability to affect the perception of the shape, can reshape the volumes, the correct distances, harmonizing proportions, in any part of the world, with different strategies and aims, connected to the environment, to the landscape, to the social-cultural-political evidences and conditions.

## Methodology

Topics connected to color and to environment are not specifically related to national regulations, but rather to specific norms related to the single territory and landscape managed by the Municipalities through the Color Projects adopted by existing urban planning tools. In Italy, not all regions have adopted laws referring to the theme of color, among those already consolidated we can include Liguria, the Color Plan of Turin city of 1997 extending, at the methodological level, now to all the municipalities of Piedmont, Region Campania Public building Regulations for the implementation of regional law 18 October 2002, no. 26: “Rules and incentives for the enhancement of the historic centers of Campania and the cataloging of environmental heritage and of landscape quality”, amendments to the Regional Law of 19 February 1996 n. 3, and the Sicilian Region Law with the” Plan of the Color of the Urban Decor and of the Landscape for the Cities, Seas and Mountains of the Regional Territory”.

In the absence of regional laws specific for the Color Projects, guidelines according to the government and protection territorial use, or the laws of protection by the Ministry of Cultural Heritage are being implemented.

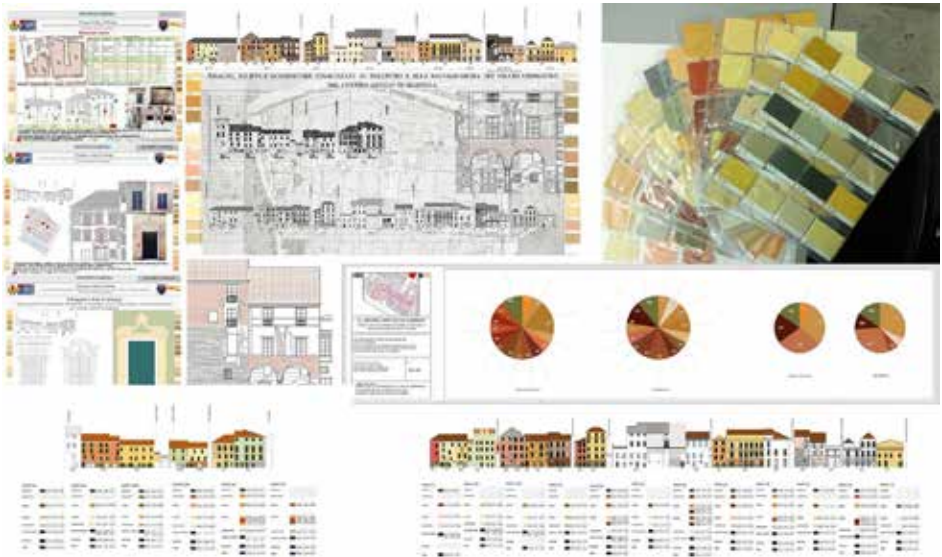
The Liguria Region with the law n. 26/2003 entitled “Color Cities”, which modifies lr 25/1987, considers as a fundamental value for the community, the decoration of buildings and of public spaces and it provides for the granting of contributions to the Municipal administrations that will use a “Color Project”. The project must identify both the materials, the colors and the pictorial techniques that are part of the local historical-architectural tradition, and the colors best suited to lighten the visual impact of large buildings.

Municipalities must comply with the requirements approved by the Regional Council with resolution 741 of July 8, 2004 (published in Burl No.31 of 4 August 2004, Part II) for drafting the project. The law also lays down funding for public and private entities that, in the context of the urban plans containing the “Color Project”, redefine the façades of the buildings. For the economically weaker subjects, the law established a special regional fund (Regional Regulation No 2 of 24 December 2004, approved by the Regional Council and published in Burl No.12 of 29 December 2004).<sup>2</sup>

Based on these regional regulatory references who writes has drawn up the Albenga Color Project(fig.1). The methodology identified a designing process for the analysis of the ancient center of Albenga for the conservation of the color values. The research has developed through the Agreement between the Municipality of Albenga, the Industrial Union of Savona and the Department of Science of Architecture, University of Genoa. This report documents a “Color Project” experience that, in addition to the already established theoretical and methodological aspects, has sought to define one of the still unresolved issues, namely, the transmission and the management of the data of this project, in which the guidelines are defined in detail, both on digital and paper media, and make them usable to improve both the management by the municipal technicians and the relationship with the professionals.

It is also emphasized that the effort to carry out the best and more focused control on the façades is motivated by the importance of the study object: the old town of Albenga, which together with Ventimiglia and Savona is one of the three pre-Roman cities of the West Coast, is a very important

<sup>2</sup> [www.regione.liguria.it](http://www.regione.liguria.it)



*Fig.1 Graphic summary of the study and of the Color Plan for the chromatic values of the ancient center of Albenga. Integrated survey, chromatic tables, chromatic percentages, operating catalog.*

center for Liguria that maintains its compact medieval structure within the walls, unchanged, both in the perimeter and in the conservation of the preminent historical features of the building. It also has a very special mix of medieval buildings with its preserved façades, and terracotta finishes and buildings with facades transformed with paintings from the 16th to the 19th centuries. The compact and circumscribed settlement within the historical walls has allowed to complete a colored mapping of 300 buildings.

The project is divided into two main phases of intervention, which are part of the consolidated analyzes and surveys that have produced the elaborations foreseen by resolution No. 741/2004 and which can be summed up briefly as: first phase (environmental Surveys: inspections on sites, metrical and geometrical surveys, and fact-finding survey) and second phase (graphic representation, color survey and color mapping, database).

The consultation documentations are:

#### CONTEXT ANALYSIS

-planimetry project area - Maps of roofs and roads paving materials - Façades' decorative and chromatic survey - Technical files of individual buildings - Thematic cartography - Colors maps - Cards of color - Laboratory analysis.

#### OPERATING PROJECT

-Planimetry with identification of intervention types - Road fronts with detection of Proposed color values - Abacus of materials - Manual of the interventions - Technical standards for implementation. Operating catalog: chromatic layers (organized in 6x6 cm samples relating to the color survey, to the map number, to the direct color drawings and to the reference cards) to the exclusive use by Municipal technicians, through the definition of the choice of color combinations between the component parts of the facades, overcoming the method of statistical processing of the censused data, but using directly the samples of the chromatic layers. The catalog is subdivided into queues containing the color samples, 6x6 cm on paper support,

removable and accostable.

At least 4 samples per surveyed color are provided, giving the ability to simultaneously map multiple folders to make an immediate perceptual simulation of color or street color combinations. Once the preliminary design choice has been made, the color scheme is required on samples with plaster support of at least 1mq for direct environmental assessment. The project choices provide for consistent interventions in the Corresponding mapping number, in our case, to the unit body factory and not to the individual properties. The novelty is that the chromatic layers having overall management will be better able to control the chromatic changes that will be created with the puntual and individual planners' proposals.

#### RESTORATION OF CHROMATIC VALUES

In order to retrieve the color values of the historical centre , it has been mandatory, as specified in the Project Implementation Rules, to refer to the attached color table. Any variations derived from direct chromatic survey carried out during the painting phases will be possible with variants apart from the technical standards for implementations. The chromatic table is the direct and indirect result made according to the CIE methodology and Survey of the chromatic values of all existing finishing layers on the façade, even if unclear, useful for the construction of a database of façades' transformations; -Survey of the chromatic values of all the elements overlaid on the façade, both functional and accessories, made of wood (doors, windows, shutters), iron (railings, gratings, sheds, insignia, keys, etc.), in stone material (sculptures, bas-reliefs), or part of technological installations. -The decorative chromatic survey , relating to the architectural and decorative components of the building, therefore covers both its prospective structure as well as individual details, such as bands, moldings, simple and complex ornamental elements. In view of the original color decay due to the action of atmospheric agents,of the pollution and of the natural process of fading, the survey was carried out in areas where the state of conservation had the best possible conditions in order to be analyzed in detail; -the finishing layers of the materials of the building's façade, their state of conservation and any degradation phenomena. These research has been carried out either with traditional methods (direct survey , photographic, photogrammetric, etc.) or destructive (hammer, chisel) operations necessary to extract the finishing layers with the support (plaster) to be subsequently analyzed in the laboratory . They were made: stratigraphic analysis; state of conservation of façades in general and facade materials, with which are highlighted new types of degradation such as cracks, crevices, detachments, bulges, erosion and discoloration phenomena.<sup>3</sup>

The same methodology is applied to Strevi Color Project, in Piedmont, under the Research Agreement between the Municipality of Strevi, Compagnia di San Paolo and Department Architecture and Design in Genoa.<sup>4</sup>

This project has dealt with an urban historic area with few valuable features, and great difficulty to find historical-iconographic, and with strongly altered colors. The research was based on the study of the chromatic valences of the Piedmont region with reference also to the Color Plan of the city of Turin. The color plan of the city of Turin was experimentally completed in 1979 on the basis of an university research that brought to light procedures and colors that were used in the past to decorate the façades.

- valorization of the physical scenarios of the City;
- conservation and protection of the building heritage;

<sup>3</sup> G. Pellegrini, F.Salvetti ,Analisi, Rilievi e Schedature dei Valori Cromatici del Centro Antico di Albenga. Il progetto di conoscenza e le fasi operative. Alinea Ed., Firenze, 2012

<sup>4</sup> Research Agreement between Strevi Municipality, Department DAD and Compagnia di San Paolo. Scientific Responsible: G. Pellegrini. Group of work: S. Eliche, F. Salvetti, M. Scaglione.

- evolution in the collective of aesthetic appreciation for color;
- the readability and recognizability of stratifications of different urban tissues.(fig.2)



Fig.2 Graphic summary of the study and of the Color Plan for the chromatic values of the Strevi . Color Plan, Integrated survey, Degradation Survey, Chromatic survey, chromatic tables, chromatic percentages.

Basically, the perceptive-environmental aspect is the great protagonist of the color projects that varies not only in terms of the environment, landscape, or territorial features, but mainly based on the visual memories of the inhabitants and/or the visitors and above all on the cultural base. The case of the Miami Deco neighborhood puts in place a critical consideration of design choices. The new architecture built in South Miami in the first decades of the twentieth century is inspired by different European and extra-European artistic styles and creations such as African tribal art, the formal typologies of atzeca, maya and egyptian architecture, the colors and the graphic scenographies of Russian Ballets, Classical Greece, Fauvism and Cubism.

Art Déco District constitute the National Register Art Deco District in Miami Beach and they are recognized as architecturally significant and protected by the Historic Preservation Ordinance which prohibits the demolition and which controls the degradation, imposing rules that define the interventions, the choice of colors and the preservation of plastic and painted decorations.

The peculiarity of the choice of the colors of these buildings is affected not only by the artistic currents, but also by the chromatic tendencies of the interior design on pastel tones brought to the outside and adapted to the decorations of various shapes: tropical flora and fauna and geometric motifs as reminders of travel notes in Mediterranean areas. (fig.3)

In this district dominate mainly three styles: French Art Déco, Streamline and Mediterranean Revival. Though stylistic origins are defined, American experimentalism makes substantial changes, especially in colors and decorations, both internal and external, adapting to the taste of the place.

The cultural path has led to the current image and perception of an environment so full of styles, chromaticities and contrasts between modern and contemporary buildings, which seemingly exclude historical and environmental reasons, also taking into account the current regulations of Design of the new listed in the document City of Miami, Historic Preservation-General Design

Guidelines. With the institution of the National Register Art Déco District in 1976, an awareness campaign for the protection of these buildings began, which, however, in some cases leads to the excessive exasperation of the use of color, also called “madness” Decò.

In the 1980s, about 150 buildings had been redecorated by Leonard Horowitz, with great disappointment by the purists, who saw in the new colors the contrast with the original style, which featured the light façade background and colored decoration just for moldings.(fig.4) L.Horowitz, co-founder of Barbara Capitman, founder of the National Register, introduced a 36 color palette to be used both for the restoration of the facades of buildings within the district and both for the new buildings, often with highly impacted chromatic choices.<sup>5</sup>

A Search of the Years “60, carried by Kepes and Kevin Lynch, MIT teachers, on what the pedestrians notice on the streets of Boston, has highlighted how whatever is distinguished, aroused the interest of the user and therefore the roads that are narrow or “Reasonably large”, have a unique value in the revitalization of the inhabited centers. These results confirm, globally, in Europe as well as in the United States, the need to play on “variety Ways, contrasts, types of activities, through showcases, colors, furnishings to overcome the flattening of the blocks Unique and self-sufficient elements in the city.”<sup>6</sup>



Fig.5 Color Plan by Haas & Hahn for the favela in Rio de Janeiro.

As confirmation of this research, the global Let's Color Project by Dulux Company, Since its launch in 2011, the Let's Colour Project has helped transform and brighten over 600 local communities with colour, such as Rio De Janeiro Favelas<sup>7</sup> (fig.5), and the historical city of Salvador with 56 houses painted in the historical corner of Salvador known as Pelourinho. fig.6)

In 2006, the artists Haas & Hahn thought of turning the favela of Rio de Janeiro into a better world by involving the community in the expression of one's own identity. A 120-color palette proposed by a well-known color paints manufacturer for coloring cities is the project that was born in March 2011 from a “world-wide business idea involving Brazil, France, England, India, South Africa, the Netherlands, Turkey and Hungary with the same intent, the same motives, the same ways.

<sup>5</sup> G.Pellegrini, L'Art Déco District a Miami: valenze storiche e riproposizioni attuali. In: a cura di Maurizio Rossi e Andrea Siniscalco. Colore e Colorimetria. Contributi Multidisciplinari Vol. IX A. p. 521-530, Santarcangelo di Romagna (RN): Maggioli editore., 2013.

<sup>6</sup> G. Pellegrini, Colorare le città: un'iniziativa a livello globale in relazione alle attuali problematiche legate agli interventi di riqualificazione urbana attraverso lo strumento “colore”. In: Atti dell'Ottavo Congresso UID, XXXIII Convegno Internazionale deidocenti delle discipline della Rappresentazione. LERICI, 13/10/2011, p. 1-8, ROMA: Aracne ed.

<sup>7</sup> <http://letscolour.ie/>



The project proposes to the inhabitants to paint spaces with the advice of experts of the company and of local artists. The 120 proposed colors fall into vibrant colors ranges, and the choice, once the intervention site is identified, is the result of a strong sharing between experts of the promoter, government agency and citizens.



Fig.6 T. Pelourinho. colored façades. Salvador de Bahia.

The historical city of Salvador was the next stop for the *Tudo de cor para você*. 56 houses were painted in the historical corner of Salvador known as Pelourinho.<sup>8</sup>

Color values, not necessarily linked to norms but resulting from spontaneous interventions, may be at neighborhood level such as London and Paris cases.(fig.7)

The London squatter phenomenon fit into the Victorian neighborhoods abandoned by middle and upper class in the post-war period. The availability of these spaces has favored a new form of life also associated with resilience to the crisis. The 1970s marked the change in use of these houses. Addressing the first maintenance issues, density in some squats districts transforms entire neighborhoods into intimate Place Living, transforming homes into meeting places, with a particular atmosphere in every neighborhood.

“Squats” transform Victorian neighborhoods into a spatial device of not accepted subcultures, but they also give rise to a regeneration and revitalization system such as the Notting Hill, or the spontaneous colors of Rue Cremieux in Paris, where the inhabitants began to color their homes in an autonomous form for their mainly identity purposes.<sup>9</sup>

Different is the case of the island of Burano, which historically presents very saturated colors as recognition elements from the sea by individual owners, the fishermen. Color therefore represents a strongly identifiable element in these cases with different derivations whether they are political, cultural or territorial.

<sup>8</sup><http://whc.unesco.org/en/list/309>

<sup>9</sup>L.Martini, *Città in crisi, Londra 1970-1980: la città degli squat*, UrbanisticaTre, Quaderni09.



Fig.7 a. b. Notting Hill in London; c Rue Cremieux in Paris; d. Burano Island, Venice.

At urban scale, Renzo Piano's Project Located in Camden London,<sup>10</sup> inserted into a strongly diversified urban complex, with medieval traces, traditional urban blocks and modern building. In this case the problem of using color can be connected to the environment in the sense that the site is characterized by an uniform color due to the material and to the façades' finiture. In this context the architect can use even strong colors just a painter with a white canvas. (fig.8).



Fig.8 R. Piano and F.Priest Architects, St Giles High St, Westminster, London, 2010. Photos by M. Denance and J. Moolhujzen.

This environment had a dramatic impact on the design of the project, where color decays sharply and decisively, identity and amazingly, is like a large block installation organized according to the heights of the surrounding buildings where every front is unique, differing in height, orientation, color, and relationship to natural light. Glass, steel and ceramic are the primary elements of the external skin where the ceramic is used in different shade and colors that respond to the surrounding building, thus helping to integrate the scheme in the immediate urban environment.

<sup>10</sup> www.archdaily.com

## Conclusions

Color is an essential component and identity system for every place, in this research several situations are related to the chromatic design choices.

This research is part of a broader system of studies that sees an approach related to international territorial identities linked to the management choices by public administrations, at different scale level, even for single architecture.

The “colorful” architectures generate suggestions and reactions at a highly impacting perceptual level, such as the Didden Village case in Rotterdam, (fig.9) the Agbar Tower in Barcelona, the Red Kilometer in Bergamo, the Nox’s emotional installations or the phenomenon of parasitic architecture.<sup>11</sup>



Fig.9 Didden Village in Rotterdam, Extension private residence, NL MVRDV, 2002-2006. Rob't Hart photo. Experts from the Smithsonian Institute and the University of Panama have developed the scientific contents of the Biomuseum.<sup>12</sup>



Fig.10 Frank Gehry, Biomuseo, Panama, 2014.

<sup>11</sup> Pierre Engel, *Creare nel creato, il punto di vista di Herzog & de Meuron*, [www.constructalia.com](http://www.constructalia.com).

<sup>12</sup> <http://www.biomuseopanama.org/>

The conceptual design of museum galleries is by Bruce Mau Design, one of the world's leading design studios while Frank O. Gehry's work resembles that of a sculptor. In the Biomuseum project there are numerous references to local culture and biodiversity thanks to the use of colors and to the architecture of the canal.(fig.10)

Located at the beginning of the Amador Causeway and at the entrance of the canal, the Biomuseum seems to float like a floating vessel full of color.

The Caixa Forum by Herzog & de Meuron in Madrid (2008) represents the ambition of the designers, making it a real "urban magnet" for art enthusiasts, for the inhabitants of Madrid and for the many cosmopolitan visitors of this City quarter, according to a technical and architectural virtuosity.(fig.11)



Fig.11 Herzog & de Meuron, La Caixa, Madrid, 2008.

In fact, the entire "shell" of bricks has been suspended, thus releasing a covered square, above and under which the project is made up of two distinct parts. The coated brick walls, whose ancient windows have been walled up and reinforced with new geometric openings, and there is an overarching architectural graft consisting of the steel volume grafted above these original walls. Ornate with its rusty metal mantle and flanked by a plant wall, the new Caixa Forum is the result of a simple and powerful urban design, quietly imposes its identity. An architecture of contrasts and contrasts of atmosphere.

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# Street Art: transformation of the visual and perceptive identity of the city

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## Abstract

All the forms of urban arts and of their artists are often and inappropriately connected to the term street art, in fact, we must be able to distinguish between those who are today defined by media: graffiti, urban murales, the open-air museums, street art in a gallery or street art vandalism; but above all to retrace the origins, evolution that this kind of movement have had, and the practices from which they sprang.

In this sense, this study aims to examine the variety of cultural events, from the Mexican mural painting in the early decades of the twentieth century, up to the original graffiti in the ghetto neighborhoods like the Bronx in the late sixties, led to the international spread of this practice, and how its pictorial representations of large size and considerable chromatic impact, are now institutionally accepted and how they are radically changing the aesthetic/perceptive aspect of urban space.

## Introduction

The term Street Art includes today many forms of visual and artistic expression and communication that intervene illegally in the road dimension and a later stage recognized and appreciated by popular culture and institutions such as stencil art, sticker art, poster art as well as street installations, video projections and finally urban muralism.

Its continuous transformations and implementations make it difficult to clearly locate the field and generate traits that highlight the discordances and affinities with the writing experience. According to E.Roth, "Street Art is just the modern version of the Graffiti, rather than two distinctly distinct forms of art"<sup>1</sup>, while others confirm the genesis of Street Art in Graffiti, but consider them to be two completely different practices, M.Tomassini finds in Street Art not only the evolution of Writing, but also "a degeneration"<sup>2</sup>, because it loses many of the subcultural practices and approaches, attracting the attention of art galleries, with the consequence to make commercializing the artists' work.. Finally, the definition that John Fekner, pioneer of American Street Art, tries to give "all the art on the street that is not graffiti-writing".

These two forms of art share some stylistic techniques and both favor the illegal act, in fact Street Art, from Writing, "takes the idea of obsessive repetition and of relation to urban spaces, transports and some materials"<sup>3</sup> but the way to use the support is extremely different, the street artist makes the wall support as an integral part of the work, indispensable for its understanding, using the wall's peculiarities by inserting them into their work.

<sup>1</sup>E. Roth, *Geek Graffiti, a study in computation*, in *Gesture and Graffiti Analysis*, 2009

<sup>2</sup>M. Tomassini, *Street art: la città fra under e overground*, in *Vita e pensiero*, 2009, pag. 48

<sup>3</sup>D. Dogheria, *Street art, gallerie a cielo aperto*, in *QuestoTrentino*, 16.10.2004, pag. 1.

The writer, on the other hand, chooses the wall on the basis of the dimensions he needs, possibly without hesitation and avoiding overlapping his work with that of other companions. K.M. Gleaton points out, “while Graffiti has a more standardized language, Street Art tends to reflect where it is installed because the artist uses the surrounding area in creative ways”<sup>4</sup> While the definition of Street Art includes a dynamic dialogue open to the context, through the use of support as an active part of the work, in Graffiti “the material use of the road is irrelevant to its meaning because it can be anywhere and in any case mean the same thing”<sup>5</sup>.

## Methodology

This research, carried out through the chronological and critical/analytical analysis of the multiple artistic expressions and of the socio-cultural-political events that have brought internal implications, lay the basis for reflection of the perceptual visual predictions of the future urban space.

In order to understand developments in a chronological sequence, the trends are handled briefly by sections, highlighting cultural artistic aspects, parallelisms, diversity, contamination and vandalism.

## Mural Painting, Muralism and Murales

Painting on the walls has always been the most immediate form of expression that human beings use: from prehistory, Egyptian times, to the Middle Ages and especially throughout the Renaissance, when through mural painting parades, events and sacred scenes are celebrated.

It exalts the power of the local families or it celebrates the great patrons of the time. Between the end of the nineteenth and the beginning of the twentieth century, from a historical point of view, this practice is rediscovered by many artists for the exaltation of decoration-ornamentation of public spaces. Universities, municipal buildings, hotels, and international fairs are involved in a number of great paintings with aesthetic purpose to open up to the first tourism.

But the real turning point in mural painting is after the Mexican revolution in 1910 when it is associated with the spread of political and ideological contents due to its intrinsic value of immediate public communication and its wide visibility. The “muralism” is born, a pictorial technique of bright colors characterized by simple, recognizable and comprehensible elements to all social classes, for the denunciation of issues such as revolution, freedom and social justice. Diego Rivera, David Alfaro Siqueiros and José Clemente Orozco most represent and communicate to the people community ideas of equality, in support of the political and moral renewal of the country.

In general, the exponents of Mexican muralism use art, mostly performed outdoors, as a form of public communication and accessible for the community, for the construction of a cultural identity. Often, this type of painting, a direct language, does not represent realistic figures and proportions, but rather surrealistic and imaginative visions that are rich in meaning that lead the public to reflect. The murals, “the official art of the revolution,” begin to expand beyond the borders of Mexico first in Chile, Argentina and Uruguay, and later in the United States, thanks to the possibility of some Mexican muralists to work on commission in some major American cities, and finally in Europe. During the Great Depression, President F.D. Roosevelt<sup>6</sup> makes a Keynesian restoration<sup>7</sup> plan in order to solve the problem of unemployment and to improve citizens’ living conditions.

<sup>4</sup> K. M. Gleaton, *Power to the people: Street art as an agency for change*, University of Minnesota, Agosto 2012, pag. 13

<sup>5</sup> N. A. Riggle, *Street art: the transfiguration of the commonplaces*, in *The Journal of Aesthetic and Art Criticism*, v.68, n.3, Agosto 2010, pag. 252

<sup>6</sup> “New Deal” (1933-1938) - Economic and Social Reform Plan implemented by political administration to raise the American Economy.

<sup>7</sup> J. M. Keynes (1883-1946), *The General Theory of Employment, Interest and Money*, Macmillan, London, 1936.



Fig.1 David Alfaro Siqueiros, *Primera nota tematica para el mural de chapultepec*, 1956

One of the the first contributions is the creation of the Federal Art Project (FAP)<sup>8</sup>, which funds public building and decoration projects, and in particular, 13,000 murals are spread throughout the United States. The decorations with murals are a blend of American realism and abstractism and communicate state ideology through issues related to history and social issues.<sup>9</sup>

These social changes attribute to art a public dimension, since these works are not objects to be relegated to museums, but artifacts to be exhibited in public places<sup>10</sup>. At the same time, between the 1920s and 1930s, artists in Europe, with the return to the decoration of large wall surfaces, try to find new ways of modern art that favor the relationship between artist and audience. The basis for the development of mural art in Italy during fascism.

During this period, many mural paintings in public places and buildings are supported by the Fascist regime, as tools of power and spiritual guidance of the people. Once again mural art enhances the communicative qualities, the ability to influence the opinions and views of common people<sup>11</sup>. Unlike Mexican muralism, expressive form of popular protest, Italian experience is transmitted through an intellectual language to serve the regime, that establishes the need to produce a public art of great popular, magniloquent, celebratory and propaganda impact.

Mural representations continued to exist throughout Europe even after the Second World War, characterized by social and political contents, but also with purely aesthetic and decorative purposes.

<sup>8</sup> Federal Art Project (FAP) - Program for the development of artistic activities based on the possible insertion into the world of work for precarious and unemployed artists, the production of works of art designed to embellish non-governmental public buildings, educate the American people in art, making it more accessible and encouraging Development of a national culture.

<sup>9</sup> C. Bertelli, G. Briganti, A. Giuliano (a cura di), *Storia dell'arte italiana*, vol. 4, Milano 1992, p.454.

<sup>10</sup> V. Grieve, *The Federal Art Project and the Creation of Middlebrow Culture*, University of Illinois Press, Urbana and Chicago 2009, pp. 87, 96, 97-99

<sup>11</sup> Nel 1933 M. Sironi elaborates the Manifesto of mural painting, an effective tool for expressing the true 'fascist art': educator of the people, formative of ethics, caretaker of style and greatness in common life, "instrument of spiritual governance"

An example is the Murales of the Sun and Moon of the artists Joan Mirò and Josep Llorens the Artigas, who in 1955 made two ceramic tile murales for the UNESCO headquarters in Paris.

From the sixties and seventies it is noted for its artistic value and great communicative expression the Sardinian muralism, a phenomenon of public art in which the deep political and social tensions of the moment take shape. Over the years, the phenomenon, in order to satisfy a greater public-tourist expression, has taken on an urban aesthetic dimension, where both rural and traditional activities, as well as feelings of isolation and nostalgia reside.

The term 'murals' generally refers to a painting made or applied on a wall. The word, therefore, does not circumscribe this practice to a precise historical period or geographical location. In the modern sense, however, the term tends to evoke a large painting with a marked political, ideological and social connotation, carried out on the walls of the streets or in closed environments, and offered to the enjoyment of the community.

The murals are realized on occasional walls, unprepared, chosen on the ability to make visible the message that is meant to convey at any time of the daily life of the people. And that is why painted walls are those of homes, workplaces, open spaces accessible to anyone.<sup>12</sup>

### Graffiti and Writing

The path that characterizes the graffiti, an anthropological phenomenon, primitive and spontaneous, is a different one. Hungarian photographer Gyula Halasz, better known by his Brassai's pseudonym, was the first in 1930 to immortalize this type of inscriptions covering the walls of Paris. It is in the late sixties and early 1970s that literature places the writer's birth and the spread of writing practice. Spontaneously formed on the walls of the ghettos and of the Philadelphia and New York suburbs and facilitated in particular by the appearance of spray cans, it is an attempt to oppose the socio-economic-political system and a visual claim to existence and belonging to a place.

These first generations of writers express their discomfort to the society in which they live, through the writing of their own pseudonym, the so-called "tags", elaborated in gigantic shimmering shapes, engrave trains, vans, abandoned walls, Signage and billboards.

In writing, the performance of tags, real social codes, become fundamental to spatial affirmation practices. In this sense the "signature" statement of "exist, I am the one, I live in such a way, I live here and now"<sup>13</sup>, tag is an expression for the determination of relationships between the members of its own group. The base of the graffiti is "the practice of aesthetic exercise related to the need of self-affirmation within a community of similar"<sup>14</sup>, in fact, these artistic performances, true courageous proofs, are reduced to the sophistication of writing on the walls with the unique aim of pleasing their own group and invading, reaching every corner of the territory, and of the urban scene.

Writing is an unauthorized vandal action, punished by the authorities, and considered "visual-perceptive disorder" by much of public opinion, which does not understand its motives and aesthetics. Between 1969 and 1974 the phenomenon, from a subcultural movement of sociological interest, becomes, for the study and for its graphic production, complex and depth of art. From simple, calligraphic-looking elementary signatures, in which they begin to study the lettering to highlight shades, contours, and color games; From simple throw-up tags consisting of two chromatic layers, one filling and the other of the contour, often based on more elaborate expressions (Masterpieces). Advanced lettering styles are distinguished in: rounded and easy-to-read (Bubble), geometric shapes of broken arrows (Wild style) or three-dimensional (3D), first structured work of a new expressive innovation that brings the writer to iconic figurativism that not only changes the

<sup>12</sup> Murales, Muralismo e Pittura Murale Cap.1 pag 11 Tratto da: Consiglio.basilicata.it DOCUMENT\_FILE\_438618.pdf

<sup>13</sup> J. Baudrillard, *L'échange symbolique et la mort*, Editions Gallimard, Paris, 1976.

<sup>14</sup> L. Visconti, J. Sherry, S. Borghini, L. Anderson, *Street art, sweet art? Reclaiming the "public" in public place*, in Journal of Consumer Research, vol.37, Ottobre 2010, pag 513.



perception of the space context but it is more understandable and open to communication with public.



Fig.2 Tag – Throw up – Bubble – Wild style – 3D - Figurative

It was in 1972 that the attempt to institutionalize and commercialize the phenomenon, considered to date absolutely independent and subversive. UGA (United Graffiti Artists) Association headed by Hugo Martinez, tried to transfer the street art into an art gallery, such as the later experience in the space Fashion in the Bronx and Gallery in the Manhattan Village, featuring Rammellzee, Futura 2000, Keith Haring and other interpreters of this new form of writing, reveals the existence of a street address other than just lettering.<sup>15</sup>

Following in 1980 the success of the Time Square exhibition in which Richard Hambleton's black painted shapes are the first iconic signs to appear on the walls of the city. This is a sign of the first profound split between the world of writers of purely lettering not connected to the context and the world of writers who use its sphere, size, form.

Since the 1970s, murals, which have been one of the most innovative aspects of contemporary art in cities, are largely replaced by urban graffiti, which link word to image: as well as being a spontaneous phenomenon, they collect in part the legacy of muralism, manifesting individual discomfort and launching political or social messages. Parallel to Europe, the first sporadic forms of the phenomenon appear in Amsterdam<sup>16</sup>, Paris and London, but it is during the 1980s that there is true expansion and popularity. The popularity of Writing around the world is due to media level, by the Style Wars and Wild Style movie in 1984, and by the photographic book "Subway Art" by Martha Cooper and Henry Chalfant, called the "bible of graffiti" by many generations of Writer.

In Italy, "writing" has just been mentioned in the early eighties, by some isolated cases in Milan, Bologna and Rome, but in the following decade, the practice spreads throughout Italy, leading to repression and tightening of the penalties for these vandalous acts, especially in the event of the destruction of historical-artistic heritage.<sup>17</sup>

In the last decade, the Administrations have offered legal walls on which artists can freely express themselves, those originally born in America were called Hall of Fame.

<sup>15</sup> The first American writers to exhibit in Europe are the Fabulous 5 crew at the La Medusa art gallery in Rome in 1979.

<sup>16</sup> Specifically in Amsterdam, the writer "Delta" elaborates a three-dimensional style that will be resumed in other European cities

<sup>17</sup> Art.635 Damage, e Art.639 Defamation and embezzlement of others' belongings are Articles of Criminal Code concerning the Graffiti.

The orientation is to formulate preventive strategies that lead to change rather than repression.

The continuous removal of works works is an incentive for artists to create new works, cleaning the walls or trains have always been the proponents of an even more fierce bombing, in fact the writers “see a white wall like a canvas waiting for art and colors”.<sup>18</sup>

### Street Art and Urban Muralism

Street Art is more relevant to the real-time practice of individual artists than to a unitary movement,<sup>19</sup> as such is the artist’s own activity, which by shaping content from time to time does not allow a definitive definition.<sup>20</sup> The first use of the term dates from a publication<sup>21</sup> by Allan Schwartzman in 1985, where the first structured works of New York writers of the early eighties are collected. According to Walde,<sup>22</sup> the historical phase contained in the book of Schwartzman refers to single artists operating in the street producing what will then retrospectively be called Street Art, while it is only from the new millennium that the concept of the term begins to indicate something similar to a global movement. It is in the early twentieth century that thanks to technological innovations, computers and “home office” before and then world wide web, the concentration of forms of creative road expression significantly increases in some of the most important cities in the world. This artistic and cultural phenomenon is characterized by the presence of different geographical and cultural backgrounds, as evidenced by the interesting experiences that have recently been the protagonists of the countries involved in the so-called Arab Spring. In Theran hundreds of murals, often rural, tell a city that no longer exists. But in the era of immediate global information, it is possible to identify, in individual urban contexts, a typology of local reality, based on spontaneity and awareness of places. Differentiation in modes, aesthetics or proposed themes can originate from an insistent element of the road landscape, as in the case of the pervasive CCTV system (CCTV) on which they usually reflect many of the artists working in London, or from a peculiar condition or atmosphere, as in the case of Barcelona, in which the large permissiveness combined with the solar climate of the city favors the formation of a casual style with lighted tones. In Mexico City, however, there are the historical traditions and the strong cultural identity to describe the local scene. This new generation of artists, thanks to world wide web and to the pervasiveness, are based on the codes and primitive style of the writers but evolved by studying their culture and aesthetics so that they can market the most shareable and appreciable part by the great public; Until even the institutions that have always considered the writers such as vandals, provocateurs and buffers of the public visual property, begin to consider it art and invest in this new artistic stream. The movement, also thanks to the worldwide success achieved by the works of the artist Banksy, begins to become more media and required as a new art to overcome in the process of commercial and promotional exploitation closer to a successful brand.

It is in this contemporary artistic landscape that we are witnessing a new reformulation of the concept of muralism, often defined as urban muralism to highlight the lineage of street art, and hence from urban art, and especially to mark the difference with historical muralism, against which it does not support the great ideological, political and social structure, but referred to as expression of memories and collective identities.

<sup>18</sup> A study of urban art as a Graffiti prevention strategy, Office of crime prevention, Aprile 2010, pag. 9

<sup>19</sup> M. Irvine, *The Work on the Street: Street Art and Visual Culture*, in B. Sandywell, I. Heywood, *The Handbook of Visual Culture*, Bloomsbury Academic, London & New York, 2012.

<sup>20</sup> M. Tomassini, *Beautiful Winners, la street art tra underground, arte e mercato*, Ombre Corte, Verona, 2012 e P. Bengtsen, *Street Art World*, Lund University: Alemendros de Granada Press, 2014, in U. Blanché, *Street Art and related terms-discussion and working definition*, in AA.VV., *Street Art & Urban Creativity Scientific Journal*, vol. 1, n. 2, Lisbona, 2015.

<sup>21</sup> A. Schwartzman, *Street Art*, Dial Press 1985

<sup>22</sup> C. Walde, *Sticker City. Paper Graffiti Art*, Thames & Hudson, Londra, 2006, in U. Blanché, *Street Art and related terms-discussion and working definition*, in AA.VV., *Street Art & Urban Creativity Scientific Journal*, vol. 1, n. 2, Lisbona, 2015.

This type of commissioned public art is characterized by the appropriation and remix of images, styles and techniques from every possible source, through paintings, sprays or other materials that decorate blind fronts of the buildings or large wall surfaces of other structures. They are compositions of great visual impact, for the monumentality of the design and the chromatic effect that can radically modify the perception of the urban landscape, becoming new references of the aesthetic-perceptual space. The artistic refinement of these works, highly articulated from a compositional technical point of view, involves very long preparation and execution times that inevitably dictate the approach of artists to institutions. To have a large space with high visibility on which to express their art, the artists are limited in the choice of spaces and sometimes of the themes dealt with the representations, but in particular there is no possibility of transgression and provocation against citizenship. Over the last decade the countless exhibitions, events and festivals, on a planetary scale, concerned Street Art and the particularities of urban muralism, led the movement to such a visibility as to have the opportunity to affirm itself within a closer dimension to that of public art from exposure, appreciated and sold at very high prices. The gallery in this sense becomes the artist's promoter, the works exhibited retain the characteristics of the original ones performed in the urban context, but often modified for insertion into closed spaces. But some artists don't want to be part of the system, "do not want to be slaves" of the society of consumerism and of its rules. The international blu artist in one night, armed with gray paint and chisel, canceled all his works in Bologna: famous battle, painted on the facade Xm24 headquarters of a social center, the man with the mask and many others.<sup>23</sup>



*Fig.3 Xm24 Deleted work – Blu – Bologna*

Moving works within a limited space visible to a paying public leads to the loss of the original message given the natural decontestation from the surrounding environment. The streets are the true world art gallery for its total accessibility and free use.

<sup>23</sup>The artist Blu's controversy came about when, to expose the graffiti and murals inside the Street Art - Banksy & Co exhibition in Bologna, a retrospective on the history of urban art from New York to Italy, from the eighties to the present, the works have been taken directly from the media without the consent of the author and above all decontextualizing the works themselves.

The common trend for all major cities in the world is to locate Street Art within the urban fabric in specific delimited and relatively decentralized areas, in some cases former industrial districts awaiting conversion as Ostiense in Rome, in many other neighborhoods first popular already interested in cultural-artistic experiences, such as Shoreditch in London, Kreuzberg in Berlin or Wynwood in Miami. This predisposition to concentrating Street Art in confined areas leads to attracting more speculative dynamics, and more or less obvious processes of gentrification. Recently the most striking episode of a widespread and constantly increasing case studies is that of Puerto Rican Wynwood in Miami. Another direction trackable on Street Urban's settlement map is the visual monopoly that in some centers it exerts on the walls of small roads and pedestrian crossings: Beco do Batman in San Paolo, Clarion Alley in San Francisco, Rue Dénoyez in Paris and in particular the Melbourne lanes system Hosier Lane. Icons of artistic vitality and popular tourist destinations, these places are a kind of enclave for the free exercise of the art of the walls, where the territorial delimitation along with the previously outlined sections poses a derogation to the legislation in this matter, which is predominantly governed by the necessity of permission of the owner of the wall and, if different, of the town administration.



*Fig.4 Visual and perceptual impact in the urban context– Kobra – New York*

For a reconnaissance of the Italian scene, Antonio Libutti in his documentary “With the eyes to the wall” proposes a reportage of the state of art of Street Art in Italy investigating forms, techniques and writing developments. Specifically, it should be noted that, as in the cases described above, Street Art, it is to be assisted by all those degraded and marginalized forms of suburbs.

In recent years, administrations, with the aim of strengthening social fabric, have worked in this perspective for the creative conversion of many forgotten urban spaces resulting from uncontrolled building; Pigneto, San Basilio, Testaccio, Tor Marancia, Ostensie are some of the examples in which urban muralism has not only responded to the degradation and vandalism of graffiti but has generated a change in the lives of the inhabitants. The case of Tor Marancia, now on tour of organized trips, tells the glorious past of Rome and celebrates the second contemporary life of a completely requalified district of the 1950s.



*Fig.5 Urban Muralism commissioned by Rome's Municipality - – Tor Marancia - Overview*

The twenty monumental murals of Tor Marancia ranging from figurative to abstract to conceptual, are related to the place, to the inhabitants and their lives, to the curiosities linked to the history of the area and to the still immense and bulky history of the city. Last but not least, this series of events where the “alliance” between institutional parts and street artist is in September 2016, with the invitation of five artists from the Ragusa Administration to intervene on the buildings of a highly degraded neighborhood, for their redevelopment and creative conversion of spaces.

The relationship created between artists and municipal administrations is an exchange of views; municipalities indicate their preferences and priorities and artists propose the potential aspirations of the project. In some cases, the administrators propose a possible topic or subject lead, or artists can give ideas for the realization of projects by proposing new ideas. There are hardly any cases of vulgar, anti-religious or anti-political subjects. In addition, artists prefer figurative solutions, easier to understand by the public, to ensure visibility and acceptance. In cases where administration wants more control over artists, it may ask for sketches in advance, but not everyone agrees on this mode, ending with performing other subjects than presented, since Street Art remains a free form art which hardly accepts restrictions.

## Conclusions

Contemporary façade reconfiguration, due to the transformation of high visibility surfaces in urban space, converted into places of high commercial value, is proposed as a perceptual device: graphic, visual and aesthetic artifacts contribute to the definition of a different image of the city, impregnated by a strong non-traditional cultural identity, given by the highly controversial youth culture in the sociological, legislative and legislative fields. Visual views, perceptions of the ever-evolving urban complex, which lead to the continuous transformations of sites in polyhedric structures, new centralities, new paths, new inner communication structure with profound consequences not only in the organization of the territory but also in the everyday life of the citizens.

In Italy, the increasingly frequent use of this technique on anonymous periphery buildings typical of the space for the characterization and the research of identity of these non-places generates multiple reflections: how will this type of artistic expression be chosen and regulated under the decorative, perceptive, aesthetic, cultural profile? Who will choose the figures of the artists to be involved, the representations to be performed and with which criteria? In the technical field will be the walls of the decorated facades subjected to their maintenance, restoration or cancellation at the time of their natural degradation? What will be the effects of this continuous transformation of buildings and common spaces for the visual and perceptual identities of the inhabitants?

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## The out of control phenomenon of the city brand

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### Abstract

*«There is a spontaneous image of the city, that is its historical body and its cultural stratifications (...) and there is the possibility, however, to produce a face or a dress, a new gesturality built by the city, suited to the times, appropriate, a sort of good manners for its citizen/user.»<sup>1</sup>*  
(G. Anceschi, 1994)

Over the last years, city brand's icons seems replace flag's symbols: many cities – but also regions or entire nations – feel the need to identify themselves in a typeface, a color, a sign, thus the territory can be represented – theoretically in a management and enhancement of local identity perspective – and printed on mugs, umbrellas, monuments and brochures, thus becoming a spendable resource in the global market. However, this phenomenon seems now out of control, at the mercy of public competitions, of tourism's policy and of a tenacious misinformation on the subject.

The text aims to investigate the elements that describe the collapse of this system of identification and communication of the territory, explaining the need to find a new disciplinary awareness aligned with *zeitgeist* that, as pointed out by Christian Jugovac (2010), presents us the need to «face the situation, which is of structural complexity, and to provide a focal point to the citizen in order to better orientate in the symbolical social environment» when today, in fact, city branding is «a mode of representation that is not capable of developing processes of identification, of belonging and of collective representation in a complex and multi-faced scenario like the current one».<sup>2</sup>

### Introduction

*«Tourism logos are becoming increasingly homologated. By now it is all a crowd, I do not know how meaningful and distinctive, of vibrant colors and shining suns, drawn with fast or infantile tract; green or blue scribbles that aim to evoke lakes and rivers and mountains and trees. Except in rare excellent cases, every nation, city, or district tries to stand out trusting in the same colors and drawings. So it is not surprising that El Salvador and Romania logos appears quite similar, and that between the sun of Rajasthan and Bulgaria there is only a few rays of difference (...).»<sup>3</sup>*  
(A. Testa, 2015)

Think about it to *España* (Fig. 1), the sign – called *tourist symbol* – produced in 1980 by Joan Miró, which helped Spain to reposition themselves after the Franco dictatorship. For Europe, this was just the beginning of an endless sequence of iconic signs, produced by each country in order to

<sup>1</sup> Anceschi, Giovanni. L'interfaccia delle città. Comune di Ravenna, 1994.

<sup>2</sup> Jugovac, Christian. Logo nations. Tra competizione globale e pubblica utilità. In AAVV. Krisis | identities. A cura di Unità di Crisi. Krisis, Venezia: Krisis Publishing, 2010. p. 81

<sup>3</sup> Testa, Annamaria. Comunicazione turistica fatta all'italiana. Cioè, circa, quasi, forse. Consultato 27 ottobre 2016. <http://nuovoutile.it/comunicazione-turistica-fatta-allitaliana/>.

assert its own identity inside what would soon become the great melting pot of identity known as the European Union. Among the factors that have made the collapse of this system of identification and communication of the territory, we can circumscribe the discrepancy between the brand design – often used in a superficial and naive way – and the social, cultural and political current scene, the facts of which inevitably have an impact on the dynamics that define the territory itself.

«History is a process that follows pre-designed templates and you can not place you outside of this historic flow. *Zeitgeist* (which means quite literally *spirit of the time*) will determine what you can or can not do (...). We just have to work on the zeitgeist boundary of the moment.»<sup>4</sup> (T. Braun, 2005) As Jugovac (2010) pointed out, the conscious exposition to the zeitgeist gives us the need to «face the structural complexity of the situation and to provide citizens a toehold to better orient themselves in symbolic social environment» when today, in fact, city branding is «a mode of representation that is not capable of developing processes of identification, of belonging and of collective representation in a complex and multi-faced scenario like the current one».<sup>5</sup>



Fig.1 España, Joan Mirò 1980

<sup>4</sup>Braun, Thom. *Cogito ergo Brand*: da Eraclito a Popper: breve storia filosofica del branding. Milano: Etas, 2005. p. 120

<sup>5</sup> Jugovac, Christian. Op. Cit.



## Methodology

### White Protest

In 2014 the ethical and professional conflict created by the unsuitableness of Italian graphic competition – which represent almost all city brand design opportunities –, guided and drafted mostly by local politics and administration, often indifferent to the designers professionalism, brought Aiap – Italian Design Association of Visual Communication – to promote the *Protesta Bianca* (Fig. 2). This event can be considered a real rebellion against management, which we can hereby consider incompetent and superficial, that promote overly inclusive participation conditions, inadequate and unprepared juries, insufficient awards and rights. The drop that overflowed the vase was the competition launched by the City of Naples for the realization of the visual image of the city. In this regard, on the Association's website reads:

«Aiap has invited all members and professionals of visual communication to participate in a form of *White Protest*, presenting an absurd proposal for an absurd call, equal to everyone and silently expressing the absolute dissent to this and other similar calls.»<sup>6</sup>

The right controversy raised by Aiap reached a large audience, so the association involved a large number of Italian visual communication professionals in the protest, which concretizes refusing to take part in competitions considered disrespectful of the profession or, alternatively, participating with an *absurd proposal*, a black cross on a white background. Despite the protests and the theoretical debates, the out of control phenomenon of the city brand has triggered the conviction that applying branding strategies to the territory – though coming from the universes of the market and consumption – would have led to answering many and archaic issues concerning the management of a complex entity such as the territory.

«The slogan or the persuasive image, repeated obsessively, may be fine for a banana or a mobile phone, but how can they enclose and represent the complexity of reality? (...) territorial marketing transforms territory, reality itself, into a commodity: not only the single monument or the single beach are sold, but the whole experience, inhabitants included.»<sup>7</sup> (F. Federici, 2016)



Fig.2 *Protesta Bianca*, AIAP, 2014

<sup>6</sup>Aiap. Protesta bianca. Consultato 4 ottobre 2016. <http://www.aiap.it/notizie/14526/16>.

<sup>7</sup>Federici, Fabrizio. Dai luoghi ai loghi, quando il brand fa turismo. Consultato 15 marzo 2016. <http://www.tribune.com/>.

## Matera 2019 European Capital of Culture

A paradigmatic Italian case is the project of the visual identity system for the nomination of Matera as 2019 European Capital of Culture. As tradition, it has been an international competition in 2011 to declare the winning project, designed by the agency ConTesta from Fucecchio, Siena. For the occasion, a proud local newspaper commented:

«Siena has not been declared the 2019 Capital of Culture. A regret for Tuscany, undoubtedly, in favor of the winner Matera. But Tuscany, especially Fucecchio, will be omnipresent, since Matera 2019's logo of was realized by a small group of designers *fucecchiesi* (...).»<sup>8</sup>

Below, the description of the logo directly exposed by Claudio Buglioni, creative director of the winning agency:

«There is the *M*, and the *M* turn upside down that become a *W*. The claim accompanying this solution was, not by accident, *Viva Matera, Matera Viva*. It is a subtractive architecture, an essential feature for those who like me visited the *Sassi*. In addition, the logo also remembers two hands crossing, symbolizing the indissoluble relationship between past and future.»<sup>9</sup>

Therefore the proposed logo visually presents a *M*, gesturing restored by borrowing the *Sassi*'s urban plot, drawn close a Trajan typeface and, despite the intentions simply wanted to testify antiquity and institution, unequivocally evokes the *Roman Capitalis* and consequently the *Caput Mundi*. The project was immediately unconvincing to the inhabitants due to the extreme synthesis and apparent genericity of the signs, which do not seem to be able to tell Matera's story, authenticity and complexity. Mario Piazza, in his recent criticism of the outcome of the competition, draws attention to the total indifference, from the city administration, to some excellent prior research on the Matera's identity. Common sense logically would have suggested relying on enthusiastic authors of research, as well as professionals of visual communication, the design of the identity system. For example, regarding the research 3 *Matera segni immagini relazioni verifiche* (Fig. 3), conducted in 2011 by Mauro Bubbico with a group of his former students from the Urbino's Isia Uniniversity – that has become a book thanks to the collaboration of the far-sighted typography Antezza Tipografi – always Piazza say:

«Pages vibrate and propose a contemporary survey methodology, with temporal leaps, approaches to improper but critical appearances. The design is molded to the place, it does not juxtapose. It is authenticity, not caricature or retrace. –Are images– Cresci wrote in the short introduction –that make people think of stories that each person has settled in his mind–, for this they create an aura capable of generating new visions.»<sup>10</sup> (M. Piazza, 2015)

Reflect also on the circumstance that sees Mario Cresci, author of the excited preface in Bubbico's research, as well as the volume *Matera* – interesting photographic reportage made between the Seventies and Eighties –, as the chair of the competition jury, allows us to perceive both the confusion surrounding the city brand phenomenon and its random consequences. Chaos, in this particular case, that was also accentuated by the fact that in the 1960s Cresci was personally committed to enhancing the history and identity of the city of Matera, involved with success in the public utility graphic design:

<sup>8</sup> Sabia, Marco. Un team di Fucecchio in aiuto di Matera capitale europea della cultura. Il Tirreno, 29 ottobre 2014. <http://iltirreno.gelocal.it/empoli/cronaca/2014/10/29/news/un-team-di-fucecchio-in-aaiuto-di-materacapitale-europea-della-cultura-1.10207099>.

<sup>9</sup> Ibidem.

<sup>10</sup> Piazza, Mario. Partire dal cuore di una città. L'architetto. Consultato 5 ottobre 2016. <http://magazine.larchiteto.it/febbraio-2015/gliargomenti/attualita>.

«The recovery of a peasant epic becomes a tale for a city, the symbols of the past, the environment and rural civilization identify the institutions and the language of the administrations. Cresci renews and provides the public institution with the tools necessary to transform an extinct tradition into useful communication.»<sup>11</sup> (M. Piazza, 2009)

In 2016, five years after the logo's competition – while continued the debate between designers and citizens of Matera, who were still publicly questioning about the decisions that led to the victory of the foreign agency's logo –, a new call for Matera 2019 European Capital of Culture was called. On the official website reads:

«Over 4 years have passed since Matera 2019 selected its logo with a process that contained our key values such as openness and transparency. (...) But now a gear change is needed: the logo must be accessible to both institutions and private individuals in a clearer way (...). For this reason, as has happened to almost all other European Capital of Culture, and as has happened in the case of Expo Milano 2015, from the application logo we pass on the logo that will accompany us until 2019 and beyond. A logo that will have the task of containing Matera-Basilicata 2019 values.»<sup>12</sup>

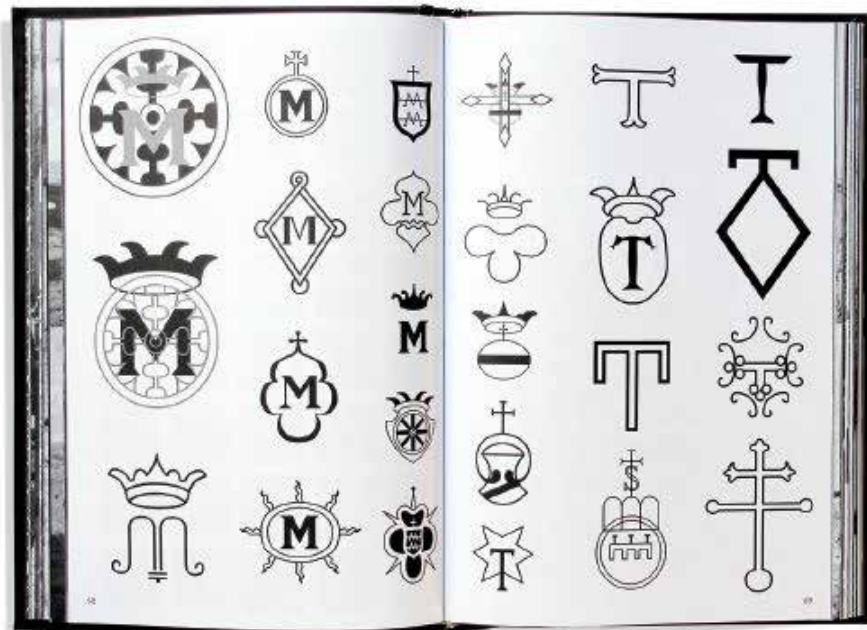


Fig.3 Matera segni immagini relazioni verificate

<sup>11</sup> Piazza, Mario. *Matera. La città magica e l'antropologia della grafica di pubblica utilità*. In Rauch, Andrea, e Gianni Sinni, a c. di. *Disegnare la città: grafica per le pubbliche istituzioni in Italia*. Firenze: Lcd edizioni, 2009. p. 152

<sup>12</sup> Bando: *Un nuovo logo per Matera 2019. Matera 2019 / Capitale europea della cultura*. Consultato 27 ottobre 2016. <http://www.matera-basilicata2019.it/it/archivi/news/687-bando-un-nuovo-logo-per-matera-2019.html>.

## Conclusions

The apparent confusion, as well as an apparent inconsistency between some elements of the story, express a strong crisis, a misunderstanding inherent not only in the Matera case, but relative to the difference between superficial practice and disciplinary awareness of what, in this specific case, belongs to the sphere of the project of visual identity.

«Graphics has many ways of operating on the visual form of a territory, also because time has changed the way you perceive and communicate a place. From the stereotype of a natural and spontaneous image – the Vesuvio and the pine (now disappeared) of Posillipo – we have gone through the planned construction of communicative devices, the artificial dimension of urban iconography. (...) It is therefore appropriate to better understand how the identity devices, at what levels they operate and what values they want to represent.»<sup>13</sup> (M. Piazza, 2008)

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<sup>13</sup> Piazza, Mario. Disegnare le città. Branding in Europa. Consultato 26 ottobre 2016. <http://socialdesignzine.aiap.it/notizie/9903>.

## **Looking at the Vineyard**

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### **Abstract**

If we take as reference the ELC (2000) landscape definition as an area perceived by people, whose character is the result of the action and interaction of natural and/or human factors, the local identity depends on the this area perception in the collective imagination.

As a result before making a public action that modifies a skyline, a waterfront or riverfront the activity increasing public awareness is necessary in the presentation and choice (only in the case of design contests) the project, so that the object belongs to the people even before the creation. In this sense, along with a analysis and resulting evaluations context-dependent, the visual- perceptive studies, own landscape architecture , are a useful method to proceed.

An interesting clue as to adapt to the contemporary is the study carried out by a Lynch's team (1973) to safeguard the main visual glimpses of Vineyard island threatened by a massive tourism development. The study has identified a number of sites considered extraordinary by the Vineyard's people for the unique and deeply meaningful visuals. A similar type of study should be the starting point to avoid or correct those contemporary interventions considered negative as the new barriers at the mouth of the river Magra, or the in Buren's portals in the discussed Piazza Verdi in La Spezia. The first case is a functional action, to avoid the flooding of the river in inhabited areas, however the second is an aesthetic intervention, which interrupted important existing or potential visual.

### **Introduction**

In Article 1, the European Landscape Convention (ELC) provides a definition of landscape like “an area of territory, just perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. Thus, landscape is considered a complex system of relationships between the social/human, natural/artificial and historical/cultural capital. These interactions represent that quality providing an individual and social well-being.

Thanks to the ELC, a new, sophisticated consideration on landscape issues has been developed, in which landscape is known as a physical entity that relates man and the evolution of nature, due to both spontaneous events and human activity, without forgetting the influence of historical events.

This remarkable document analyses the different definitions and the roles that landscape “plays” in various cultural contests and in the Countries; it aims at identifying the right actions, measures, just to improve the quality of landscape all over Europe; it highlights how the protection, the sustainable planning and the right management of European landscapes can contribute to reinforce European cultural identity, so that, eventually, it can also ask each country to address their own regulations, their planning and management activities, by respecting the identity of our natural and cultural landscapes.

Moreover, to understand the numerous values of landscape, it suggests the need for evaluation approaches able to involve the public opinion; it recognises, then, the experience of perception as evaluation of the quality of landscape, as a sort of multidimensional study, useful to estimate even those values scarcely.

Nowadays the beauty of landscape is corresponds to the synthesis of the quality of complex reality, the harmony and the interdependence between each element of its and man (Fusco Girard e Nijkamp, 2000). According to the ELC, it is very essential the empathy that can be established between a portion of territory, because of its own stimuli and signals, its natural, social/cultural resources and its cognitive/sensory relationships set in populations (Fig. 1).

As a result, the document of the Council of Europe seeks to formulate the dynamic relationship between the subjective and objective variable that Jakob (2009) described by the formula  $L=N+S$ , where L is for Landscape, N for Nature (seen as complex, multidimensional space) and, finally, S is for Subject.

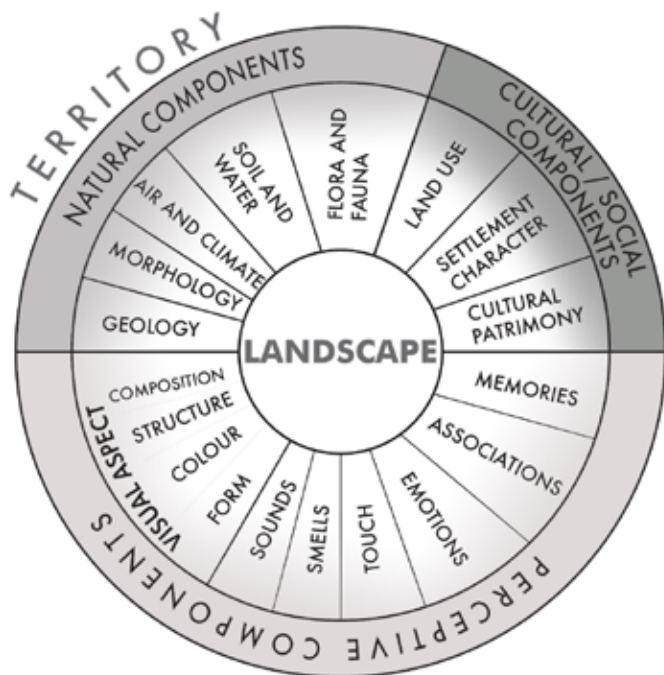


Fig.1 Landscape interactions. From: “La Valutazione della qualità percepita del paesaggio” by A. Franciosa

### Methodology

Generally, we “read” the landscape more or less knowingly, using methods we have just have adopted over time, on the basis of our own knowledge, culture and interests.

Therefore there may be a spontaneous reading, comparing the images of an any territory with those of well-known places, and checking out, in the same ones memorised by the observer unknowingly, the changes occurring over time.

On the other side, there may also be another reading of landscape: an analytic reading, expounded by experts dealing with this subject.

In addition, to study landscape, we need a multi-disciplinary status, through multiscalarity which has a site understood; thus, it needs the cooperation of several experts such as historians, urban planners, geographers and sociologists.

Landscape is a set of multiple elements and various kinds of systems varying quality: natural, semi-natural and anthropical; however we can see it as a sort of continuity of signs, forms and urban plans. Therefore, the protection, planning and management of landscape must be supported by information tools and evaluation studies, to understand the functional/structural features in rapport to both natural events and human activity (Fig 2).

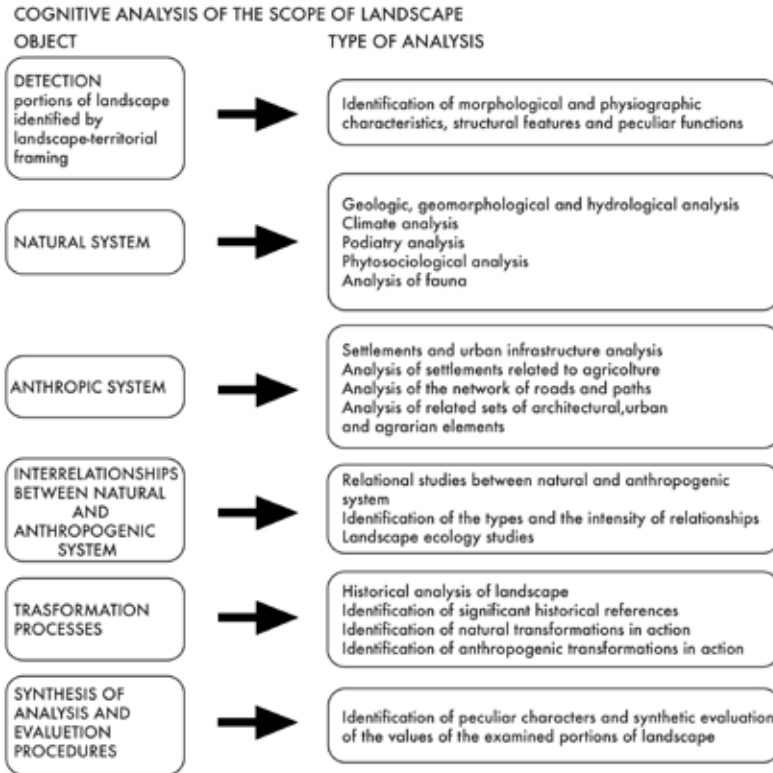


Fig.2. From: “Conoscenza e analisi del paesaggio costruito” by A. Calcagno Maniglio

Then we just refer to an analytic study that makes some disciplines collaborate: Geology, to understand the different configurations and conformations, occurred in an area because of slow and continuous natural changes; Biological Sciences, to know the original formation of landscape, generally made up of a strong assemblage of structures and elements of various kinds; History, to observe how man, from his appearance on earth, has created new man-made landscapes, modifying their natural aspect.

At the beginning, man introduced new forms gradually, without altering the features of landscape, but he tried “to dialogue” with it.

Man, with his own experience was able to understand those limits necessary to manage a territory for survival. He respected and feared unpredictable natural phenomena; he sometimes assigns them to the gods.

Human activity was just addressed to maintain a balance and harmony with the landscape, which was changing slowly; in fact the roads covered exiting paths, just suited to the lie of a site, the cultivations of land, the water control and the boundary hedges were all included in the territory, without modifying its features at all.

As a result it is as if man had learnt to transform the natural environment, adopting his own needs to it, exploiting its potential, but respecting the restrictions.

Technology progress and population growth resulted in land use and its inadvertently use, so as to cause even a sort of destruction of environmental balance, exhausting some natural resources.

In the XXth century, technology progress made man use his environmental resources wildly so as to cause disasters, on which anyway he had to take action; in this context, a remarkable example is the construction of embankments of the riverbeds.

During last century, human activity was real disastrous, as a matter of fact the original balance which man had established with landscape, was absolutely overlooked.

Different kinds of landscapes, such as historical centres, agricultural landscapes, river valleys and high coasts, were all transformed more and more wildly, changing the existing balance, altering the historical identity and every natural value; even every sign of local/collective memory was cancelled. Consequently the ecosystem has been transformed so much as to change the climate and hydrogeology function; in addition a widespread, random development of urbanisation, especially in mountain and marine resorts.

Nevertheless man realises that his relationship with nature has changed, he is always attracted by those beautiful landscapes, where traces of past civilisations still remain.

In the 70s man began to pay attention to those problems defined “environmental”, unfortunately, there are still today several difficulties in approaching and solving them, because of a scarce professional and administrative competence.

The starting point of an urban planning should aim at maintaining the environmental and landscape quality, considering those natural processes and dynamics which should be considered as constraints laying down some regulations of territory management.

To read the landscape we must be very carefully and there should be a strong involvement of experts, public administrations and citizens, just to defend the quality and the natural, cultural dynamism characterising that area.

It is important to approach a visual-perception analysis, which proceeds by breakdown and classification of elements considered landscape quality not to change. Hence, visual-perception analysis corresponds to a critical interpretation as well as an evaluative study, just to understand the complexity of unknown landscape, decoding every aspect of its; so, it may achieve an image derived from all available information, resulting, absolutely, from nature.

## **Policy Research**

The analysis of landscape perception from the resident population, in the field of applied sociology, matches strong functional interest in urban and landscape planning. The sociologist finds himself conversing with a public client influenced by a political-administrative culture, as well as by regulations. Nowadays the analysis of landscape, which can offer an interesting research study under public commission, belongs to the emerging strands of policy research. Moreover a territorial planning provides a new reading of landscape, that represents a new frontier in the field of sociology, promoting the social participation. Somehow, it is as if Policy Research answers the ELC, which



recommends “to establish procedures for the participation of the general public, local and regional authorities, and other parties with an interest in the definition and implementation of the landscape policies”.

Lynch (1964) considers the theme of perception as a priority objective in planning activity, because ordinary people can understand the quality of areas where they live. Man exploits his own senses: sight, smell, hearing and touch as a fundamental tool to catch “the mental image of environment” that is just the result of the observation and the dialogue with sites and population. Thus, each individual can offer just a reading of his; he tries to identify damages or benefices to succeed in improving it.

As concerns environmental psychology, Bourassa (1990) and Goleman (2005) distinguish three types of perceptive responses to external stimuli; they refer to three areas of the brain (reptile, paleo – mammal and mammal):

1 the instinctive perception, relating to the reptile area of the brain; it is associated to an easy, immediate reading of landscape, after perceiving or inferring some elements of its. Man can realise what happens in the surrounding area.

2 the affective area, relating to the paleo mammal area of the brain; it involves the emotive aspect, related to the experience of life and to the age of each individual in different cultural, social contexts. It results the most difficult analysis because it deals with elements that change continually.

3 the intellectual area, relating to the mammal area of the brain; it closely depends on the cultural formation of individual, that influences the functional understanding of the surrounding environment.

To promote sociological research, it is useful to highlight the concept of “geographical distinction” as Third space by Edward W. Soja. According to his opinion, man has to gain spatial experience in three ways: the first space or “lived space” is exactly the physical space in which man acts; the second space or “perceived space” is where man elaborates and expresses his own emotional aspect; the third space or “conceived space” represents an interaction between the previous ones. So it is a “reformulated space” which derives, not only from imagination, but also from the alternative practices of an existing space.

Generally for tourist-recreational and residential purposes, man tries to spend as much time as possible in favoured landscapes, both natural and anthropic. It is thus important to investigate the preferences expressed by the residents or people who use an area for recreational purpose. Then, to define a historical landscape as a good, we have to know its own history and its cultural evolution. The reading of landscape can be subjective or objective; both of these methods are indispensable to achieve a valid, reliable result. The former depends on the value of landscape, from a visual-perceptive point of view; the latter, on the other side, depends on the historical-cultural values of landscape. Finally if you use both of them, your reading will be, of course, more complete and more correct.

Tiziano Tempesta and Mara Thiene (2006) propose a new way of evaluating the landscape, according to this formula:  $LQ = f ( X; I; )$ , where

LQ = landscape quality

X = set of descriptors of landscape

I = set of individual features

Hence, they just aim at attributing a value to the quality of landscape and interpreting it on the basis of some possible descriptors and their features (Fig. 3).

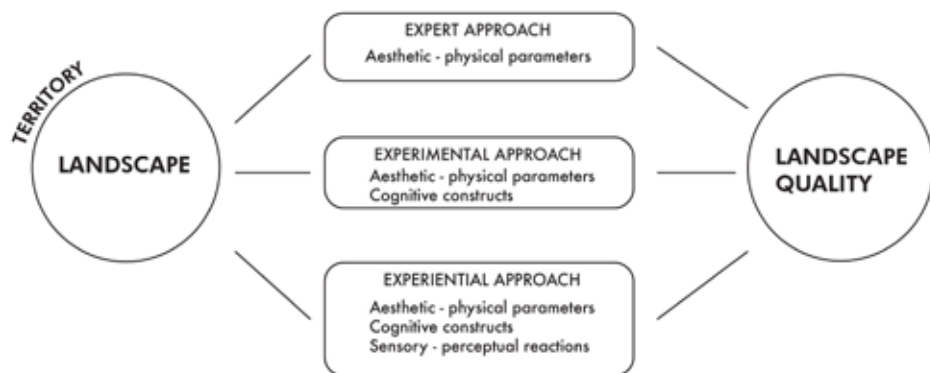


Fig.3 Approaches to evaluation of the landscape quality. From: “La Valutazione della qualità percepita del paesaggio” by A. Franciosa

### Martha’s Vineyard Island

The study led by Lynch and his team in 1973 about the method of preservation of the main glimpses of the island, by now threatened by a massive tourism, is sure a valuable point of reference today. To better understand how the island is considered and loved by those who know it, 84 people were interviewed. The main characteristic of this island is its landscape variety, with many distinct. It is important to pay attention to these ones, thinking that any change shouldn’t alter their aspects and we should continue to appreciate them.

Actually the improvement of an area may happen when its character is closely linked to its own development. Anyway Lynch and his team have identified 8 types of landscapes: the salt lands, the bluffs, the moors, the hilly thickets, the wooded moraines, the open plains, the flat thickets and the wooded plains. They offer various visual characteristics and their development; moreover for each type there are some guidelines suitable for a potential urban development in case of a massive touristic flow. There is eventually an analysis apposite to grasp the impact caused by development and to supply the right strategy to study landscape carefully. The aspects to be considered are: development, density, type of control; siting and form of buildings; road and path character, parking; clearing and planting; materials and details; activities.

### The Magra river embankments: a study

The morphological evolution of the mouth area of the Magra river, examined from a geological, geomorphologic, topographic and archaeological point of view, lets us understand how it has always been object of antropic changes. This area is located in Ameglia, in the province of La Spezia.

The latest studies came back to 2007 by a group of researchers: Bini, Chelli and Pappalardo<sup>1</sup>.

They continued the previous experts’ study, such as Smith, Raggi, Sansoni, Raffaellini, examing every change over the time. In detail, it was important to rebuild the evolution of the coastal line from a historical point of view; the whole coast of Ameglia and Sarzana has undergone remarkable morphological transformations, considering the historical maps (1885,1928,1938, 1977), geological studies or other written sources. Over the years, Ameglia and its territory suffered repeated severe floods, confirming a critical situation of the mouth of the river. Thus, because of fear, scarce knowledge of this territory, a failure of prudent analysis, some hydraulic defence works were made, modifying the aspect of the area, distorting unfortunately that identity that had characterised over the centuries.

<sup>1</sup> Researchers from Universities of Pisa and Parma, Department Earth Sciences

During the 70s, after the economic boom, the demographic increase and tourism development, in this alluvial plain there was a relevant growth of construction, especially for residential use, unfortunately, without taking account of highly risky characteristics of the terrain and the hydrogeological impact. In the last few years the countless, unforeseeable meteorological episodes have represented a severe damage for the residents, for the constructions as well as a strong discomfort in short and long-term.

As a result, this water resource has not represented a benefice anymore, but a significant, critical issue. For this reason the Body of Soil Protection of La Spezia had started the construction of embankments on the right and left river banks, just to avoid the dangerous floods.

This work of constructing embankments has surely protected the territory, but has changed the visual perception of it, modifying the local flora and fauna and at last

The “low” embankments at the mouth of the river were strongly criticised. They were construed both on the right river bank of Bocca di Magra, and on the left one of Fiumaretta, near their promenades, which have always represented an added value for the riverside walk and an attraction for tourists, resulting, at last, an exceptional landscape.

In the past the man-water relationship was strong and evident. In fact the river trade and fishing were the main activities of the territory, plus a great tradition of seafarers. However, this kind of rapport has been losing relevance over the last 30 years. In short the embankments have represented a real break between man and water. Consequently Marc Augé can talk about the so called non-places, where human interaction is annihilated, they become some dehumanised and dehumanising spaces. These embankments have changed as well as destroyed the spatial planning of Ameglia, becoming itself more stranger to its inhabitants.

A more careful, rational analysis could have solve some of these problems, avoiding this marked transformation of the territory. Hence, the decision of developing a thesis about the requalification of both the banks of the mouth of the Magra river, because it is so urgent to find again a new identity of this territory, in favour both of the citizen and the occasional tourist, living and exploiting in a man-made landscape, taking its own positive results. The title of the thesis<sup>2</sup> is “Green Line for the mouth of the Magra river: protection, regeneration, connection”; it aims at regenerating the whole area of the mouth of the river, in detail: the hamlets of Cafaggio, Bocca di Magra and Fiumaretta, which have suffered a strong environmental degradation, just because of the construction of those embankments. Thus it provides a green line of the flow of cycling-pedestrian routes that link the various areas of Ameglia, today loosed from one another.

At Cafaggio it is planned a public park, exactly in a green area called “Mammellone”, next to “the Camping River” on the right river bank. The project of the park provides the construction of recreational, sports facilities, the upgrading works of car parks, and finally the planning of river paths and cycling-pedestrian routes in order to allow an alternative and sustainable mobility. Everything, taking into account the right empathy with the territory and the hydraulic aspects.

This thesis still wants to join together the various hamlets, above mentioned, exploiting the recent embankments, making them more functional, but mitigating the visual-perceptive impact.

The cycling-pedestrian routes would start near the camping along the new park, to branch off in two directions: Fiumaretta and Bocca di Magra. In Fiumaretta there is the intension to include a connection along the provincial road, that ends in the centre of the village, where its green equipped area will be valorised. Moreover there might be promenades and other routes on the riverside in correspondence with the embankments, so that the citizen can enjoy greater visibility of the river stretch and the surrounding territory (Fig 4).

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<sup>2</sup> Degree Thesis in Architecture, University of Study of Genoa, graduate candidates: S. Di Vincenzo and G. Fiasella, rapporteur: P. Burlando, co-rapporteurs: G. Brancucci and I. Vagge



Fig.4 Rendering of embankments in Fiumaretta before and after the project (Thesis S. Di Vincenzo and G. Fiasella)

Another connection, to join Cafaggio with Bocca di Magra, is a cycle-pedestrian footbridge parallel to the road which is at the mouth of the Magra river. Finally you can reach the promenade in correspondence of the low embankments; they are used as a sort of supports for a suspended footbridge, practicable on foot or by bike. In the section view it is possible to observe how the different levels of the promenade change; besides exploiting the embankments and cancelling the breakdown man-water, the same promenade can develop even parallel to the road so that the visual perception of the observer can change from point to point. This cycling-pedestrian route ends in a green equipped riverside, where a requalification is foreseen.

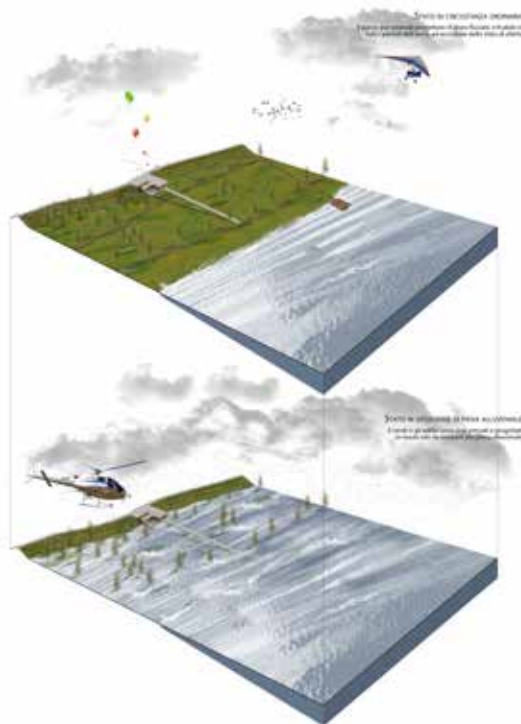


Fig.5 The Magra riverfront: render in normal and flood conditions (Thesis S. Di Vincenzo and G. Fiasella)

## Conclusions

It is evident that landscape is a complex enough theme, varying from place to place. Anyway, to understand it really, it is necessary an appropriate approach and an incisive reflexion, when we have to work on it. Thus the landscape has to be studied an in-depth, pointing out its specific features and characteristics by an interdisciplinary method, just to consider all its components.

Today Applied Sociology has become useful to support the urban planning; hence it is important, as well as fundamental to know the background of a landscape, but over all, exploiting the interpretation of three disciplines: town planning, suitable for the definition of architectural typologies and urban features; social History, suitable to identify those activities that have brought significant changes in social structure; and finally Natural Science. By these three disciplines, the sociological analysis should point out the right interpretations of *lived*, *perceived* and *conceived space*.

We match the quality of landscape to a series of values, which the community can find in an area, through its own daily experience, just based on perception.

So, this perceived quality is a sort of exceptional tool for public involvement just to identify that information and those values that biophysical studies cannot catch. But it is also evident that the public opinion is not often considered: the effective example is just the case of the “low embankments” on the right and left river banks of the Magra river in the province of La Spezia. Actually they have caused a significant discontentment of the inhabitants who, today, don’t succeed in finding the direct contact between themselves and the river, especially in the typical, ancient time promenades.

Likewise, in La Spezia, Piazza Verdi, the historical square of the city has been distorted, after an extensive urban development. The Florentine architect Vannetti and the French artist Buren won the public competition for the redevelopment of this historic town square; it is an interesting example of Rationalist city planning, in the early 1900s, where we can see some Art-Nouveau buildings. Then the Palazzo delle Poste (fig.6) was build in 1933 and in 1938 a few pines were planted in the middle of square; they were recently cut down to start the new urban project. This intervention was strongly criticised and debated, especially by the residents of La Spezia. According to Vannetti: “the idea is to give La Spezia an area, accessible to everybody; a real square which enhances the existing historical context with a work of environmental art at the centre, without any vehicle using it”.

Buren has created the coloured arches (fig.7) and he describe his artistic intervention as “a telescope, a space where we do not run, but we live. An exceptional observation point that connects the ancient city, the arsenal door, with the new city and the district of Migliarina”.

In the middle of square, the yellow, blue, orange and green portals approved by Buren should accompany people to the city and frame the space; while black and white pillars should give rhythm to the space.

This redevelopment represents a strong visual impact and the environmental civic committee disputed the intervention considering it as an affront to the history of the city.

The identity and the history of the square have been lost and so we can define it as a non-place; the citizens of La Spezia would have liked to be consulted by the Municipal authorities before completing the work.

In conclusion, the message of these studies is to understand the importance of the involvement of the population because any urban and landscape intervention may destroy the identity of a place, in which people live and identify themselves; so, by an intervention, we may kill the history of a place.



Fig.6 The Palazzo delle Poste, Piazza Verdi in La Spezia (Photo P. Burlando)



Fig.7 Buren's portals in the Piazza Verdi in La Spezia (render)

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## Art and perception for resilient cultural cities

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### Abstract

The crisis of the image of the city leads to a parallel representative recession, expression of a gap between society and urban space. Reinventing cities, restoring the meanings of the landscape and therefore of our identity is the aim of the study. The connections between the urban form and the image of the city bring the research in the field of representation. Taking in consideration the gap between city and society and the loss of identity in urban places, the research project wants to bring to light the storytelling inherent in the urban space, experimenting, with different forms of representation, possible strategies to set the urban landscape as an attractive and productive resource that overcomes a linguistic and social fragmentation.

### Introduction

#### Crisis of the image of the city and loss of place

The crisis of the image of the city leads to a parallel representative recession, expression of a gap between society and urban space. As Wim Wenders demonstrated, the overdose of images depletes their content of truth<sup>1</sup>, but through the figurative reading is possible to mend the relationships, “reinventing cities”<sup>2</sup> restoring the meanings of the landscape and therefore of our identity<sup>3</sup>.

The ambivalence between the appear and the being becomes a central theme in the city. The urban landscape is transformed from “cultural heritage” to “consumer goods”, and the image must sell instead of showing. According to the paradigm of local marketing, the city has to cope with economic competitiveness, tourism and cultural: the historicized space, especially in Italy, it is stated as an antithetical pole to the homologated metropolis, a place full of signs and culture expressed through an appropriate way of telling, using the image. The representation becomes effective in order to have a proper knowledge, protection, enhancement and communication of cultural heritage preserved by it.

The “iconocracy” in which we live, dominated by spots and emoticons, translates the language in inflates images, multiplied and fragmented in a repetition that creates the loss of the centre. This condition transfer the need to monitor production processes to the need to control the content and the meaning, because the communication process is developed in a few seconds. This synthesis depletes the content and creates a short circuit: if the knowledge passes through the imagination and the absence, the inability to capture images will become deprivation of content.

<sup>1</sup> W. Wenders, *L'atto di vedere*, Ubulibri, Milano 1998.

<sup>2</sup> F. Purini, *Inventiamo le città. Ricostruire pensando all'uomo*, in “La Repubblica, 19 settembre 1990, rip. in *Dal Progetto. Scritti teorici di Franco Purini*, F. Moschini, G. Neri (a cura di), Kappa, Roma 1992, p.166.

<sup>3</sup> M. Augé, *Nonluoghi. Introduzione a una antropologia della surmodernità*, Elèuthera, Milano 1996.

Condemned to the present, to wander through the labyrinth of signs in a place with no memory and no future, already announced in Piranesi's *Carceri*<sup>4</sup>, the homologation effect of a dominant stereotyped image in the processes of expansion and modification of the city, opposes those urban experiences, where the high level of recognition is ensured by supporting actions, aimed to enhancing the strong qualitative differences that history shows how original.

This explains how the theme purchases a key role in the cultural and political debate: cultural pluralism often ends in homologation and "loss of place"<sup>5</sup>. The result is a translation of the meaning in a relativistic lack of originality, in amorphous urban environments, devoid of any social bond. In the information age, European cities are going through an identity crisis that makes it difficult to predict the future of their figurative aspect, meaning by this the sum of the values received by the aesthetic dimension. The lost of the limit, theorized by Modern as in the work of Hilberseimer<sup>6</sup>, the consequential lack of expressive structure in the architecture caused by the same growth, increase the loss of meaning and recognition that lead to "a tragic lack of form"<sup>7</sup>.

### **Objectives: urban form, image of the city, perception and figuration**

The aim of the study is to invest the connections between the urban form and the image of the city, to prove the thesis that geometry, abstraction of our minds and foundation of the project and the survey, deeply affects the perception process<sup>8</sup>. Focus on research in the field of representation, the analysis is undertaken starting from the two-dimensional congruence between vision, pattern and drawing, using the synthesis provided by the primitive archetypes of the point and the line, with the intention of investigating the figurative routes that determine the transition from urban to the image of the city, a relation very important to re-establish the way of reading of the place and the sequential project. The attention to the representation process is related to the readability of the construction of the image of the city, neutral by itself, both in the genesis of the urban phenomenon which is certainly not teleological and in its action, and its ability to attract only those who are interested<sup>9</sup>. Identify can't be separated from identifying: recognisability allows the creation of a "logic geography" emerges where the value of the sign, central in both perception and in the subsequent design phase because of the bond that exists between interpretation and meaning. In the mental reconstruction of a "map" of the place, the implicit selection of particular elements does not affect only reading, but also characterizes its evolution. In the era of communication, *Imago Urbis* becomes the "face" of the city, that hides but tells his story, the experiences that have formed the character, the revelation of its essence, culture and identity that here are reflected.

### **Background: previous research accomplishments**

It wouldn't be possible to understand the possibly develop of research without making explicit references in the specific literature that structure its setting. The analysis of the image of the city, in fact, bring the representation to its borders, then channelling the interest of other disciplines that underlie the design. In particular, as Barthes says almost throwing a curse, "if you tried to sketch a semiotics of the city should be together semiotician, a specialist of the signs, geographer, historian, urban planner, architect, and probably also a psychoanalyst." Taking care not to get lost in the sea of texts and approaches to the topic, the research is investigated in congruity with the studies on the relationship between perception and drawing, but with a multidisciplinary vision.

<sup>4</sup> F. Purini, *Attualità di Giovanni Battista Piranesi*, Libria, Melfi 2008

<sup>5</sup> C. Norberg-Schulz, *Genius loci: paesaggio ambiente architettura*, Electa Mondadori, Milano 1979.

<sup>6</sup> L. Hilberseimer, *L'Architettura della Grande Città*, Clean, Milano 1998.

<sup>7</sup> G. Kepes, *Il linguaggio della visione*, Dedalo, Bari 1971, p.15.

<sup>8</sup> M. Filippucci, 2012. *Dalla forma urbana all'immagine della città. Percezione e figurazione all'origine dello spazio costruito*. PhD thesis in Science of Representation and of Survey, "Sapienza" University of Rome, (supervisor: prf. Roberto de Rubertis).

<sup>9</sup> C. Norberg-Schulz, *Il significato in architettura*, in *Il Significato in architettura, cit.*, p.268.



At the base of the gestalt study must be placed two texts which actually are alien to the architectural culture but firmly rooted in the representative analysis: *Das bildnerische Denken* (1956)<sup>10</sup> by Paul Klee and *Punkt und Linie zu Fläche* (1925)<sup>11</sup> by Wassily Kandinsky .

Instead in the field of the purely architectural context and relevant concerning the analysis, the most well-known study on the image of the city is perhaps the Kevin Lynch's bestseller *The image of the city* (1960)<sup>12</sup>, but also *Good city form* (1981)<sup>13</sup> where the same author explains the relation between perception and urban form. In parallel Gordon Cullen, in his *Townscape* (1961)<sup>14</sup>, analyses the urban context by searching the laws of aggregation and reading the relationship between morphology, perception, and project.

The central theme of perception is read in relation to the representation and to the project. In this sense, a theoretical basis is provided by Rudolf Arnheim studies in his *Art and visual perception* (1954)<sup>15</sup> and in *The Dynamics of Architectural Form* (1977)<sup>16</sup> but also by the analysis of Gyorgy Kepes in *Language of Vision* (1944)<sup>17</sup>, which in many ways are similar, as well as the more physiological analysis of Gregory collected in *Eye and Brain: the Psychology of Seeing* (1966)<sup>18</sup>. Complex and interesting is the study by Christopher Alexander *Notes on the Synthesis of Form* (1965)<sup>19</sup>, related to architecture and urban planning .

The broader theme of the city is configured by a copious production of historical studies that find a continuity philological connections from Nineteenth century: the crisis of the city in the industrial society, the jerky rhythms of development and reconstruction post-war lead to strengthen the interest not only on the unsolved problems of megacities, but also on the rules of development. The research of Camillo Sitte reported in his *Der Städtebau nach seinen Künstlerischen Grundsätzen* (1889)<sup>20</sup> draws attention to reading the European cities morphology; Marcel Poète with the *Introduction à l'urbanisme. L'évolution des villes* (1929)<sup>21</sup> proposes a comparison of continuity between past and present, finally in the famous Lewis Mumford's *The city in the story* (1961)<sup>22</sup>, it is possible to find analytical reading of urban events .

Marshall McLuhan's *Understanding with Media: The Extensions of Man* (1964)<sup>23</sup> is the theoretical basis that determines the severity of the thesis. In this sense, it must be set in parallel representation and city through his tools, first by reading the report with the measuring instruments, taking as a point of reference the work of Mario Docci and Diego Masters, *Manuale di rilevamento architettonico e urbano* (1994)<sup>24</sup> e *Storia del rilevamento architettonico e urbano* (1993)<sup>25</sup>.

In the second instance it is necessary to link the image to the methods of representation that generated it: in this sense, several analyzes were performed, among all the search of Erwin Panofsky and *Die Perspektive als Symbolische Form* (1927)<sup>26</sup>, but also the Pavel Florensky's *Reverse perspective*

<sup>10</sup> P. Klee, *Teoria della forma e della figurazione*, Feltrinelli, Milano 1984.

<sup>11</sup> W. Kandinsky, *Punto Linea Superficie*, Adelphi, Milano 2001.

<sup>12</sup> K. Lynch, *L'immagine della città*, Marsilio, Venezia 1985.

<sup>13</sup> K. Lynch, *Progettare la città: la qualità della forma urbana*, ETAS libri, Milano 1990.

<sup>14</sup> G. Cullen, *Townscape. Paesaggio urbano. Morfologia e progettazione*, Calderini Editore, Bologna 1976.

<sup>15</sup> R. Arnheim, *Arte e Percezione visiva*, Feltrinelli, Milano 1993.

<sup>16</sup> R. Arnheim, *La dinamica della forma architettonica*, Feltrinelli, Milano 1985.

<sup>17</sup> G. Kapes, *op. cit.*.

<sup>18</sup> R.L. Gregory, *Occhio e cervello. La psicologia del vedere*, Cortina Raffaello, Milano 1998.

<sup>19</sup> C. Alexander, *Note sulla sintesi della forma*, Il Saggiatore, Milano 1967.

<sup>20</sup> C. Sitte, *L'arte di costruire la città*, Vallardi, Milano 1953.

<sup>21</sup> M. Poète, *La città antica: Introduzione all'urbanistica*, Einaudi, Torino 1958.

<sup>22</sup> L. Mumford, *La città nella storia*, Bompiani, Milano 1981.

<sup>23</sup> M. McLuhan, *Gli strumenti del comunicare*, Il Saggiatore, Milano 1999.

<sup>24</sup> M. Docci, D. Maestri, *Manuale del rilevamento architettonico e urbano*, Laterza, Roma-Bari 1994.

<sup>25</sup> M. Docci, D. Maestri, *Storia del rilevamento architettonico e urbano*, Laterza, Roma-Bari 1993.

<sup>26</sup> *La prospettiva come forma simbolica e altri scritti*, G.D. Neri (a cura di), Feltrinelli, Milano 1984.

(1919)<sup>27</sup>.

In this context, it is possible to insert a series of multidisciplinary viewpoints, external to the narration, as literature and film: the first has the aim to destroy the image (of the city) and recreate it dynamically in a narrative way, the second must reveal it in its aspects less explicit, exalting the power of images. Then it become emblematic of the increasingly fruitful the *Città invisibili* by Italo Calvino (1972)<sup>28</sup>, as well as the filmic representations of Wim Wenders<sup>29</sup>, like Tokyo -Ga (1985) or the more recent Inception (2010) by Christopher Nolan.

## Methodology

### An original approach

The theme of the image of a city implies the notion of view as an active exploration, a research of essentials elements, of “perceptual concepts”<sup>30</sup>. As Arnheim explains, in his creativity, the perception performs a sensory level that, in the field of reasoning, it is showed as the comprehension, the ability to create schemes that are useful to interpret the experience through organized forms<sup>31</sup>. In this context, the foundation of the research is instead the concept of “gestalt” of urban space that is determined to describe the virtual representation process resulting from the perception, in which the drawing becomes the focal moment for the clarification of the form, a process to investigate its morphogenesis.

Among those who have investigated focusing on the construction of the figures, one of the main references is Paul Klee that defines his “theory of form” (*Gestaltung*) as the ways that *lead* to the form, because *Gestaltung* in its broader sense clearly contains the idea of an underlying mobility<sup>32</sup>. Gestalt, over against form, is something more alive, it is in a manner of speaking a form with an undercurrent of living functions, a function made of functions. Gestalt is the general rule of the form, his taxonomy, the archetype, the result of the organization of geometric elements and their operations: the same form may have different shapes, as the concept of parallelepiped has endless physical representations. Gestalt means identify to be oriented and, conversely, to be oriented to identify. In urban studies, the gestalt goes inside the language of the image, as seen in its fullness of cultural product, to search for the genesis of the relationship between drawing and the city and its relationship with man.

The process of gestalt, understood as an intermediate step between perception and drawing, is based on the two-dimensionality of the image, and at the same time representation which stands as a testimony of the interpretation of signs. If the city is made up of signs, its interpretation will be based on characteristic elements which determines its recognition, a transformation of the percept in condensed schemes, structured by primitive geometric elements, identified, in according with the theories of the Twentieth century, in the point and the line, and in their combinations. The figurative interpretation of the image of the city is therefore based on an encoding of continuous discrete units, which in their simplicity contain prerogatives which, by virtue of their genesis, determine the type, the logic and meaning.

If is defined the figurative typology in function of the identification, it is also useful to explain the concept of figurative structure associated with the orientation, because as carefully analyzed by Kevin Lynch, “the world can be organized around a series of focal points, can be divided into

<sup>27</sup> P. Florenskij, *La prospettiva rovesciata e altri scritti*, Gangemi, Roma 2003.

<sup>28</sup> I. Calvino, *Le città invisibili*, ried. Mondadori, Milano 2002.

<sup>29</sup> W. Wenders, *L'atto di vedere*, Ubulibri, Milano 1998.

<sup>30</sup> R. Arnheim, *Arte e percezione visiva*, cit., pp.55-58.

<sup>31</sup> *Ivi*, p.59.

<sup>32</sup> P. Klee, *Teoria della forma e della figurazione*, Feltrinelli, Milano 1984, p.17.

regions or can be reconnected by memorable routes”<sup>33</sup>.

The analysis has the task to highlight how the passage from the *Forma Urbis* to *Imago Urbis* works, a transformation mechanism which, if explained, provides support to the interpretation path of the design inherent in any representative act. The analysis concerns with the mechanism of image construction determined by the relationship between retention and recollection, the perception action between stasis and movement, therefore, issues related to the selection, the limit, the interaction between the signs. The image is configured suspended between the seeing and the measuring, an area of interest that leads us to analyze structures and figurative types, the centrality of the balance of signs determined by the dialogue between the characters that determine an architectural context<sup>34</sup>.

## Strategy

### Resilient images

The proposal is developed to be submitted in Creative Europe programme, call of EU for the cultural and creative sectors. The strategy was promoted by Roberto Biselli of Teatro di Sacco and Marco Filippucci of University of Study of Perugia, and has involved Università per gli Stranieri di Perugia, SC vector studio (RO), Artmouv (FR), Gjrokastra Foundation (AL), Mainz University (DE), Artsценico (DE), Società Geografica Italiana (IT), University Carlos III (ES), in a budget of 1.412.031,75 euro.

Taking in consideration the gap between city and society and the loss of identity in urban places, the proposal wants to bring to light the storytelling inherent in the urban space, experimenting, with different forms of representation, possible strategies to set the urban landscape as an attractive and productive resource that overcomes a linguistic and social fragmentation.

The proposal targets the enhancement of urban landscape richness through representation and research in order to promote the cultural side of the city. Main reason can be found in the European Landscape Convention, where it is written that: “*Landscape contributes to the formation of local cultures and is an integral part of the cultural and natural heritage of Europe, thus contributing to the welfare and satisfaction of human beings and the consolidation of the European identity. ... the scenery is everywhere an important element of quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as in those of high quality, in areas considered to be exceptional, as in those of everyday life ... “Landscape” means a certain part of the territory, as perceived by people, whose character derives from the natural and / or human and their relationships*”.

In order to find a concrete strategy which can help us to further develop it we can read Walter Benjamin words: “*The superficial pretext-the exotic and the picturesque appeals only to the outsider. To depict a city as a native would calls for other, deeper motives. The motives of the person who journeys into the past, rather than to foreign parts*”<sup>35</sup>. The citizen, who live places and know how to read across time the urban tale – as natives can do-, will be in the uncontaminated foreigners eyes’ as instrument able to appreciate the spatial characteristics hidden otherwise to a daily viewer. Art therefore is the main tool which is capable of reconnecting the urban *textum* to the viewer because shows to the citizen/viewer “where to look”: putting at the center the man and the value of perception that founded the very last meaning of the landscape. The cities are always open works of art as full of aesthetic references. European culture expresses itself in urban landscapes, rich of layers of references. This shows the result of an ongoing dialogue with history, is an aesthetic

<sup>33</sup> K. Lynch, *L'immagine della città*, cit., p.29.

<sup>34</sup> V. Gregotti, *Il territorio dell'architettura*, Feltrinelli, Milano 2008, p.64.

<sup>35</sup> Cit. in P. Szondi, *Note*, in W. Benjamin, *Immagine di città*, Einaudi, Torino 1971, p.101.

surplus of value where to base a promotion, including the touristic one of urban environment. The city, showing the beauty of its forms, the wisdom of the signs of history, does not lose its trait of discovery: capable of empowering more and more the dynamic interactions between culture and creativity both necessary for Europe development.

Considering the city as a palimpsest of signs and texts, as the narration of the story of the transformations generated into/from the city, the problem of its image acquires a purely linguistic character, the result of the adaptation of the code that generated it. The research wants to concentrate in the language of perceptive geometry and the tension between “text city” and “town metalanguage” imposes the need to interpret the significance of urban space, with particular emphasis on the effects that inevitably the instrument produces. Main goal of the proposal is the enhancement of urban landscape requalification through arts, applied as tool that can read and let to perceive the image of the city. The valorization of european tangible and intangible cultural heritage became a strategy of urban marketing and a new professional business for cultural and creative players, capable of involving citizens in a wide range process of rediscovering our culture and our roots.

To bring out the qualities inherent in the Italian urban landscape, attractive element in the world can be selected for its fitness to resist for centuries, which certainly is based on perceptive values that could be “measured” with the aim for understanding the logic, the layering and the balance of signs .

Professors and young researcher interested in literature, theater, performing arts, graphic arts, digital techniques, architecture, geography are willing to share experience and mutual expertise, through a dialogue aimed at integrating those different points of view and at bringing out signs of city’s cultural content and ideas of creativity in the relationship between forms of built and landscape.

The study and the meeting of different arts has a predominantly interpretive and cultural significance, aimed at identifying during the analysis of the context an “invisible” infrastructure that would otherwise results implicit in the canonical representations, the same considerations will have clear project purposes: the research should lead to a critical model for reading the architectural and environmental heritage, but also able to respond to the needs of conservation and of enhancement of the urban landscape and cultural heritage.

Including the mechanisms of perception in their influence for the interpretation, enshrined in the transformative processes in place, the project becomes an explicitation of identified strategies, so addressed without the force that would be necessary in a rather direct opposition. Delineated the research for relationships as the foundation of the contextual value of the urban landscape, in accordance with the interests of the school, it will be individuated some practical cases, traceable in the enhancement of the quality of historic cities and in the redevelopment of urban sprawl, cases studies able for testing the protracted considerations.

The study wants to trace the geometric content of the urban matrices, in the belief that a large part of the “typical” character of the city lies in the formal configuration as a result of the process of perception. The interpretative analysis, made strong by the multidisciplinary research and cooperation, will be turned into case studies, aimed at redeveloping the places, enhancing the quality that the story conveys.

As landscape is based on the value of perception, our image of the city is in crisis as is connected to the lost of value and to waste of culture. This then moving to the field of vision, in which the art as well finds our principal statute. The challenge is to find, in different forms of representation, narrative tools capable to answer any needs of contemporary society to find sign of orientation and identification.

The proposal has an operational strategy in doing network within different relationships established between citizens and contemporary traveler, those who perceive the design drawn up by time and those who remain impressed with peculiarities of space. Cooperation within different European

countries becomes a tool to find a collaboration among experts that, beyond bringing their unique cultural background, find an holistic strategy to suggest a contemporary urban narrative.

Through language of the vision it aims to overcome linguistical borders and to arise identifying and identity marks according to inclusiveness and accessibility of information.

Cities tells stories. Artist are supposed to listen. Researchers inquire space and time. And their goal is translate and communicate it as new cultural Storytellings.

In five central city of Europe, two European capital as Rome and Madrid and three historical but different cities as Perugia and Gjrokastra and Bastia, the same process will be replicated: first action will be to prepare an artistic and literary city guides. Then all partners will meet together in a workshop to prepare a final event, and eventually all the studies and exhibitions will be transformed in digital data in order to create a new map and a useful App that will make people access the new information produced in immersive reality. Main goal is to create a new open space where artists and researchers could keep to upload information.

### **Case study of reconstruction of the “image” of the ancient church of Sipontum**

The dialogue between art and perception finds also other concretizations. An interesting case study is the artistic reconstruction of the early Christian basilica on the archaeological site of Siponto (Manfredonia hamlet in the province of Foggia). The unique opera, by the artist Tresoldi, is almost a hologram, an image barely perceptible ancient monument, made with a light weave of rebar. he installation represents an intersection between archeology and art, that is unprecedented and has rescued from oblivion in a forgotten site.

The old Christian basilica, based on pagan temple, is reduced in ruins, with walls that emerged from the ground, next to the Romanesque basilica of Santa Maria Maggiore of Siponto, an 12th century Romanesque church.

Thanks to a POIN financing of the Puglia Region, designed to enhance the cultural attractions of Manfredonia is expected to use some of those funds for cover with a glass tectorial the ruins of the ancient basilica.

The project is extremely complex, because it is to build a new accommodation, functional to cover the archaeological finds from the elements, next to a medieval church, which can still be up and running. In preparing the draft is the archaeological Superintendence itself, which provides, in the first instance, an iron structure and glass hemispherical shape, which, although very low and flattened on the ground, is strongly impacting on the image of the adjacent Romanesque basilica.

The problem of coverage of archaeological artefacts to preserve them is a common theme and the expression of a critical judgment, including the protection and conservation on the one hand and innovation on the other, it is often very difficult.

After a confrontation with commissions and several municipal landscaping requirements, the first project had passed the scrutiny of all approvals between 2014 and 2015, completely coming back with a substantial variation: the project of a large glass cover and low on the ground leaves the room for a work of art, which does not rebuild philological monument, but it brings back to memory the image. The construction work was entrusted to the artist Edoado Tresoldi, who is just twenty-eight's year old: he had already made large sculptures with iron frame ( “Thoughts-thinkings” - 2014, a huge “contemplative” admiring the sea of Sapri and Cathedral suspended at the rock-pop Secret Garden Party festival in 2015), but it certainly can not be said to be an art dean of international fame. Considering that the clients and the public, being the Regional Secretariat of the Ministry of Heritage and Culture Puglia and the Archaeological Superintendence of Puglia, the idea might appear if not reckless, at least courageous. The end result has agreed with that insight. The art work is a cross between reconstruction and temporary installation, it looks like a very light embroidery

in the air, even if it consists of 4500 square meters of galvanized welded mesh, which is about 14 meters long and weighing 7 tons.

In just five months, with his group of young creative people, the work: was finished “I began to imagine a kind of return of this great building as if it were part of the historical memory local. I envisioned being able to draw in the air, while maintaining direct relations with the territory “, explains the author.

The art installation, which has been defined by street art or land art, before also been criticized by the local press and then won the 2017 prize for Frankovich popular acclaim of voting originated from social networks, compared to other museums and selected sites throughout Italy. The work has become an urban landmark which attracted tourists, scholars and curious, with the evocative power of art, but most of all drew the citizens of Manfredonia, who recognized (and rediscovered) that place as their own, transforming the archeological park Siponto, abandoned forever, in a large public space. The reinvented place derives by a dialogue inside a contemporary art and archeology, in a new vision of landscape, which, to be vital and lived, must necessarily be considered in its time complexity, including testimonies of the past and current events of the present. On the other hand, the landscape is nothing more than the recognition of a place by the subjects, that they feel part of the experience when it revived memories and imagination.



*Fig-1 Reconstruction of the “image” of the ancient church of Sipontum*

## **The roman road in genoa. signs of the past into the changing**

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### **Abstract**

Even today, even with a superficial reading or a cartographic occasional use, you can recognize in the city of Genoa some parts of a process that presents significant discontinuities, and that often contrasts with the perception of the surroundings: it is the ancient Roman road which runs from the center to the extreme urban Levante, from Porta Soprana to the town of Nervi.

In this long part of the road, mostly intensively built, residential Building alternate with representative elements and structures with specialized destinations, medieval, modern and contemporary, easily identifiable already at visual perception level.

The base of the road is cut in several places by the road system with high and speed traffic, and in this way it is hidden and subject to strong contamination; nevertheless, the identity of this part of the Genoa area remains visible, so as to become an element of instinctive curiosity and interest by the observer, not even aware of local history and / or architectural history.

Here, we want to propose a synthesis of research carried out on Levante ancient Roman street in Genoa, through the reading of the main features of the buildings that now we face today is that they contribute very largely to the territorial identity formation.

### **Introduction**

The Ancient Roman street in Genoa, winding from the center to the extreme East of the city, appears so clare morphologically differentiated that it may require at least the division into three large sections, corresponding to homogeneous areas, different from each other; similarly, even the buildings that pertain to the route show, among them, deep differences, depending on the section.

Normally this is due, in the first place, just to the territorial situation, which varies and which involves, therefore, an adjustment of settlement structures; however, this is not the only reason for the observed series, since it is clear that equally decisive is the greater or lesser centrality -Respect to urban-core, with the consequent design and compositional choices, related to the use and the socio-economic situation, as well as major or minor changes that occurred in adherence to housing models (or productive, or even of social life).

For these considerations, to reach a clear reading of the buildings and of the reasons that led to their current configuration, it is necessary a double subdivision: on one hand that -already seen-refers to the morphological situation of the route and, secondly, on the other referring specifically to the building structures in their intended use; for each stroke, so, you will have to examine the characters of current residential buildings (the “dwelling houses”) and complex residential buildings (especially the “ville”), limiting the field of investigation to these categories only because quantitatively and qualitatively representative and still substantially legible, even in a profoundly changed situations with respect to the time of implant.

It should be first noted that it is impossible to separate the study of architecture from territorial considerations, since the characters of the buildings are closely related to the place where they are inserted; this is, today, less clearly perceptible because construction techniques and “how” of living have become common in many countries, but is still clearly legible in historical architecture.

This also means that the main reason for the differentiation of characters that is located in Via Antica Romana buildings corresponds, roughly, to the differentiation of morphological appearance which is located along the path; you will have, “primarily”, a distinction based on relevant current buildings of the city center, from Porta Soprana to San Martino, then a second tranche characterized by urban ones, but already in sparsely settled area and finally those places along the coast between Quinto, Nervi until Capolungo, which can be read as a suburban even now, in a once poorly urbanized zone.

This is not enough to differentiate the residential buildings in the path; as a second consideration, it is observed that there are some current construction buildings and other more intentional, somehow enriched by further design and compositional values.

On one hand, we can define the first as residential base- the house, the apartment that we are all accustomed to use- on the other side the second as specialist buildings, for not having, as the main value, the answer to the question of living, but rather that the representativeness of the client and consequently being in today rarely used as a residence; in brief: on one side homes, on the other villas and palaces. These two worlds, apparently different of links, are derived, in part, by the same historical-constructive experiences and correspond, however, to the same use, that of residentiality: we therefore will find similar characters, exchanges, analogies, for example dimensional or structural, but also strong differences, due mainly from being the home for an answer, the easiest, at the question of living, while the villa is an answer much more linked to the question of the “show”, to celebrate a family. Thus, specialized buildings have a range of elegant decorations, attention to the architectural details, to the richness and prestigious demonstration in the choice of materials, which is also clearly visible on the outside. For this reasoning must follow two parallel trends, with common contact point and many differences: the tendency of the house and that the house (or palace).



*Fig. 1 evidence of section of the Via Antica Romana in Genoa, present between the center and Capolungo; it should be noted, in particular, the comparison between the current situation of intense overall urbanization and differentiation still present in the XIX century, this identifies three areas, respectively intense, medium and low edification*



## Methodology

As for the current home is fundamental one basic observation frequently forgotten: talking about historical building there is no mention of the original house built in the Middle Ages or the Renaissance, if not before, but we always talk , and in every case, of a contemporary building; no matter if the original plan is the fourteenth century, rather than four or sixteenth, what matters is what you see now, one of the twenty-first century with all the changes and adaptation interventions, even small, succeeded in time. The characters that can be read and identify the basic construction, certainly are responsive to the implantation period, but in reality the examination takes place on objects now linked to a type of contemporary experience; the reconstructed scheme is, therefore, deductive-theoretical, whereby the reality can deviate from it.

In general, the construction phase of current buildings that are on the way Antica Romana, brings them to be representative of a type common to all Italy -if albeit with different meanings depending on the geographical context, and that is that of “case a schiera”.

The *casa a schiera* is a monofamiliar house in use, arranged normally on three floors above ground, with a target fruition of the ground floor of craft or commercial use, with the residential upper floors and that takes several peculiar characteristics depending on the construction site. Generally, as happens for example in Rome and Florence, the *casa a schiera* has a scheme with two deep cells, the first of which placed in adherence to the path, with a free area on the back with a non-fixed size, dependent on the border in depth, while access is always on the course and overlooking the main road is placed.

The first area is designed to accommodate the staircase, but especially the area designed to accommodate commercial activities that take place within their means sharing to urban life, if we are on a path frequented; vice versa, if the path is marginal, in place of the commercial activity you will have a warehouse, without any conceptual difference: the first room, however, is not intended to house. The room at the back is immediately linked to the type of use of the front and, in the most advanced cases, there is a separation between what can be considered a distribution path also linked to the upper floors - scale system, crossing, area of relevance -, with a consequent separation of the two floors above, which can then also be sold or rented to people who do not belong to the core that inhabits the upper floors. The pictured one is the applicant’s system, encoded at various times in Italy and also in Northern Europe, and not only locale one; but in Genoa what happens? What is the Genoese version?

Because of the morphology of the territory of Genoa, here the diagram shown above is almost never traceable, for an obvious reason: such a building requires a very wide flat land strip, rarely existing in the territory in question.

So the “schiera” is transformed, in Genoa, according to a most basic scheme: the house is always in adherence to the path, with the access on the road, but consists of a single room with a form as elongated as possible, and any kind of area free behind. It’s a pattern of “minimum” living, of people who live in contracts spaces; the chance to grow with lengthen in depth it allows, at least in some cases, a partition wall and a type of retro use as if it were a second room, which is, however, not lit or it is with a facing on a very narrow space that can not even be defined area of relevance, but free area of respect between borders.

The two described schemes base their operation on very different principles: the first on a horizontal development, the second vertically, without extension in depth, but only with height growth. Such a system occurs around the center of Genoa (in the historical center is very evident, there being a dense net, “a pettine”, from the tight rhythmic partition, with opposing housing on two sides), but it is less evident in the stretch beyond the walls, both because the path in some sections has a flat spatial situation (for example, in the part that is located towards the torrent Bisagno, where still

remain testimonies in this sense, while the center has a morphological trend very contract), both for the different economic value of soil that leads to buildings less suitable in commerce and more to agricultural activities, that gradually moves away from the core of urbanization.

What are the points where the described construction is still traceable? A piece of *urban net* still partly intact, which now enables an almost complete picture of the distribution system and plant structural character, is, for the center, the one of Via San Vincenzo street; located between Via XX Settembre and the Brignole station, discards the main street today and fits into a tortuous and narrow. Via San Vincenzo is a stretch of Via Antica Romana now indistinguishable as regards the overall character of the road, because those who pass here hardly perceive the original structuring, for the transformations, but if you look closely the wall construction, which now in this road appears to be continuous, you realize that there are many elements still legible in the initial form of a single building, detached, and then with the basic dimension equal to the size of a single room, the elongated depth, a possible small area of relevance permitted from the situation, namely that minimum vacuum that allows to also have the aero lighting in the rear part.

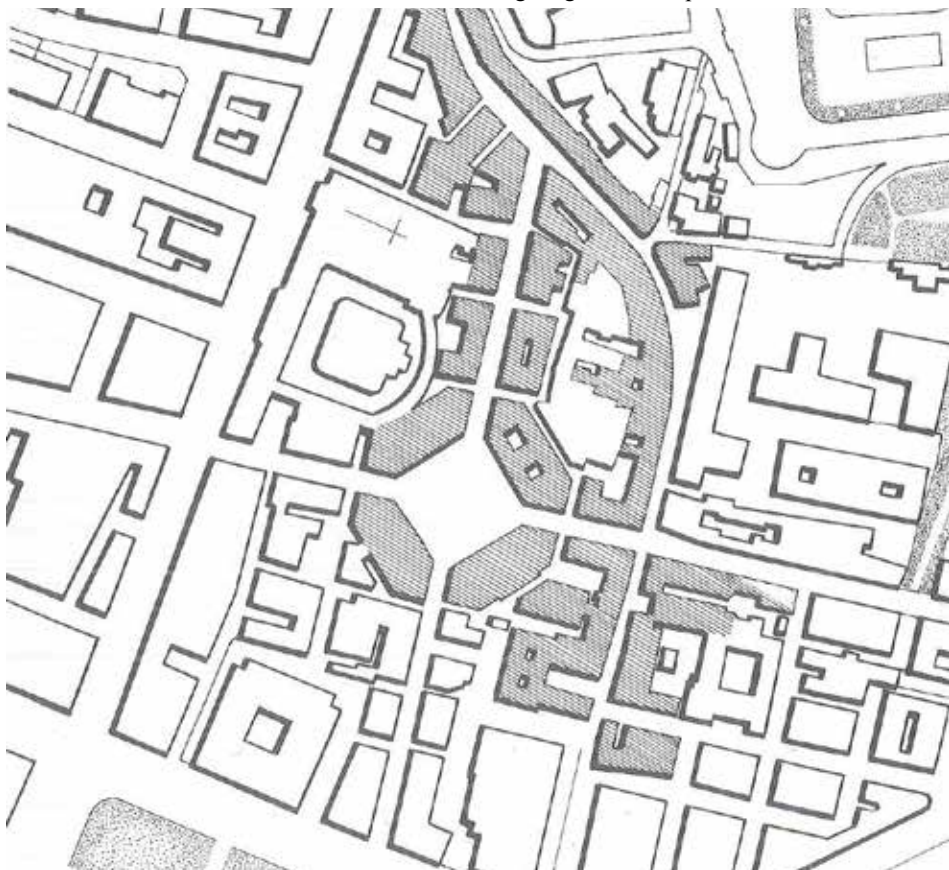


Fig. 2 planimetric schematization of the area close to Colombo Square; note the different structuring of the urban net and the relative distances: regular and large in the nineteenth century, tortuous and narrow in the previous one, of Roman period (the actual Via San Vincenzo).

The initial statement applies here in an absolute way: they are houses of the twenty-first century, they have neither the intended use, single family, nor the type of the original structure, but these two facts are still legible; but inside there is now a system to apartments: the house that, for example, can be seen as formed by four front windows, it is actually the sum of two elements clearly visible, as well as still clearly visible is the fact of being in the presence of a single room, although elongated or doubled in a typical local feature. This figure is easy to be read for the presence, on the facade, of the scale volume, which normally is distinguished by shape and by the absence of window external fixture -the persiana- or because still being differently decoratively treated and its presence -even though not frequently- is a clear indication of the original configuration permanence.

Recognizing a probable original layout different from the current one is an asset for critical reading of the buildings, because it shows how in Genoa and in the presence of a situation in which distribution and use of the living area are to live together, contrary to what happens in other areas, in which the stair is going to be placed on the back, so as to have the windows on the secondary front, it does not matter if at mid-height - in the case of double *rampa*- or at a height coinciding with that of the rooms so you can save overlooking the street from the residence.

Still, if you go along Via San Vincenzo and you look up, you often see a seemingly random type of prospect layout; this is due to the fact that you read as unitary palaces those derived by joining and by putting into communication of two elements in one-family origin, which often retain the constraint of having the scale area in adherence to the path with the consequence of having similar facades to those who, as a rule, are secondary prospects for compositional approach.

Of course, compared to the original situation, as we are in the center, there is a huge growth in height, so instead of the typical two-storey detached house -the living and sleeping area overlapping the not residential area - in via San Vincenzo you get four, five, sometimes six floors. The reason is quite intuitive: the growth requirements that an urban commercial vocation and with high density area involves finding solution, in this case, only with a possible growth in height.

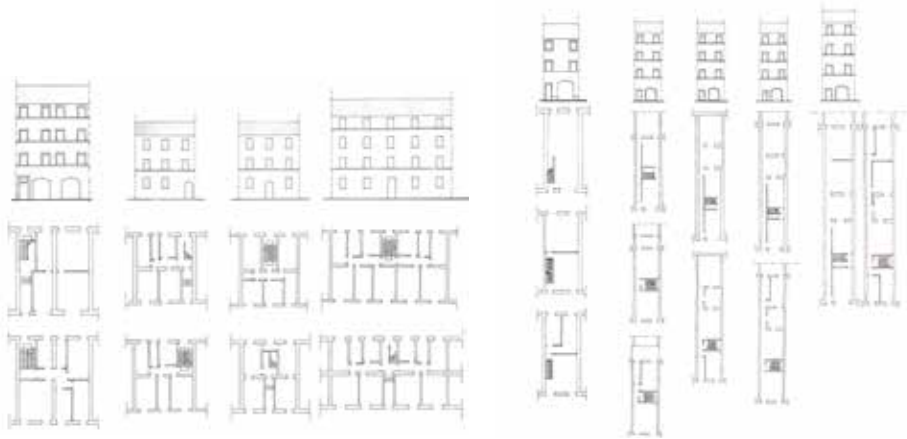


Fig. 3-4 synoptic table of comparison between schemes of basic family housing buildings- (*schiera element*) and basic family housing buildings with apartments, derived from joining and composing of two or more single-family buildings.



*Fig. 5 via San Vincenzo. Prospects of apartment buildings; it should be noted, in particular, the unusual presence of the distribution system in the facade, easily recognizable by the “poor” treatment of the openings, without external fixtures.*

Crossed via San Vincenzo, after the Brignole station, you come to the Bisagno and you find another piece of urban net almost entirely readable, almost unchanged: Borgo Incrociati.

Here the original urbanization, although much altered, is still intact, as regards with the readability of the individual elements, much more than in Via San Vincenzo, this is due to the fact that the latter was transformed in the eighteenth and nineteenth centuries, to get of building walls as homogeneous as possible, which would respond to the canons of the period. The “freezing” of the Borgo *facies* makes possible to read an earlier stage than that one of Via San Vincenzo: If over there high five apartment buildings or six floors are frequent, with facades often entirely nineteenth century, so with a form very different from the one original, for the Borgo you can perceive at least some individual elements with even limited height, perhaps no longer functioning as one family homes, but with the same features of marked kind of use. We have still the same consolidations and growth in height, but the situation leads to evidently suburban images than those of via san Vincenzo, in addition, Borgo Incrociati remained more isolated from the rest of the new buildings and the city and maintains a strong unitary character.

Passing the Bisagno torrent, another part of compact urban net, perhaps even more than Borgo Incrociati, is the village of Sant’Agata, composed of the church, which is the main focus of this tiny settlement, with the adjoining convent, and a reduced number of smaller buildings located all around to almost the border, currently in a situation of severe deprivation: Sant’Agata remained submerged by new building palaces, being able neither to adapt to economic and social change as via San Vincenzo, or remain marginal as Borgo Incrociati. Suffocating, now it has little chance of recovery: this is perhaps due to the visual domain and dimensional forms of the church and convent, a type of specialized housing for much higher amounts of surface and intentionality, so that the surrounding buildings remained underused, with a consequent progressive degradation.

Those described are the urban net pieces of Ancient Roman Street which are still intact in the city center; the long journey that, as for Genova, comes up to Nervi and that was dismembered, for the purpose of the study, in three homogeneous sections for morphological characters, as soon as you leave the city and enter in the Levant, to St. Martin, develops in the villages Sturla, Quarto. Then you will truly understand what was the plant building type, the image of the streets, as in areas of the stretch of Roman road that are still there, cut it out over Corso Europa and isolated from the rest of the center, you have a type of “houses” -so they seem- with two floors, with the trade or craft type ground floor or even already residential, still tied to the old path structuring.

This “freezing” phenomenon to an archaic phase is also evident from the decorative apparatus point of view: in via san Vincenzo the decoration is XVII-XVIII century, with an image revisited by academic canons, with both plastic decoration that pictorial, while in the streets present in Levante

there is a pictorial decoration that only sometimes resumes academic models, but it is very often extremely simple, with a decorative color score that aims only to externally separate the functions that take place within, tending to propose a certain coloring to the base, another for the foreground and yet another kind to the upper floor, or two color separations between the base and the elevation. It is a kind of decoration closer to a modest way of life, without excessive pursuit of Representative identity; this does not mean that there are elements of value even in this building, but what happens sporadically, with references to everyday use, while in the buildings of the city center are systematic facts related to the imitation of models. It is now necessary to examine what remains of this experience, when you start in treating the subject of the villa and palace as specialist residence, when, therefore, you change user level and attention to the architectural composition.

The first obvious thing to note is that while the townhouse is an item that has meaning when seen in a series, as implied by the name itself, the villa and the palace are considered autonomous entities, which find their *raison d'être* in their being isolated and they are rendered maximally representative from the relationship with the green areas, it is a garden or surrounding environment.

In addition, if the current housing can continue a development consistent with the implant phase, as born to be home and remains so, as altered and changed, the representative residence hardly remains unchanged over time; In fact, at first place for one family with an economic value of services of a given level, today, due to the changing social situation, it can not maintain its intended use, that becomes public or residential type for many families. In the latter case, the inclusion of apartments or of a new type of building, pushes to denature the same composition of the organism, as it is clear, for example, from the inevitable changes, even substantial, of the distribution system; in addition, where in the basic buildings it was possible to merge the rooms at different levels so as to determine more substantially independent units -when there was the possibility -, on the contrary in a villa apparatus the rooms with their different heights, as well as their articulation or the representativeness of stairwells, give rise to non equivalent organisms.

Dedicating a villa or a house for several families can distort the origin, while sharing a house unlike as it was initially it is an operation more fair to existing structures; this problem, which is real and comes up every time you want to reuse a structure that no longer belongs to socioeconomic contemporary world, which are given partial solutions, for example by transforming the auditorium churches and villas in libraries, is clearly visible by the observation of the villas on the *via Antica Romana*.

So, even a cursory examination, can realizes how, starting from the area of the center and proceeding up to Capolungo, the landscape changes and you are at Levante in an alternation of built-up parts and gardens, which intensify as they move away from the city to get to Nervi, whose last part looks like a continuous garden with a number of villas.

If San Martino is still a testament to how many of the specialist facilities are not adequately used today - just remember, for example, not yet reused villa Dongo-, the situation in the Riviera is much less traumatic: many villas, such as the one in area of Quartara park, have been restored and put to any apartments, reworked in reasonable way and the maintenance even in part of the original function (representation residence) keeps alive the structures. As for the villa characters that can be distinguished, you can trace -as seen for current residential building- an international model, and not just the Genoese; it is a late imported model, which is adopted in the Genoa area, and that grafts and sometimes is in opposition to the sense of indigenous villa that derives from the transformation and enrichment of those which can be considered farmhouses, although high-level, not farmers, but suburban having in time formal characters richer and representative.

On what is based the original composition of the Genoese villa in the system now?

On the particular morphology of the terrain, as for the current residential building; the little flat land, with very strong difference of levels, the villa scheme matches, trying to make the most of nature. It appears so one roughly scheme to “L”, in which there is one part of the distribution zone, which flows in a lateral angular loggia highly representative, which uses just the kind of terracing peculiar to the territory of belonging; it is essentially a surface type operation, which tends to have the house as much as possible in plan, lengthening and respecting the warping of terracing, with an extremely fair structuring the morphological conformation of the terrain.

Further confirmation of the gradual emergence of the Genoese villa residence is given by having very often not symmetrical elevations: you are not in front of a building designed, coded and laid out in order to meet standards and reference models, but to succeed training phases that define “little at a time” the final trim. What happens, however, then?

From the sixteenth century Galeazzo Alessi arrived in Genoa, who stop there for several years: the Alessi has a cultural formation of Roman type, which has little to do with the building culture of the Ligurian region, but it is a great architect and imports its models and beliefs, turning what was the pattern “L” typical for the area. This is adapted to the shape of the terrain, in a square type schema absolutely blocked by four continuous walls, with the loggia predominantly placed at the center and with the prospectus, however, arranged according to an axis of symmetry with a central void, scheme that has nothing to do with the former world; which is why the villas that are encountered with a prospectus so strictly symmetrical, a loggia placed at the center, the walls “closed” laterally, can be defined Alessian type.

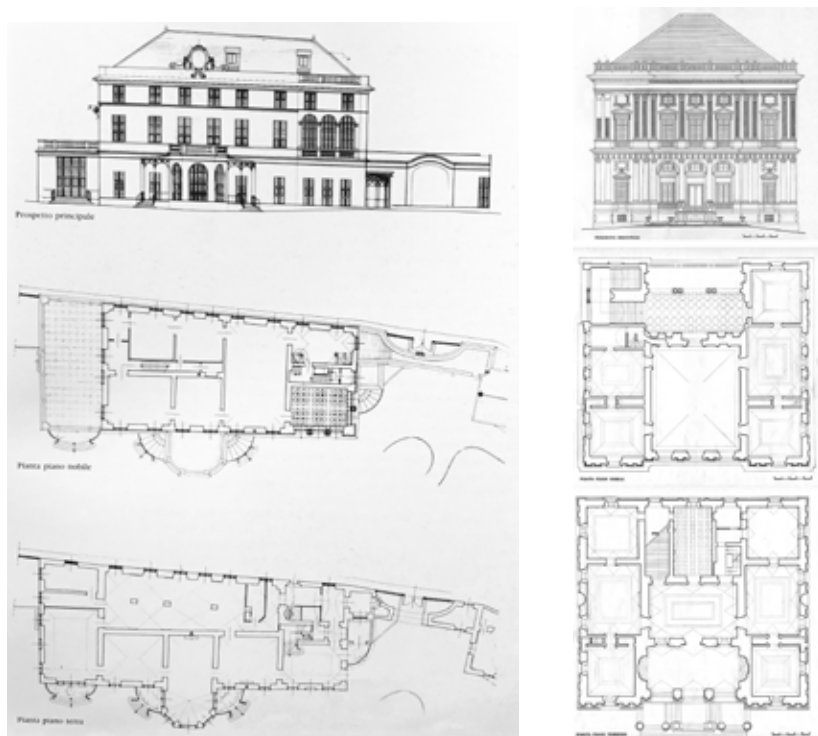


Fig. 6 the Genoese villa residence: pre-Alessian and Alessian type

That used to be a development on the surface tends to become a development in height; where it had two floors, there are at least three levels, with a succession of noble and mezzanine floors and a new system of fittings, of another matrix with respect to the local time.

Even in the case of the villas, then, you better meet the native residential type as regards the archaic situation, with pre-Alessian entered into history and local tradition, buildings, and then move on, however, to a discussion of models and culture in some overlapping manner as the local ones, from the Renaissance period.

One final note should be made about the relationship between buildings and around, because who looks at and studies the villas can not fail to do so in relation to their garden: the garden -or the area to cultivate, in some cases - is part of the design of the building, especially in the diagram in which the villa acquires a very strong representative value: we not limit ourselves to prepare the architectural body image, but it is placed in relation to the type of artificial environment where it is decided to build, imitative or opposed to the natural environment.

Again, we come gradually to the design achievement of the open space, which always accompanies and at the representativeness: to celebrate the role and power of a family, in fact, you can not limit the project to the architectural construction, but you must enter it in a suitable landscape.

## Conclusions

As already mentioned above, it is not possible, along the route under consideration, find the specific Alessian villa examples that are not those of Albaro, area close to Via Romana; on the contrary, in the stretch of the Roman road of Levante, the villas are always transformations of earlier systems that were constructed without compositional references derived from models: of course, over time the structures are changed and adapted, so that some buildings mirror the Alessian type, so that, with the current language, they could be defined restructuring, transformation of farm houses of families who had on-site soils and agricultural lands.

Agricultural Houses thus transformed into villas, where you will always find the changes to Alessi schemes; all the typical elements of Alessian buildings can be, of course, read, but can hardly have a canonical sense: it can find, for example, the salon offset, the shifted loggia, the salon on the ground floor rather than on the main floor or a whole series of design variants due to the fact that we wanted to adapt the building to a certain way of designing that was alien to him, taking into account the existing structures: large spaces organized to meet needs of agricultural type, with cellars, grain or olives deposits, shelters for tools, which are adapted and transformed, to get a villa responsive as possible to Alessiani canons.

This adapt to new cultural models is a general requirement and is also found in the building of the base, where normally the patterns can not be achieved in *toto*, but where on the contrary, there are often trade-offs to put in the pre-existing system with the reference models of ages that followed one another: of course, every time you need an adjustment of an organism is not prepared to receive it, you have consequential inconsistencies, such as, for example, the aforementioned staircase in front of the row of downtown buildings, transformed into buildings to apartments.

A final consideration concerns the general and continuous search for consistency that is also found in Genoa in the nineteenth century and which seeks to isolate all the statements, making them adhering to the basic principles of the period, or symmetry, the hierarchy of the vertical stratification and rhythmicity of the wall.

Often, if you superficially look a facade decoration, this seems symmetrical, with decorations and relations between the constant parts; then when you go to draw it carefully, you find that the distances are different, as are the heights, so an “appearance” is opposed to a “reality” that itself

bears the traces of the past.

Of course what it has been said applies to the prospectus, as for the plan: if you go to read the status of critically done through the survey, it will be possible to reconstruct the phases of training and separate the plant moment from the the following ones: this finding is the most interesting element to understand how, over time, the building is “settle” and you can no longer note the overlap of interventions: there is a building that is made up of many parts now coexisting and cooperating, however contemporary.

Of course for the basic building there is a greater difficulty in identifying overlaps, for as few original elements remained and suffered great transformations, while in the villa buildings this appears in a more evident way; ultimately, having addressed the critical reading of the buildings present on the Via Antica Romana at Levante through the representation, has allowed the understanding of the original character and, consequently, the evaluation of the persistence of a few constants, the foundation for an eventual new evaluation, in accordance with peculiarities of the whole and of the individual architectural organisms.

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# RESILI(G)ENT CITIES<sup>1</sup>

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## Abstract

Over the last thirty years, our most important trading spaces and coexistence, cities, were scene of radical changes, both in its definition (urban and territorial, real and virtual, formal and informational), both in their configuration (multiple and multiplied, and variable differential, dense and irregular).

Dynamics that expresses a new intelligent dimension of cities (interactive and informational), linked to the increase and net-development of the new technologies and to a renewed environmental awareness, called to guide qualitatively the new urban developments in new advanced formulations. In a few years, the economic/environmental global crisis, combined, paradoxically, with the constant computer (and digital) advances have favoured the development of new socio-cultural (pro)positive values in the field of the urban design, the ecological thinking and the territorial planning, careful to complex processes - and systemic - global and local.

Contemporary complexity requires new tools: old approaches based on the “defensive control” and corrective contingency responses, are replaced by “synergy policies” addressed through preventive proactive, adaptable and reversible actions, which combine ancient “scenarios of emergency” (risk areas) with new “emergency scenarios” (areas of opportunity).

The *Resili(g)ence*<sup>2</sup> approach proposes to combine “Intelligent Cities” (information, knowledge, projection and adaptation) and “Resilient City” (resistance and recycling, reaction and recovery, renovation and adaptation) in a new *e-sensory* condition, *sensorized* and *sensitive* at time.

## Introduction

The approach to the development of a new Advanced Urbanism paradigm comes from the innovatory processing combination –in the last two decades– between the terms INFORMATION and INTERACTION, understood in all its dimensions, spatial environmental, social, technological and cultural.

The notion of information appears, in this advanced approach, directly related with the capacity to manage complex programs and simultaneous solicitations, tendential parameters and environmental indicators, cultural tendencies and social dynamics, and, evidently, with the digital and computational increasing capacity to process, measure and optimise data in new anti-typological and open systemic approaches (integral and integrative) associated to a new *Informational Urbanism*.

A new urbanism linked with a new urban intelligence understood as a new relational (and informational) capacity (reactive, responsive and strategic) able to process together urban *data* and *visions* in a new integrative and qualitative way: not only a *multi-tool-urbanism* linked with the new technologies (Smart) but an *Empathic Urbanism* associate to new analytic and synthetic (in contemporary) and multi-scalar researches in the fields of the urban prospection, the innovative

<sup>1</sup>Introduction, Methodology, Resilient cities, Resili(g)ence and Conclusion by M. Gausa, BigData and Resilient Cities by N.Canessa

<sup>2</sup>RESILI (G) ENCE is a combined word by Manuel Gausa, between resilience and intelligence

expression (and representation), the environmental scope, the social integration and the citizens convivial relationships and bottom-up and networked processes; and connected, in particular, with the capacity to launch new strategic and integrative gazes (and methodologies) open to work with complex, irregular and dynamic territories.

## Methodology

In this sense, the innovative input of this new methodological urban approach can be based in 3 lines of action, diverse but interconnected in-between them, that are opening the door not only to different changes of paradigms but also to new frameworks, instrumental tools applications and experimental outputs:

### A– Digital (& data-processing) innovation (PROCESSES & RECORDS)

Changes of paradigms: from fixed representations to dynamic and evolutionary maps

Frameworks: digital technologies and dynamic open-processes

Tools: digital software – multilayer & informational processes

Outputs > real-time open-processes > data-visualisation, data-orientation, data-applications

### B– Environmental (& eco-systemic) innovation (NETWORKS & SYSTEMS)

Changes of paradigms: from land-uses planning to land-networked strategies

Frameworks: complex structures and integrative networked-systems

Tools: multilayer informational programs & matrixes – relational & responsive territorial structures

Outputs > strategic scenarios > operational systems, strategic concepts

### C– Social (& bottom-up creating) innovation (ACTIONS, OPERATIONS, IMAGINARIES)

Changes of paradigms: from participation to co-production

Frameworks: social sharing dynamics and new collective behaviours

Tools: relational structures – interactive experiences > active public & spatial devices and/or connected use(r)s

Outputs > collective actions > interactive interfaces, relational programs & imaginaries

This is the conceptual approach of the Genova unit partnership, in relation with the topic Advanced Urbanism. And –in its declination with the topic Resilience– this is the challenge: the capacity to combine “Intelligent Cities” (information, knowledge, projection and adaptability) and “Resilient Cities” (resistance and recycling, reaction and recovery, renovation and adaptation) in a new *Resili(g)ent* condition, *sensible*, *sensorized* and *sensitive* at time.

During the **Med.Net 03 Forum**<sup>3</sup>, ADD (Doctorate Program in Architecture and Design of UNIGE-Genova) has organized two days of scientific and creative meeting and exchange dedicated to promote a strategic vision about the theme of “resilience” and its innovative approach: International **Symposium MED.NET. KAAU**<sup>4</sup> (Advanced Urban Strategies for Resilient Territories) and a SCIENTIFIC MEETING ADD-RESILI(G)ENCE (Global Med, Resili(G)ent Nets: Research Tables).

## Resilient Cities

Over the last thirty years, our most important trading spaces and coexistence, cities, were scene of radical changes, both in its definition (urban and territorial, real and virtual, formal and

<sup>3</sup>The Med.Net 03 Resili(g)ence International Forum, organized by ADD, Architecture and Design Doctorate, UNIGE, in 2016 was contextualized within an investigative framework –MED.NET– on research topics and meetings regarding the Mediterranean multi-city and its bond with the new relations “city-territory-landscape-architecture” declined by advanced standpoints (see Med.Net 01.it, Med.Cities e Med.Net 02.Eu, 6T’s. Intelligent Coast/s).

<sup>4</sup>The KAAU project, a relational platform between universities (research units) and entrepreneurial industry (dynamic companies), derived from *Erasmus Knowledge Alliances*, which aims to encourage exchange, training and dissemination spaces related with advanced knowledge and innovation in the fields of urban planning, sustainable development and new technologies.

informational), both in their configuration (multiple and multiplied, and variable differential, dense and irregular). The ancient disciplinary paradigms, governed by the old tools of zoning and formal planning, have shown their limits against the constant progress unpredictable, complex and changing. The new and complex urban geographies made of dynamic and networked exchanges, are re-evaluating the old formal definitions, physical and unambiguous, of the city concept, interpreted as a new relational system, multivalent and ambivalent, where the old urban-territorial connotations are coexisting with the new manifestations of a new type of *operating topologies*, intended to exchange, continuously and simultaneously, simultaneous data and information, localized and de-localized at the same time. These dynamic express a new intelligent dimension of cities (interactive and informational), linked to the increase and net-development of the new technologies and to a renewed environmental awareness, called to guide qualitatively the new urban developments in new advanced formulations (at the same time innovative and critical, proactive and responsible) able to combine, - especially in the European context -, new technological scenarios and new environmental sensitivities.

In a few years, the economic/environmental global crisis, combined, paradoxically, with the constant computer (and digital) advances have favored, in this sense, the development of new socio-cultural (pro)positive values in the field of the urban design, the ecological thinking and the territorial planning, careful to complex processes - and systemic - global and local.

The general growth of metropolitan areas has produced, in fact, an increase in CO2 emissions, resulting collateral effects particularly negative on the climate and the environment, a reality strongly marked by the continuing increase in natural disasters.

Environmental crises associated with the exponential consumption of resources (land use, food scarcity, migration and immigration, population growth, etc.), transform today's cities and urban areas in increasingly fragile and vulnerable eco-systems.

Sustainable practices, linked to the reinforcement of the resilient capacity of our environments, are essential.

New urban and territorial systems, indeed, are animate to propose holistic solutions to multi-level problems related to mobility, population, energy, environment, health, food, water, security, housing, health, but also to threat and risk situations and to the weaknesses conditions of territories. Today we need conscious solutions, open to new technologies and to more accessible, strategic and multi-scalar approaches, which are also dynamic and transversal, flexible, evolutionary, versatile and relational. New approaches for the *Resili(g)ence*, referred to the 6 topics, which create possible transversal themes:

WATER (alluvions, storms, floods but also management and rational use of water);

EARTH (earthquakes, landslides, slips);

FIRE (fires and volcanism but also greenhouse effect, global warming, alternative energies); AIR (pollution and emissions, but also environmental and sensorial comfort);

LAND USE & ECO-SYSTEMS (anthropic land occupation, food and agriculture, transport and mobility, attention to materials and construction systems);

COMMUNITIES (disintegration/social integration, but also identity/community participation).

Contemporary complexity requires new tools: old approaches based on the "defensive control" and corrective contingency responses, are replaced by "synergy policies" addressed through preventive proactive, adaptable and reversible actions, which combine ancient "scenarios of emergency" (risk areas) with new "emergency scenarios" (areas of opportunity). New *resili(g)ent* responses must work in a hybrid field: on one hand, prevention and mitigation of conflicts and risks through the interconnection and registry of systematized data (simulated or real-time), on other hand programming of planning interventions, divided into urban systems and global territories.

## **Resili(g)ence**

The term Resili(g)ence aims to combine a new “intelligent city” (information, knowledge, projection and adaptation) with a “resilient city” (resistance and recycling, reaction and recovery, renovation and adaptation) in a new responsive and sensory condition, sensorized and sensitive at the same time.

This combination “information (trend) + integration (intentional)” announces new dynamics of urban planning aimed at advanced interdisciplinary research, oriented to a strategic integration of operating systems (both tangible and intangible, real and virtual) and to a holistic view of its multiple dimensions (patrimonial, sensorial, environmental, cultural and social) in new scenarios not only associated with pure informational management (Smart Cities), but also to its network systematic and to its strategic-planning projection (Intelligent Cities / Advanced Urbanism).

## **Intelligent cities**

Intelligent (Smart) Cities are understood, in the general assumptions (Wikipedia, etc.) as urban and informational systems destined to integrate multiple levels of information and communication technologies (ICT, IOT, etc.) in more secure, qualitative (and innovative) spaces of life and exchange, able to manage new city’s assets.

Information and Communication Technologies (ICT) – but also new reactive and creative urban strategies– used to reinforce the level of quality, performativity and interactivity of urban services, structures and spaces (U-S.S.S), reducing costs and resource consumptions and improving positive interactions between citizens, habitats and local governances.

Traffic management, energy, health care, water, waste management, innovative urban agriculture and planning design, are common sectors implicated in a new intelligence of cities that “resides in the increasing and effective combination of digital telecommunication networks (nerves), ubiquitously “embedded intelligence” as an “operational processing capacity” (brains), sensors and tags systematisation (sensory organs), software design and creative applications (knowledge and cognitive competence) and social, cultural and spatial innovative responsive capacities (Mitchell,W., 2007)”.

## **Resilient cities**

Resilient Cities are understood as living urban contexts with capacities to absorb (and redirect) shocks and stresses, weaknesses and threats, in their social, economic, and technical structures (and infrastructures), being able to maintain essentially their own functional, environmental and sociocultural conditions, values, and identities.

To increase their capacities for resilience, the cities will need to adopt new urban planning and building design strategies that allow them to increase their abilities to better respond and adapt themselves to the economic, social, and physical stresses and to face the complex challenges of increasing natural risks, energy scarcities, climate change, food needs, land use occupation, and population dynamic fluctuations.

(Resilientcity.org)

## **Intelligence: INT. key-factors**

Enlarging these definitions we can understand the term *Intelligence* from the latin term *Intelligentia* – from *Inteligere*, *Intus* (between) and *Legere* (to try, to chose, to select) as the capacity “to choose between”. *Intelligence* has been defined in many different ways including as one’s capacity for logic, understanding, self-awareness, learning, emotional knowledge, planning creativity and problem solving, etc.

*Intelligence* can be more generally described as the ability to process and analyse information, and retain/synthesize it as knowledge to be applied towards adaptive behaviours within an environment or context.

We can talk, in this sense, of 5 Key Parameters (INT) associated to the term Intelligence.

INT.1– Processing capacity (analytical and conceptual)

INT.2– Adaptive capacity (evolutionary, flexible, reversible)

INT.3– Transversal capacity (connective and strategic)

INT.4– Operational capacity (reactive, dispositive)

INT.5– Relational capacity (emotional, empathic and interactive)

+

> INT.6– Projective capacity (setting up capability > propositional, proactive, creative, innovative)

### **Resilience: RS. key factors**

The term *Resilience* from Latin *Resiliens* – present participle of *Resilire* “to rebound, recoil,” from re “back” + *salire* “to jump, leap” – calls to “the ability [of a system] to cope with change”:

– the power or ability to return to the original form, position, etc., after being bent, compressed, or stretched; elasticity (TOPOLOGY)

– the ability to recover readily from illness, depression, adversity, or the like; buoyancy.

We can talk, in this sense, of 5 Key Parameters (RS) associated to the term Resilience.

RS.1– Anticipation

RS.2– Adaptation

RS.3– Integration

RS.4– Resistance (Endurance)

RS.5– Recuperation (Resetting)

+

> RS.6– Future (Self)Projection/Affirmation > IT.6

### **Resilience + Intelligence (Resilience):**

Is significant the evidence that the terms resilience and intelligence can be explicitly combined - in every one of his capacities - to multiply its potentials of answer – and synergy – to the environment... and with the environment.

We can talk of:

RS.1– Anticipation, in relation to INT.1: processing capacity (analytical and conceptual)

RS.2– Adaptation, in relation to INT.2: adaptive capacity (evolutionary, flexible, reversible)

RS.3– Integration, in relation to INT.3: transversal capacity (connective and strategic)

RS.4– Resistance (Endurance), in relation to INT.4: operational capacity (reactive, dispositive)

RS.5– Recuperation (Resetting) in relation to INT.5: relational capacity (emotional, empathic and interactive)

+

> RS.6– Future (Self)Projection & Affirmation, in relation to INT.6: projective capacity (*setting up* capability > propositional, proactive, creative, innovative)

Conditions attached, in turn, with specific urban topics (urban “shares”) of data-recording, management and mapping representation (*Mapping + Managing*; anticipation/capacity for analysis and processing, analytical and conceptual), but also of management and urban planning (*Managing + Planning*; adaptability and adaptation, flexible capacity of answering, evolutionary and reversible). Topics of land-use planning and attention to the environment and landscape (*Planning + Landing*; integration/transversal skill, connective and strategic) but also of design contextualization

(*Landing + Designing*, endurance as operational and functional absorption capacity, responsive and dispositional) and of design and/or socialization (*Designing + Socialising*; recovery, rebound, re-launch / relational skill, empathetic and interactive); and, ultimately, of innovation, that is, of future projection and regenerative statement: a projective capacity, proactive, propositional, creative and, therefore, innovative, particularly decisive in relation to the new challenges of a new advanced logic.

## **BigData and resilient cities**

Resilience is a term derived from the materials science and indicates the property that some materials have to maintain their structure or to regain its original shape after being subjected to crushing or deformation. In psychology connotes precisely the ability of people to cope with stressful or traumatic events and positively reorganize their lives face of difficulties.

Cities are becoming increasingly central in resilience-building initiatives across developing and emerging regions. On one hand, there is a clear demographic reason for such trend: since 2005 more than half of the world's population resides in cities. Indeed, in Africa the urban population will double in less than a decade. Latin America and Caribbean population growth is less pronounced in urban areas, but in this region urban dwellers already represent the 75% of the total population. In Asia that figure currently accounts for 42.5% of total population – and there will be 3.3 billion people living in urban areas by 2050.

People with a high level of resiliency can effectively deal with the opposition, to give new impetus to their existence and even to reach important goals.

Applied to an entire community or a city or a region, rather than to a single individual, the concept of resilience is emerging in the analysis of subsequent social contexts to major natural disasters or due to human action such as, for example, terrorist attacks, wars or revolutions.

The RESILI(G)ENCE is a combined word between resilience and intelligence. This intelligence is not only artificial but also the human one, though undoubtedly today the world of BigData and OpenData can help you better understand the city and its dynamics.

In the city it has transformed the conception of technology as a simple licensor for better delivery of public services, in the broadest sense, has become a valuable mine of information for the good government of the territory. The smart city is primarily a knowledge challenge. A good governance of the territory must be able to make decisions based on the knowledge of what is happening. The data-driven decision is the result of a virtuous process able to transform the raw data into knowledge. Interpret information and make it available to citizens is the goal that you have to give a territory that wants to enable innovation.

Technology, of course, part of a new “open” design method, has become pillar of resilient cities: resilience is another fundamental characteristic of the smart city. In physical resilience is defined as the ability of materials to withstand external stresses. Transferred on the development plan, but also social, is the ability of a city to adapt and grow even when affected by traumatic events, such as floods and earthquakes, or if afflicted by “unnatural disasters” such as chronic unemployment, mobility problems and lack of green spaces, for example.

Resiliency does not imply only develop strategies of response and adaptation to external stress, but also put in paths field transformative acts to improve the city also in terms of prevention. Resilient cities are those who have knowledge of exposure to certain risks and thus establish a pro-active and integrated plan to prevent them. In this context, the data play a central role.

The digital age we live in is putting available a huge amount of data that we can use to improve the resilience of our cities and territories.

The Big Data are in fact becoming a dominant theme, not only in the business world, but at every

level of social organization, and in particular in the pursuit of environmental sustainability of cities of the future. The knowledge made available by processing big data, if properly used, will make us more responsive to change and able to adapt more quickly to the opportunities and pitfalls of the complex multi-experiential space in which we orient ourselves.

Today we are faced with the need to seek new forms of development based on the recovery and enhancement of environmental resources and thus optimizing the energy levels for the sustenance of cities and territories. The digital revolution should visit us more attentive to the assessment of the effects and externalities produced by the spread, on a planetary scale, new products and behaviors. Smart city discussions are almost always based on technology and how that technology can be used to improve the systems that make urban areas work. Cities are becoming increasingly central in resilience-building initiatives across developing and emerging regions.

Unlike rural areas, for example, information infrastructures are often available, data production and collection is cheaper, and the demand for value-added information services among city stakeholders is high. A mix of intentional and non-intentional production and dissemination of data and information makes both public and private organizations able to respond to such demand for their own benefit (e.g., increased efficiency and profit, respectively). These organizations find in cities a critical mass of users and assets that makes developing applications and services feasible and cost-effective. It is thus not surprising that Global Development players are increasingly looking at cities as privileged eco-human systems where deploying resilience-building/strengthening initiatives through advanced data-driven technologies, in order to maximize and optimize their efforts aimed at global wellbeing and international stability.

Although cities offer many benefits for citizens who live in them, when disasters strike an urban area, an enormous number of people are put at risk. That is why the subject of resiliency is so important.

Back in 2008, Andrew Zolli, PopTech Executive Director, explained in the New York Times that resiliency involves *“how to help vulnerable people, organizations and systems persist, perhaps even thrive, amid unforeseeable disruptions.”* and in 2015 Simone Sala, Associate Director of the Sensemaking Fellowship based at the Swansea University Network Science Research Center, adds, *“Some authors have also been trying to advance the ‘resilience paradigm’ by questioning its essence, such as Nassim Taleb who talked about antifragility that ‘is beyond resilience or robustness. The resilient resists shocks and stays the same; the antifragile gets better.’”* In other words, *constructing earthquake-proof buildings is a better strategy than having a reconstruction plan on the shelf. The topic at hand, however, is how big data analytics can be used to create urban resiliency.”*

Some of the *“new maps”* that Sala suggests need to be invented will undoubtedly be drawn by cognitive computing systems. Only cognitive computing systems will be capable of ingesting the mountains of data constantly being generated, make sense of it in real- or near-real-time, and offer decision makers recommended courses of action. Although systems, such as, transportation and water systems, can be made more efficient using siloed data, the real benefits of making cities smart with big data analytics will come when data can be integrated to discover new relationships. Sometimes these relationships will involve confounding variables, like weather, in order to understand them better. The more confounding variables that must be considered the more necessary it will become to utilize cognitive systems to perform the analysis. Smog, sewage and congestion are three of the hallmarks of contemporary urban living. But these downsides to city living are gradually becoming things of the past.

City planners are finding new ways to address these inefficiencies, leveraging connected technology to create smarter hubs that work for city dwellers. Welcome to the era of ‘smart’ cities. Advances

in wireless sensor systems, information and communication technology (ICT), and infrastructure allow cities to collect and curate huge amounts of data capable of sustaining and improving urban life thanks to the new and ever-growing web of connected technology: The Internet of Things (IoT). For Shawn DuBravac, Chief Economist for the Consumer Electronics Association, *“Smart cities around the globe have many differences but importantly they share a few common traits. These cities invest in infrastructure and people in ways that lead to a more connected, better-informed and more-efficient environment. The dynamic use of knowledge to improve both the utilization of scarce resources and a higher quality of life for its citizens is the hallmark of a smart city.”*

The IoT promises to put cities across the globe on the fast track to becoming ‘smart’. But we’re not there quite yet. The evolution of IoT involves three distinct phases. First, physical objects facilitate access to digital information. Second, physical objects are embedded with digital sensors to capture and transmit relevant information. And finally, physical objects receive digital prompts and cues which then alter the state of the physical object. This final stage will result in a seamless physical-digital sphere that holds tremendous promise in the building of smart cities. As a society, we’re barely in the middle of phase one — most of our physical objects are not yet connected, though connection alone is not enough. Cities must also have the infrastructure for efficient data transactions: How information flows from Point A to Point B. Indeed, all city services are based on a calculation of where to expend precious resources. The more data available for these calculations, the more sophisticated and tailored they become.

The challenges facing cities on the path to being ‘smart’ are large and varied. It will require a new way of thinking — akin to mastering a new language. Nevertheless, modern cities everywhere are moving in one inexorable direction: Toward a future where city governance and urban living will be as connected as the functions on our smartphone.

## **Conclusion**

The possibility of combining urban intelligence and urban resilience as factors implicated with a more advanced urbanism and an innovating planning, as final conclusions various considerations could be highlighted.

### **About Key-Terms**

The 6 accepted main key-words of the Resilience notion can be understood through other synonymous-terms with similar but variable potentials, linked with some Intelligence parameters.

- 1- Anticipation calls to Pre-vision and Pre-diction (that is to a new type of informational and processing record-mapping).
- 2- Adaptation calls to Adaptability (more strategic and evolutionary, less categoric)
- 3- Resistance calls to Endurance (more flexible and structural)
- 4- Absorption calls to Integration (more relational and transversal)
- 5- Recuperation calls to Reactivation (more dynamic and operational)
- 6- Regeneration calls to re-information (more informational)

Perhaps the best narrative example of resilience is the fable of La Fontaine Le Chêne et le Roseau, where a large oak brags to a fragile and slight rush of its power and showmanship to deal with nature, until an unexpected gust of wind from the north even his strength and initial resistance just thrown him, while the reed rocking, swaying and fluctuates -adapting to force the air-just keeping up.

But if for some point of view Resilience (engineering) can be understood as the capacity of a system to resist and absorb shocks, stresses and adversities coming back to an anterior or similar state, other vision (ecological) can understand Resili(g)ence as the capacity to react with shocks and stress and rebound and re-inform the system itself through the capacity of self-learning and (re)



adaptation.

In this semantic framework, other terms can help to define the different approaches around the Reseili(g)ence

### **1. Precision**

Or informational precision: as the capacity, today, of processing multiple and complex information, with objectivity, in real time conditions and with open source processes and technologies.

Data-maps, Data-scapes, Data-sensors, Data-records, talk about a more ubiquitous intelligence and objective approach that permit a better management and recording of the information for more efficient informational contexts and environments able to work with more anticipatory and comparative data-recognition and data analytics and synthesis.

### **2. Vectorisation/ Intention(Alisation)**

The role of these data-records done with precision, optimisation and efficiency must be combined with the capacity to orientate and conjugate synthetic projections (this is with the capacity to “manipulate”, in the more procedural less than formal interpretation of the term, data-records and data-analysis) or better, to intentionalise (to vector) them in more qualitative and efficient scenarios. This intentionalisation of data processes implicate a new strategic gaze, where conjugate information, conceptualisation end projection, able to orientate dynamic and unpredictable situations in a combined and innovative multi-string (o multi-path) city evolutions.

### **3-Adaptation (Customisation)**

Today, systemic and global are landing in particular and specific (local and/or individual) declinations.

In terms of landscapes, lands and territories.

In terms of users

In terms of relations, representation an communication.

The capacity to convert informational strategies in local operations, adapting themselves to multiple formats of recognition, adaptation and concretion, is in the base of new strategic gazes and methodologies.

In front of the old “homologation” codes the action with new diversified and multivalent protocols permit this combination between “(in)causes” and “cases” or “cases” and “(in)causes”.

### **4. Responsivity/Responsibility**

In terms of theoretical efficiency, today these duet results absolutely pertinent in all languages; the substitution of the abused “smart” adjective for cities and environments (as spaces linked overall with the management of information) and the goal of new more reactive and empathic approaches where technologies and sensibilities, sensorisation and sensuality can work together in more responsive info-contexts, results fundamental in the contemporary urban research.

### **5. Multi-Communities**

We can evidence the importance of a new idea of the communities, more diversified and anti-topological. More polyhedral and multifacetic; non-homologate.

### **6. Public (Active) Spaces**

And we can evidence also the importance of a new kind of public spaces as an active environment (ambiental and processal) not only as a representative, evocative or functional but as a more ludic, productive and mixed infrastructure eco, intra end infrastructural.

The relation of this active public spaces with a new idea of operational landscape, an operational topos linked with a new bolt ecology.

### **7. Place (Planning-Landing-Designing)**

And, in this sense, the idea of place not only as a “site” or as a “context” but as a “field” of forces and as an “interface” of activate (inter and co)relations, at time.

### **8. “Take Advantage” Design**

Design not only as a forma calligraphic action but as a strategic open process defined by flexible and synergetic operations of induction/(re)conduction able to work with threats and potentials at the same time.

### **9. Decodification**

De-codification (as an interpretation of data-records) and de(s)codification (as a re-interpretation, a transgression or a translocation/provocation) of the old established/disciplined inertias.

This provocative effect (narrative and descriptive and operational) able to work with prevision and unpredictability (in all the senses) at the same time. With rigor and imagination, with technology and creativity.

### **10. Creativity/Innovation**

When we are confronted with the usual measurable indicators of the sustainability, associated to the record of our environmental resource approaches (water, energy, matter, Co2 effects, economy, mobility, social parameters or land-use dynamics) we manage apparently objective and comparative data.

It seems that the term “Creativity” (subjective and cultural) can not be consider as a scientific sustainable indicator, specially in some contexts where ecology is synonym of “conservatism”.

But the progress of knowledge implicate the creative factor, not as a “singular extravaganza” but as an operational innovative implication. Where the innovation is the risk is also.

The resilience is also the capacity to accept the unexpected, and the sustainable intelligence is the capacity to evolve in interaction with the environment, accepting the risk of the new as a part of this evolving feed-back process.

Accepting and enjoying the innovation as a part of our human capacity, able to process the risk and to re-inform the system it self.

And for more efficient and sustainable urban systems, creativity, imagination, operational new expressions, could be part of our best habitat-environments.

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## From the territorial identity to the visual one: the communication of the Ligurian coastal towers heritage.

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### Abstract

The studies about the complex military construction heritage of Liguria, conducted in the last years by the Department of Architecture and Design, put emphasis on a coastal defensive system that is based on a complex continuous sequence of look-outs and defensive towers which were able to protect the entire area that overlooks the sea during the Saracen attacks.

These architectural works are not particularly audacious; they are just small military buildings conceived as fundamental elements of a more complex network which is distributed throughout the territory. Nowadays the entire heritage appears particularly heterogeneous: sometimes the towers are restored, some others times they are in a derelict state; in some cases, they were converted for private residential purposes, in some others they became part of the public construction, but, in any case, they are still today an evidence of a constructive system which is designed territorially and it identifies the Mediterranean coastal landscape, especially the one of Liguria.

These considerations gave birth to some researches focused on the valorization and communication of this heritage, with the goal of defining a strongly marked and recognizable visual identity of the entire coastal towers system.



Fig. 1, 2 Examples of Imperia's towers: the Prarola tower, built on the sea and the Tower of the Arma, built on the heights

## Introduction

A rather recurring characteristic of the Tyrrhenian Italian coast is the presence of architectural artifacts, born as defensive instruments for the increasingly frequent Saracen invasions coming from the sea.

In general, the typology of these buildings is quite simple, consisting mainly of small volume and a compact form; with almost no openings to the outside and fitted to the top of a terrace, necessary for sighting large portions of the sea, while, at the same time, easy to be identified from other similar locations.

It is this particular feature - which is the possibility of being able to relate to one another - that makes these rudimentary artifacts an interesting system, distributed wisely in the territory. In particular, these towers - which are actually only observational and non-defensive - are very common in the most complex morphologically-shaped coasts: they are, in fact, with a certain frequency both in the Ligurian coasts and in the most impervious stretches of the southern coasts and islands.

The great diffusion of the Ligurian Coastline has led the Department of Architecture and Design (which at the time was the Department of Architectural Sciences) of the University of Genoa to carry out in-depth research on the knowledge of the existing heritage, in order to trace the guide lines for the preservation and enhancement of this important historical and cultural heritage, that is particularly present on the west coast of the Ligurian capital city.

Within this research, the contribution of the disciplines of representation, both in the analysis phase and in the subsequent design phases, was particularly interesting and equally necessary.



*Fig. 3 The tower of Riva Ligure, now private residence*

### **A complex heritage**

It is not uncommon to notice on the Ligurian coast - especially in that of the west - military matrix buildings characterized by simple volumes and virtually no openings to the outside; Sometimes these buildings are hardly traceable, and sometimes their structure and typology are not easily recognizable, due to the subsequent manipulations carried out during the twentieth century, while in some cases they still appear in the original form.

These are the coastal towers developed by Ligurian population, mainly in the 16th century, to face the advances of the Turks from the sea.

The common characteristic of these artifacts is identifiable as much in shape as in the territorial location.

In fact, they are small artifacts with an almost central plant and more developed in height; they are generally isolated - at least they were originally - and are characterized by a masonry typical of military artifacts: stone walls that are particularly thick enough to effectively withstand eventual attacks.

Generally, the exterior walls appear with a "shoe" that improves stability and strength in the event of attacks and are almost "blind", meaning without openings. The inner space has the main function of containing the distribution element (the stairway) leading to the top.

The distribution on the territory with these artifacts is easily identifiable in correspondence with small reliefs facing the coast in order to improve the width of the tower's visibility (generally these are the "observational" towers); in other cases, contrastingly, they are in close contact with water (some of these originally came directly on the water, exploiting small emerged rocks (like the Prarola tower), but always, their position is closely related to the layout of the surrounding towers. It is a system of distributed buildings in the area with particular attention to the relations that each of them would have established with others.

They are not simple architectural works realized in strategic points in an absolute sense, but in points whose strategic importance derives directly from the position of other similar works.

A sort of territorial-scale project, far more complex than the individual elements that make it up. Precisely by virtue of this aspect, which inextricably links all military artifacts that belong to this real "sighting system". Also from the awareness of the basic principles of the whole system of sight towers, the will is to safeguard and enhance a heritage whose importance is related to the preservation of the entire system.

### **The representation at the service of research**

Studies conducted by the department to develop conservation and recovery projects of the coastal towers heritage have involved decisively, and at every stage of the research, the disciplines of representation.

At the same time, as the researches began, reference was made to iconographic documents describing the towers in question: old engravings that depict these artefacts; ancient cartographies that symbolically placed them on the territory, but also vintage photographs that witnessed their conservation status at the end of the nineteenth or twentieth century.

Also in the analysis of each single building, the design - and, more generally, the representation - was used to record the characteristics of each artifact, to interpret them and to compare them by diagrams and elaborated charts. But the representation also allowed a quick view of the distribution of the towers on the entire territory (in particular that of the province of Imperia), as well as the existing road links between them, with the aim of identifying routes easily accessible to the public. By focusing, then, on the design stage, the drawing became itself the protagonist of the project: it was in fact a project of communication, whose realization is itself a set of elaborate graphics or, in the broader sense, elaborated charts and multimedia that rely on the representation. The design was the means to know this heritage (through reliefs, sketches, charts, etc.), but it was also the necessary

instrument for planning (with sketches for the study of the coordinated image and the contents of the communication).

The project itself will see its realization through the production of graphic products (graphic panels and signposts on the basis of the coordinated image proposed).



Fig. 4 The tower of Riva Ligure: a comparison of a photograph of the early twentieth century and a current photograph

## Methodology

The research started some years ago in occasion of the collaboration initiated by the Department of Science for Architecture (DSA), now known as the Department of Architecture and Design (DAD) of the University of Genova, with the non-profit associations like Civitas and Area 24<sup>1</sup>, with the Order of Architects of the Province of Imperia and supported by the Liguria Region and the Province of Imperia. This research allowed the Department to organize one day of study during which the first results of the research were presented, together with the first proposals in the academic field.

The studies were conducted mainly by the professors of the department – assisted by some experts – and these found an application and experimental field in the respective classes of Architecture and Design. In particular, a synergy between the various disciplines has been reached and it allowed them to reach important results in terms of analysis and the overall project. The common element within the researches was the presence of the disciplines of the representation, which stand for valid measures for the investigation, design and communication.

## The survey and the knowledge

During the first investigations for this research, the importance of the design quickly emerged: not just because the first studies were based on graphic works (cartographies, old representations, etc.) but mainly because the survey – even if it wasn't extremely detailed – allowed them to lay the foundations for cataloguing of the entire group of artifacts and a critical reading was initiated with the goal of individualizing the common and distinctive elements among them. Through the visual survey it was possible to individuate the recurring typologies, and to quantify the maximum dimensions and the proportions of the artifacts which compose the entire architectural heritage of the towers of Imperia. The survey was made *in situ* (in the actual place) giving the real consistency of the artifacts and it allowed them to analyze the perceptive factors which are the basis of dislocation on the territory of the towers themselves.

<sup>1</sup> Civitas Volunteering Association has as its goals the safeguarding, recovery and study of cultural production and the environment in the province of Imperia. Area 24 is a company promoted by the Liguria Region, whose aim is to rethink the Ligurian coast through the management of the abandoned areas of the ex-railway between Ospedaletti and San Lorenzo al mare.



Fig. 5, 6 *The tower of Aregai and the tower of santo stefano al Mare: two different types.*

It's from the place where we can find the towers – especially from the upper balcony – where it was possible to record and confirm the project choices which were the fundamentals of the creation of this true network of buildings.

It was verified that in a lot of cases the principles according to which a tower represents an essential knot that guarantees the continuity of the network still apply; but in other cases, on the contrary, the following constructions changed the size of the visual cones (obstructing, for example, part of the vision line) causing the loss of those visual connections that were used to guarantee the link between one tower and the next ones, generating a real communication system between them.

During the inspections and the survey campaigns the attention was focused also on the possible operations that could valorize both the single building, and the entire system. In addition to that, it was possible to individuate the access routes to each artifact, with the purpose of finding a possible viability (in terms of vehicles and foot traffic) that could characterize the entire project intervention. So, it was a “fieldwork”, which included taking notes about every element that could contribute to know and visualize – also in a direct and immediate way – the consistency and the qualities of the heritage of the coastal towers of Imperia.

### **The data processing**

After the first “knowledge” stage, implemented through historical, iconographical, desk researches, inspections, surveys and supported by a rich photographic documentation, it was time for the next stage which was the “elaboration” of the data collected, with the goal of identifying prevalent typologies in the analyzed heritage, preservation state, actual destinations of use, and eventual usability and accessibility.

We obtained a complete overview of the actual conditions of this important architectural system which allowed to identify the main problems to address.

The attention was mainly focused on the still existing connections between the analyzed buildings. The access routes were studied in order to consider the possible fruition for the foot traffic or by using means of transportation (public or private ones); note was also taken of the preservation state in order to know if there would be a need of restoration or not; the actual property was considered to find the possible destinations of use for which each building could be converted; the recurrent typologies were found in order to write a catalogue that takes under consideration both the shape and size aspects, and the ones related to the position on the territory.

Also in this stage the support of the representation it was essential to have an immediate display of the actual state. Conveniently, elaborated diagrams about the cartographies permitted to not only clearly visualize the distribution of these particular buildings on the territory, but also to easily

identify the main and secondary road connections.

Similarly, a graphic language was created based on the “pictograms” and icons which is able to immediately indicate the affinity of each artifact with a precise typological variant. It is specifically thanks to the design and the graphic works that all the collected data have been fixed into a system pointing out relations, analogies, differences and so on between the single towers.



Fig. 7 Panel for the display of the heritage of the towers of Imperia and their typology (L. Turchet)

### The awareness and the need

After the first stage of survey and analysis of the real consistency of the Imperian towers heritage, it was defined as a complete overview which portrayed with precision the existing situation and it pointed out both the problems that should have been addressed, and the potentialities that would have been used. Due to obvious reasons related to the lack of adequate economical resources, the research intentionally left aside the definition of the intervention criteria for the restoration and the preservation of the single building or for the improvement of the existing infrastructure network, but it focused on the advantage that could derive from an efficient use of the communication.

Since this heritage is still relatively known, it becomes of fundamental importance to define a visual identity that makes the entire towers system easily recognizable and identifiable and that would be able to enhance the historical, cultural, architectural, territorial and panoramic features.

Therefore, it was chosen as the main target, the definition of the corporate image of the Imperian coastal towers system in order to be able to organize in a coherent and recognizable way all the essential signage related not only to the single towers, but also to all the paths referable to them and also all the eventual architectural and environmental emergencies present on the territorial context. To make a communication effective, means to report with attention every single element that is part of the watchtowers system and, at same time, make the entire unit with all its paths recognizable under a territorial point of view; we would get then to the valorization of the system itself and to an increase of the use by the local residents (with hiking and cycling trails) and also by the tourists who would be attracted by the historical and architectural aspects of the single towers, and also by landscape and the hiking possibilities that characterize the entire context.



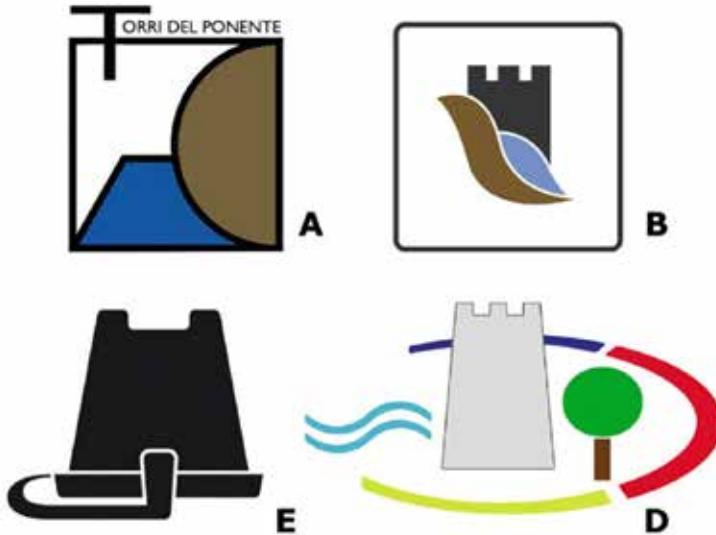


Fig. 8 Logo proposals for the Torri dell'Imperiese.  
 (students: A- Malaspina, Priano, Sartini; B – Turchet; C – Camagna; D – cantatore, Tixi, Zarba)

### The goals and the projects

The investigations conducted in the existing heritage of the coastal towers of Imperia pointed out the need to operate in order to avoid any additional deterioration and consequent dispersion.

These operations can't rely on high budget, for this reason they have to concern only the realisation of a project for its protection and safeguard; in this case it was about defining a system of communication (addressed to the users) which puts emphasis on the potential of the entire heritage and of its single artefacts, with the final goal of spreading a common sense of respect and attention in regards of the towers and the (territorial, panoramic and urban) structural layout linked to them. Therefore, possible brand have been defined so that they were able to immediately identify the "towers system" – also through the use of simple and effective graphical signs which were in relation with the architectural and panoramic features of the towers themselves – and, later on, it was possible to define the respective coordinated images.

The projects were developed by the students of the Graphic Arts courses, during the Industrial Design Degree Course, under the guidance of their professors<sup>2</sup>, and they brought a series of proposals which identify possible and efficient communication systems linked to the territory. In particular, the issue of the signage was addressed and developed since it achieved a fundamental importance in the case of a heritage which is spread on the territory and not easily recognisable, identifiable and reachable.

The logos which were proposed tried to emphasise the main features of the territory that host the towers and, in particular, the coexistence of the hilly territory and the close relation with the coast and the sea; in addition, the attention was also focused on the typological aspects related to the military architecture, in this sense also at the formal elements that make the towers themselves recognisable.

The architecture and the landscape were the two elements that inspired major part of the projects

<sup>2</sup>The Editorial and Advertising Graphics Laboratory was held in the Academic Year 2008/09 by the teachers Maria Linda Falcidieno and Massimo Malagugini, with the collaboration of Cinzia Ratto and Serena Wich and developed the theme of enhancing the system of the Imperia's towers, based on the basic elements of visual communication: word, image and sign.

about the brand of the Imperian Towers.

Starting from the *brand* it was possible to define the entire image of the towers system, by declining step by step, signs, images and colours in relation with the different “supports” on which the signage would be developed.

The signage was set on different levels of fruition and, so, also of reading: from the road signs essential to reach the different roads (motorway network, State, provincial, secondary, pedestrian roads, etc. ) to the punctual one which is fundamental to locate the artefact itself on the place.

The contents of the directional signage are generally very easy and basic, on the contrary, the one related to the punctual signage can be more developed and they can provide more information to the users.

The dimensions of the signs will be different as well depending on the different distances from where they will be seen. A motorway sign, must contain few and immediate indications since it will be watched in a very short time and it must be of appropriate dimensions because it will be perceived from a not close distance; on the contrary the panels related to the hiking signage can count on a longer reading time and so they can be more developed and with more detailed and specific contents.

These last ones will be perceived also from a reduced distance and, therefore, they can use smaller fonts.



Fig. 9 Study for the visual identity of the Imperia towers (Students: Bonifazio, Bruzzone, Rossi; Malaspina, priano, Sartini, Todde; Camagna; Cantatore, Tixi, Zarba)

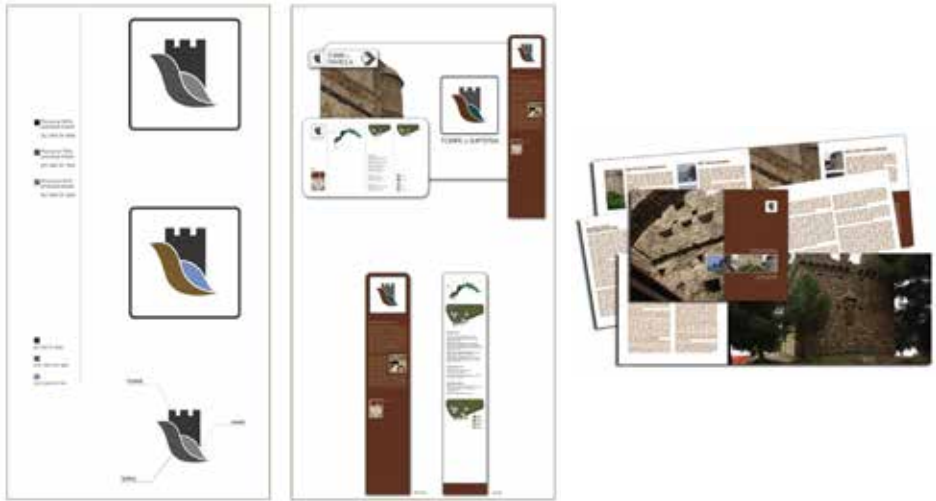


Fig. 10 Study for the visual identity of the Imperia towers and information material about the Imperia towers (L. Turchet)

In any case the attention was always focused on the coherence of the entire communication project, trying to identify a coordinated image easily recognisable and attributable to the towers system and to its relative potentials, like, for example, the panoramic, historical and cultural aspects.

Of all the proposals developed within the laboratories, it was intended to point out in particular that, for the effectiveness of the graphic solutions adopted and for the coherence of the entire communication project, it was the most suitable to represent the results of the whole research and , for this reason, has been further developed through applications on other graphic material (folding, specific panels, etc.)<sup>3</sup>. The aim of these proposals is, above all, to lay the foundations for the protection of the sighting tower system through the development of a simple, but effective, communication system in the territory.



Fig. 11 - 12 Saracen Towers of Salento, Puglia. Tower in Marchiello and Tower in Torre dell'Orso

<sup>3</sup> The work that has been developed and has reached a high level of definition has been that of Luca Turchet. This work has defined a visual identity that has also been decoded for the definition of communication products related to the study day "The Coastal Towers of Imperia", organized by the Department of Architecture Sciences at the Church of San Salvatore, Genoa, In June of 2009.



Fig. 13 - 14 Saracen Towers of Salento, Puglia. Tower of Santa Maria dell'Alto in Nardò and Tower Lapillo

## Conclusion

Given the good results of the research done to this point, a recent meeting involving school teachers and experts in the field concerned has<sup>4</sup> laid the foundations for launching a further research program that could apply studies conducted to this Point on the territory of the Ligurian West, even on the eastern coast to the point to relate with other similar initiatives that could be carried out on the whole development of the Italian coasts, to which belongs a vast patrimony of sight-seeing towers built from the sixteenth century

In fact, other regions are moving in similar directions, such as Sardinia<sup>5</sup>, and in many others (such as Puglia), the heritage of the coastal towers is equally rich to suggest recovery and enhancement in a short time.

It is desirable that soon it is possible to come up with an operational model applicable to the entire national territory (if not even on the entire coast of the Mediterranean), enabling it to exploit such a complex heritage whose potential is not so much sought in the single building as in the whole system of territorial and visual connectivity that they constitute; a true widespread network in the territory - conceived about five hundred years ago - of which each element, even in its simplicity, is always a fundamental component

The network of sight-seeing artifacts, due to the fact itself that it is diffused in the territory and has its elements in particular orographic contexts, represents also an important apparatus capable of enhancing the entire environmental and landscape context.

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<sup>4</sup>"Le torri costiere, una ricerca da percorrere", a day of study at the Don Milani school in Genoa on March 7, 2017.

<sup>5</sup> Cfr. G. Pellegrini, *Progetto per la valorizzazione delle torri costiere: il modello operativo della regione Autonoma della Sardegna*, in L. Cogorno, M.L. Falcidieno (a cura di) 2009.

## “Urban Gates” and train mobility: city’s identity

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### Abstract

Since their appearance train stations have played a key role in urban areas, constituting the driving force to the planning of new parts of the city or to their transformation. The stations are not only transport hub, but elements of access to the city, such as the ancient “city gates”, symbols of identity of a place and today containers of different functions.

The main method of analysis of the role of railway stations in urban environments is the Drawing, main tool to study the architecture of the buildings and the relationship with the urban surroundings. Drawing permits to know the evolution of the railway “type”, to study the stages of transformation of the cities, to reconstruct the history of current and future locations. The classification of stations (eg. chronological, geographical, typological) is useful to analyze the relationship between the building and its context, recalling history and identity of the place (*genius loci*).

The goal is the study of the project actions which involve the railway station in its historical evolution, with the aim of identifying guidelines in established contexts. The historic reconstruction of urban areas through the Survey and Project design allows the knowledge and appreciation of the places by means of the representation of previous architecture and new proposals. A case study is the railway station of Matera and its city square.

### Introduction

The historical and architectural value of a city, identified as cultural heritage suggests the idea of a place rich in history and monuments worth to be conserved and preserved, leaving out its value as an inhabited city in constant evolution. The concept of the identity of a place is the basis of the criteria for inscription on the World Heritage List and focuses on protection of the elements that are the origin of this uniqueness.

In a changing global environment, characterized by changing and appearing of contemporary needs, a key role in urban transformation is played by mobility and railway infrastructure.

Since the appearance of the railway buildings in the nineteenth-century cities questions have been raised about introducing the railway buildings in the surrounding urban fabric. Upon construction of the railway buildings, consolidated nineteenth-century urban centers have had to deal with the arrival of an infrastructure that spoke a different “language”, a new architectural type, with the consequent problems linked to the choice of its location. Similarly, in the contemporary era, new issues have had to be dealt with regarding the railway system, as a result of changes in transport needs (slow and high speed mobility) which involve the transformation of portions of the city.

These urban phenomena related to cultural heritage and mobility affect the city of Matera, in Basilicata region, registered in the UNESCO list of cultural heritage since 1993 and recently elected European Capital of Culture for 2019.

## Methodology

The subject of research is therefore the identification of places to be preserved as common heritage. Each transformation of a building brings urban consequences, such as the changing of the vocation of the neighborhood, new buildings and especially the loss of identity of the place (*genius loci*), an effect also caused by the railway building.

The analysis of the case studies aims at identifying areas of intervention in the context of layered historical urban contexts. It focuses on a few major issues: the construction of infrastructure and the creation of public space, the importance of heritage to be preserved without musealizing it, and thus encouraging its fruition.

The aim of this research is not only to identify the mode of transport to adopt in a cultural heritage city, but especially the regeneration of the spaces for reception, places of arrival in the city. Since their appearance in urban areas, railway stations have represented the access, comparable to the ancient “city gates” of the cities and we investigate their role in the formation and configuration of public space. These places have a natural vocation as square, civic center, modern city gate and, in the case of Matera, they are located near the historic city.

In details, the Matera central station is located in a focal point between the historic center and the subsequent expansion neighborhoods, a free area where representative buildings, such as the city hall and the court, stand. From there main streets leading to the ancient Rione Sassi branch out and it is important that those who reach the city by train, leaving the underground station, are naturally led to their destination through the shape of space and architecture.



*Fig.1 View of Piazza della Visitazione, Matera.*

The enhancement of the places is based on the knowledge of their historic phases in order to outline future views. The purpose to preserve the identity does not exclude that this is the subject of contemporary design, always starting from the knowledge of the places and their history. In Matera the issue of enhancement is major as the architectural interventions in such scenic locations must be based on a thorough knowledge of the places themselves; without such knowledge no intervention would be devoted to enhancement. Piazza della Visitazione, the square of railway station in Matera, is a focal point in the development of the city’s urban fabric. The best tool for the reconstruction of historical phases of an urban place is constituted by the Drawing. This instrument covers both historical drawings, the projects presented in contests, the graphic reliefs covering different periods and the drawings for future proposals. One may get critical knowledge of any work when he knows the ways and techniques to describe and represent it. The Drawing applied to the discipline of architecture is a kind of Architecture germ. The architecture finds the meaning of his foundation in the images, even in those used to analyze, to interpret and redesign itself. The graphic description provides the strategies for critical knowledge of physical reality, especially in the case of complex and layered realities.

The graphic representation is also a fundamental tool for the analysis aimed to recognise the rules

of the complexity of building and to detect formal project proposals and process solutions that interpret the urban history, the architectural work, the building types and forms of architecture as identity of the place<sup>1</sup>.

Piazza della Visitazione in Matera has a major urban and architectural role in the fabric of the city. The method adopted for the analysis of its characteristics begins with the bibliographic research carried out in the main city library and the national library, based on publications that have dealt with this unresolved urban node since the early history. The acquired information was enriched by written and graphic documentation pertaining to the town archives which include elaboration of urban plans focusing on the railway station area.

Great contribution to research was given by design competitions published for the area of the station of Matera, the first one in 1993 for the creation of a civic center and the second one in 2008 announced for architectural regeneration of the square.

The winner team, Panella-Aymonino and Corazza, designs an architecture heir to the “classical” rationality, characterized by the succession of public spaces and squares, at different levels<sup>2</sup>.

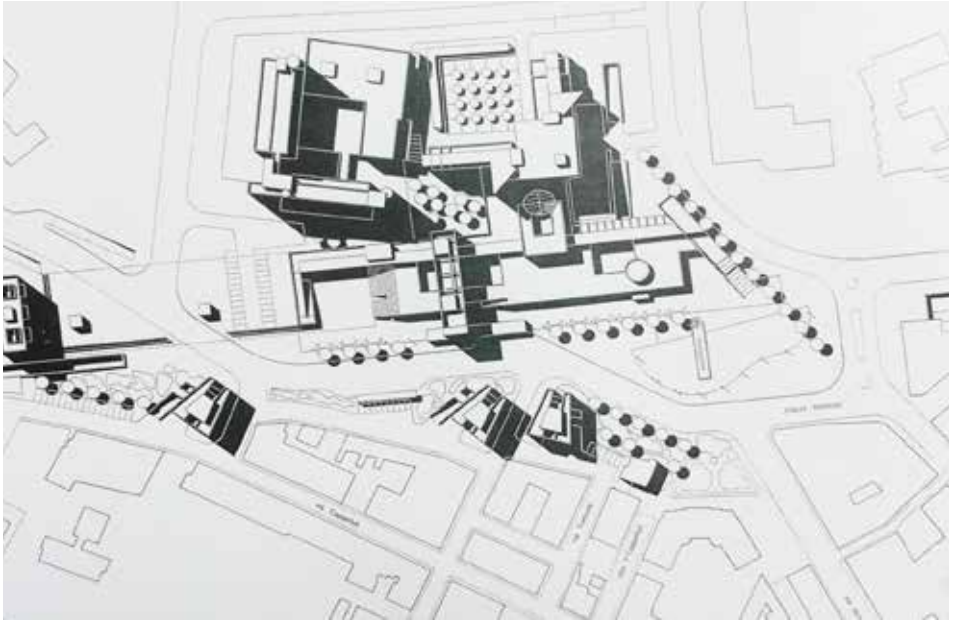


Fig.2 Plan of the winning project by Panella-Aymonino and Corazza (1993)

One of the goals on the competition of 2008 was to create a connection between the various entrances to the city (called “thematic gates”) and the winning project, by architect Llavador, involved the construction of a theater nestled in a park. Neither this project, as the one developed for the previous contest, was not realised, but both highlighted the peculiar character of this space.

By means of Drawing, in this case the project, one can understand the relationships between parts of the city, highlighting the public space. The urban spaces are an opportunity to rethink the shape and the meaning of the contemporary city.

<sup>1</sup> A. Conte, *Rappresentatività della città scavata tra tradizione e innovazione*, in A. Conte, *La città scavata. Paesaggio di patrimoni tra tradizione e innovazione*, Gangemi Editore, Roma, 2014

<sup>2</sup> Gangemi (Ed.), *Progetti italiani per Matera. Concorso nazionale di idee per Piazza Matteotti. Catalogo della mostra*, Gangemi Editore, Roma, 1993

These spaces within the consolidated urban fabric are often set free by spin-off processes. Those areas can be a resource for the renewal of the urban form.

Drawing can have many values, not only as a representation of the design ideas, both in the case of competitions, both in urban planning, but also as tool for relief of places and urban practices, including fruition, both of the space survey to identify the relationship between full and empty spaces. With this value the Drawing allows both the knowledge of the places, by means of drawing of reality, both the regeneration of space, through design of ideas.

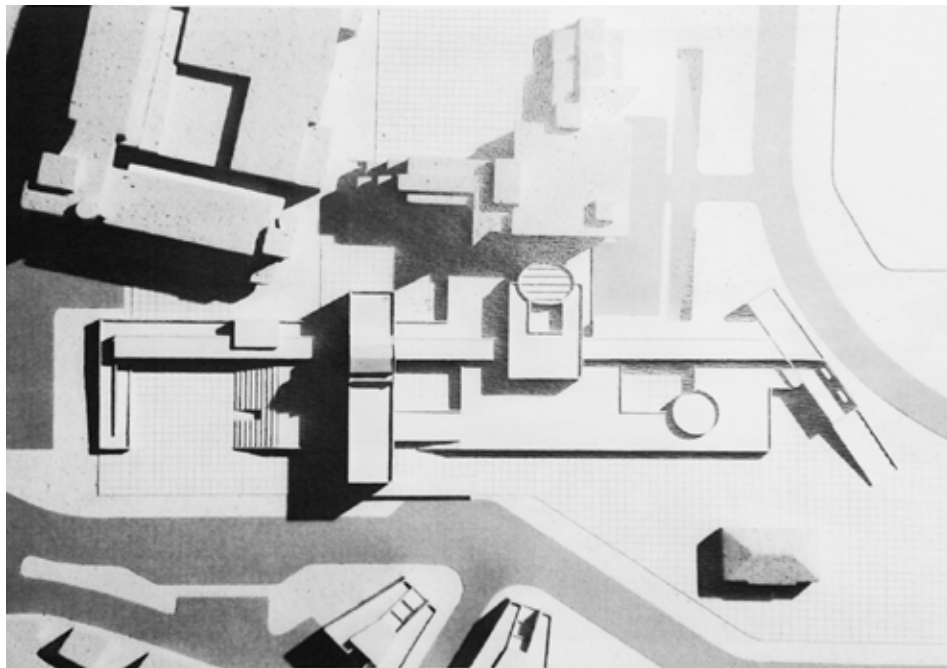


Fig. 3 Model of the winning project by Panella-Aymonino and Corazza (1993).

The above outline parallel between the appearance of the railway stations in the nineteenth-century city and the contemporary issues that arise as a result of their transformation as effect of the changing transportation needs is rooted in the strong changes induced into the urban structure. In historical times, the advent of the railway transport led to the birth of a new architecture “type”, that of the railway station, which served as a stimulus to establish new parts of the city<sup>3</sup>. The expansions were originated by the choice of location for new station buildings, outside limits of the nineteenth century city, but close to this, identifying the privileged axes for development and often leading to build new portions of the city.

Similarly, today we are witnessing a proliferation of urban renewal and infrastructure interventions in many European cities, characterized by places of crisis or decline, where local governments have decided to act on symbolic buildings in order to save them from neglect and employ them in new features. Such urban regeneration operations are carried across Europe mainly on historic railway buildings. On the one hand, the aim was to give new life to monumental buildings; on the other it is meant to start processes of regeneration of the surrounding urban spaces.

3 P. D’Agostino, *Stazioni ferroviarie. Riflessioni tra disegno e progetto*, Maggioli Editore, Santarcangelo di Romagna, 2013



## Conclusions

The first result of this research, applied to the square of train station of Matera, is to understand the importance of the place where the infrastructure insists for its role as a modern city gate. The place of departure and arrival in the city in historical times, characterized by flows of goods and people, today has become a hub that covers the square functions and is a meeting place and shopping center. The transport function has a minor role and sites become modern centers of aggregation. The characteristics of these intervention areas are generally well described in the texts of design contests, as organized since their first realisation in the late nineteenth and early twentieth century. They highlighted the architectural and urban issues, as well as those closely related to mobility, and these principles for the composition of the space of the city should be intended cornerstones for modern interventions, because they preserve the identity of places.

The arrangements provided from time to time in response to the needs are not the essential aspects, whilst such role is covered by the common elements over time, identified as major characteristics of the space, that contribute to the identity of the place.

The understanding of these is allowed by the representation of reality and of the reported transformation proposals. These helped to reconstruct the history of a place in the city, both in terms of the timing of events, but especially by representing the architectural evolution of space, or its negation.

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## Narration War

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### Abstract

The article analyses why today, even more than in the past, the strongest conflicts are the ones fought in a territory that's, at the same time, the oldest and the newest: the narrative ground. As always dictatorships and terroristic groups build themselves and their lands using images, signs but most of all stories, with which they obtain consent. Using these stories they charm their audience with the promise of a true and strong identity they can belong to – that seems to be the hardest thing to find in this world, especially during cultural and economic crisis<sup>1</sup>. This old dynamic – that today is built in a new way – is perfectly clear also in the minds of the people that lead the terroristic group that today has most colonized our imaginary and our worst nightmares: the self-declared Islamic State. Already in 2007 the Army of Mujaheddins proclaimed that “the communication is half of the battle”<sup>2</sup>, but if we take a look at the last two years, we could say that's lots more than a half.

Analyzing the patterns of these kind of narrations and the way these contents are spread, the article would try to understand how power, identity and perception of a territory are created through a narrative war today, with a constant reference to the concept of post-truth<sup>3</sup>, that seems to define our era.

### Homo fictus<sup>4</sup>

Stories are for humans what water is for fishes: we are constantly immersed in them, but we don't even notice it<sup>5</sup>. Our experience of reality and our existences are shaped by a narrative structure that defines every fact like an effect due to a cause, even if – most of the time – it isn't true. We need stories in order to give a meaning to our lives, and we have, as a species, a real dependence on them. Experts think it might be caused by the fact that stories are an easy way to spread information and knowledge; a way to build a person's moral code and to disseminate a series of values into a society<sup>6</sup>. The verb ‘to narrate’ comes, indeed, from the Latin word *narrare* that's a contraction of *gnarigare*, where *gna-* means ‘to know’ and *-igare* means ‘to do’<sup>7</sup>. The act of narration is therefore an action to spread knowledge.

<sup>1</sup>M. Aime, *Eccessi di culture*, Torino, Einaudi, 2004

<sup>2</sup>M. Maggioni, P. Magri, M. Lombardi, *Marketing del terrore: Twitter e Jihad: la comunicazione dell'ISIS*, Milano, Oscar Mondadori, 2016, pp. 68-69

<sup>3</sup>“Word of the Year 2016 Is... | Oxford Dictionaries” Oxford Dictionaries | English. Accessed April 19, 2017. <https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2016>

<sup>4</sup>J. Gottschall, *L'istinto di narrare: come le storie ci hanno reso umani*, Torino, Bollati Boringhieri, 2014, p.10

<sup>5</sup>J. Gottschall, *L'istinto di narrare: come le storie ci hanno reso umani*, Torino, Bollati Boringhieri, 2014, p.10

<sup>6</sup>J. Gottschall, *L'istinto di narrare: come le storie ci hanno reso umani*, Torino, Bollati Boringhieri, 2014, p.46

<sup>7</sup>“Narrare | Dizionario Etimologico” Etimo. Accessed on April 19, 2017. <http://www.etimo.it/?term=narrare&find=Cerca>

### Territory and narration

Stories are certainly also a way to create a feeling of belonging to a group<sup>8</sup> and a way to give the group an identity – as scriptures have always done for most of the religions and history has done for the nations.

Being ‘imagined communities’<sup>9</sup> – where members don’t really know each other, like in real communities –, the nations have always needed to create their identity and perception with tales – that most of the time are more plausible than true. That happens sometimes also naturally: all the Americans biggest stories about the West’s conquest, the legends about the big North and the escapes toward the South created in the Old Continent a perception of a new land, a nation where everything was possible, where everyone could start their own story. This created a narrative ground toward which immigrants rushed from all over the world. America was – and partially is still today – together nation and narration<sup>10</sup>.

### Digital reality

The stories have a universal nature, but the way we tell them changes depending on the technology we have. Every new media has always generated a new form of narration. A new kind of story is emerging under the influence of the Internet. The digital narration is fragmented on different platforms and it’s not sequential<sup>11</sup>. It helps to link every kind of sign (an image, a video, a post on social networks etc.) that an identity (a single person or a company, a group, a nation) produces and gives it a meaning. This kind of narration is participatory, is often similar to a game, and is very immersive<sup>12</sup>.

Tools like smartphones or smartwatches – that today are used by the 66% of the world’s population<sup>13</sup> – are making the boundary between the virtual and the real world more and more blurred, bringing us toward a digital reality.



Fig. 1 Smartphones guide us in every new place we visit, helping us building our perception of it.

8 J. Gottschall, *L'istinto di narrare: come le storie ci hanno reso umani*, Torino, Bollati Boringhieri, 2014, p.46

9 B. Anderson, *Comunità immaginate: origini e fortuna dei nazionalismi*, Roma, Manifestolibri, 2009

10 C. Salmon, *Storytelling: la fabbrica delle storie*, Roma, Fazi, 2008, p.7

11 F. Rose, *Immersi nelle storie: il mestiere di raccontare nell'era di Internet*, Torino, Codice Edizioni, 2013, p. XII

12 F. Rose, *Immersi nelle storie: il mestiere di raccontare nell'era di Internet*, Torino, Codice Edizioni, 2013, p. XIII

13 “Digital in 2017: Global Overview.” We Are Social, January 24, 2017. <https://wearesocial.com/blog/2017/01/digital-in-2017-global-overview>.

In the digital reality our opinions and perceptions about every kind of identity we meet are built almost completely through this fragmented digital narration and can be easily manipulated by who can master the ability of telling stories on social networks and the Internet in general.

### Post-truth and narration war

During June 2014 Abu Bakr al-Baghdadi declared the birth of the Islamic State of Syria and Iraq<sup>14</sup> (or ISIS), a place that didn't exist before, and that of course isn't recognised by the other states as a legitimate nation. But since then everyone of us has dedicated a part of our mental map of the world to that horrible territory, and has filled it with the images of the decapitations, of war, of devastation and other terrible things.

This virtual place has more presence in our minds than a lot of other real places, and that is not just a matter of violence and terror, is first of all a matter of narration.

Already in 2007 the Army of Mujaheddins proclaimed that “the communication is half of the battle”<sup>15</sup>, but if we take a look at the lasts two years, we could say that's lots more then a half.

The IS's strategy on social networks was created and leaded by Ahmad Abousamra, a thirty-two years-old man from Boston. Everything was created to achieve two important targets: the first is obviously to terrify their enemies – mainly though those videos that everyone of us knows quite well – the second, but not less important, was to obtain new allies and adepts.



Fig.2 A screenshot from the video “A message to the Nation of the Cross” shows a clever use of perspective and colours, and a place that could be quite everywhere.

Twitter was chosen to spread their message because even if every profile was shouted down they could open new ones and simply use hashtags to reach their audience. Their accounts were created to show the new adepts how is the life in the Islamic State. A series called *Mujatweets* has been produced by Al Hayat Media to show that the IS's soldiers are merciful with children and animals and that life would be great inside that nation.

But that's not all. The IS Media Center has develop also another powerful strategy: the *gamification*

<sup>14</sup>“Stato Islamico” Wikipedia, April 17, 2017. [https://it.wikipedia.org/w/index.php?title=Stato\\_Islamico&oldid=87156052.15M](https://it.wikipedia.org/w/index.php?title=Stato_Islamico&oldid=87156052.15M).  
<sup>15</sup>M. Maggioni, P. Magri, M. Lombardi, *Marketing del terrore: Twitter e Jihad: la comunicazione dell'ISIS*, Milano, Oscar Mondadori, 2016, pg. 68-69

of their communication that use the familiar graphics of well-known videogames like Call of Duty to spread their messages and let their adepts think that they could enter in the game if they join them. The truth doesn't really matter, what matters is just to persuade.

In this frame we can understand how this is a war fought mostly on the ground of narration that we are trying to fight just with real weapons. If we really want to try to defeat ISIS we need to design a counter-narrative that has to be (at least) as good as theirs.



Fig. 3, Fig. 4 A screenshot from Mujatweets and a banner that shows the process of the gamification using the pictures of the terrorists of.

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# **DYNAMIC VIEW**

## **The parametric representation for the analysis of visual perception in motion**

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### **Abstract**

The image of the city, the territorial transformations, the value of the landscape, the implicit centrality of view, pushes research toward horizons of scientificity, with the objective of defining criteria, strategies and tools to quantify perception data, conscious of the centrality of movement that characterizes our society which is always on the go. The proposal wants to start from the analysis of the essential elements of the vision and the laws already structured by the Gestalt theory, from which arise urban analysis like Kevin Lynch's studies for the definition of a system of notation of vision in motion. The construction of parametric algorithms stands as the place of trial, where through the simulation of the perceived reality is possible to quantitatively and qualitatively evaluate the perceived data. The result is a static analysis, conducted for all the points of the chosen path, which returns a colored mesh to indicate the degree of visibility of the elements of the context. At the same time it is also possible to derive a dynamic analysis, conducted point by point along the selected path, to obtain a monochrome mesh which indicate the space perceived from the point of the track in question. The centrality of the eye, which belongs to our culture of communication and of effective relationship between man and his territory, is thus, through this instrument, expressed and quantified not to be the derived result but the strategic element that directs the project and supports the architectural choices.

### **Introduction**

The visual perception of space is the most important factor that defines landscape experience and cognition. It triggers "to a sensory level in what, in the field of reasoning, indicates how understanding ... the ability to create patterns able to give a meaning to all the 'experience through organized forms'<sup>1</sup>. This operation can be ascribed to a process of "virtual representation", the "figuration", a passage resulting from sensory perception, in which the vision sets the essentials, the "perceptual concepts"<sup>2</sup>, describing the morphogenesis of the idea. As Gaspare de Fiore explains, "finding the relationship between history and design, the image of the city not only wants to analyse

<sup>1</sup>R. Arnheim, *Art and Visual Perception*, University of California Press, Berkeley 1954.

<sup>2</sup>R. Arnheim, *Visual Thinking*, University of California Press, Berkeley-Los Angeles 1969.

its representation and its meaning, but above all it aims at indicating and identifying those places, by searching through historical knowledge and the graphic investigation, the peculiar identity that Modern globalization seems to erase<sup>3</sup>. Analyzing the impact of design decisions on perception of space may help to significantly improve the quality of urban developments<sup>4</sup>. In order to better understand the complex mechanism of visual perception, it is possible to start with the analysis that Gestalt's psychology makes of this phenomenon, and in particular with the research that it makes about the figure-ground organization. As Katz roles explain<sup>5</sup>, it is possible to see a world of forms and patterns that are stable, coherent, and known to our mind and that emerge from a field of amorphous sensations<sup>6</sup>. About it, Rudolf Arnheim asks, "How is it that human beings, equipped with two eyes see a single world? ... Art (as well as perception under almost all conditions) has to deal with the organization of the visual field into figure and background"<sup>7</sup>. The figure emerged from the concept of *Prägnanz*, the belief that the brain, rather than piecing together small "atoms"<sup>8</sup> of perception, imposes one whole "psychological organization" on sensations received by the organism<sup>9</sup>. According to Köhler, "perception is always a unitary process, a functional whole, which gives, in experience, a sensory scene rather than a mosaic of local sensations"<sup>10</sup>. The mind organizes the amorphous visual stimulus it receives from the world into a mental image of whole forms and patterns, two-dimensional primitive<sup>11</sup>. Gestalt established laws of formal organization; figures emerge through the implied continuity of congruent lines, implied contours, and the grouping of like elements<sup>12</sup>. Through a diagrammatic language of line, planes, and forms, the theory devised an abstract formal language that decodes the chaotic information we receive from the world<sup>13</sup>. In the post WW II era and culture, Gestalt thinking spreads rapidly into the visual fields of art and architecture, fueled by the precise and uncanny diagrammatic language the theorists devised to demonstrate their points. A major figure in the dissemination of these ideas in the visual fields, in North American academies was Gyorgy Kepes, fundamental to the American urban planner Kevin Lynch, with whom he collaborated at the research, founded by the Rockefeller Foundation, titled "The perceptual form of the city"<sup>14</sup>. This research led Lynch to writing a text entitled "Notes on City Satisfactions"<sup>15</sup> of 1953, which in part anticipated some of the issues that would later be discussed in the book "The image of the city"<sup>16</sup>. The script written by Kepes on this occasion was instead "Notes on Expression and Communication in the Cityscape"<sup>17</sup>.

<sup>3</sup> G. De Fiore, 2005. *Appunti di Viaggio*, in *Immagine della città europea*, V. Volta (eds), Legnago, Tamellini 2005, p.20.

<sup>4</sup> O. Ciftcioglu, M.S. Bittermann, *Visual Perception Model for Architectural Design*, in "Journal of Design Research", 7 (2008), pp.35-60.

<sup>5</sup> D. Katz, *Gestaltpsychologie*, Benno Schwabe, Basel 1944.

<sup>6</sup> I.E. Gordon, *Theories of Visual Perception*, Psychology Press, Hove 2004

<sup>7</sup> R. Arnheim, *Art and Visual Perception*, cit.

<sup>8</sup> G. Mandler, *A History of Modern Experimental Psychology*, MIT Press, Cambridge 2007.

<sup>9</sup> H.F. Mallgrave, *The Architect's Brain*, Miley Blackwell, Chichester 2010.

<sup>10</sup> *Ibidem*.

<sup>11</sup> M. Filippucci, *Dalla forma urbana all'immagine della città. Percezione e figurazione all'origine dello spazio costruito*, tesi di Dottorato, Sapienza Università di Roma, Dottorato in Scienze della Rappresentazione e del rilievo, XXIV ciclo (2012), in hdl.handle.net/10805/1506 [2017].

<sup>12</sup> V. Bruce, P.R. Green, M.A. Georgeson, L. Dynan, *Visual perception: physiology, psychology, & ecology*, Psychology Press, Hove 2010.

<sup>13</sup> G. Kepes, *Language and Vision*, Paul Theobald and Company, Chicago 1964.

<sup>14</sup> K. Lynch, *Kevin Lynch papers*, MC 208, box X. Massachusetts Institute of Technology Institute Archives and Special Collections, Cambridge, Massachusetts.

<sup>15</sup> T. Banerjee, M. Southworth, *City sense and city design*, pp 135-154, MIT Press, Cambridge 1995

<sup>16</sup> K. Lynch, *Notes on City Satisfactions*, in K. Lynch, *City Sense and City Design. Writings and Projects of Kevin Lynch*, T. Banerjee, M. Southworth, MIT Press, Cambridge 1990.

<sup>17</sup> G. Kepes, *Notes on Expression and communication in the Cityscape* in Lloyd Rodwin, *The future metropolis*, G. Braziller, New York, 1961

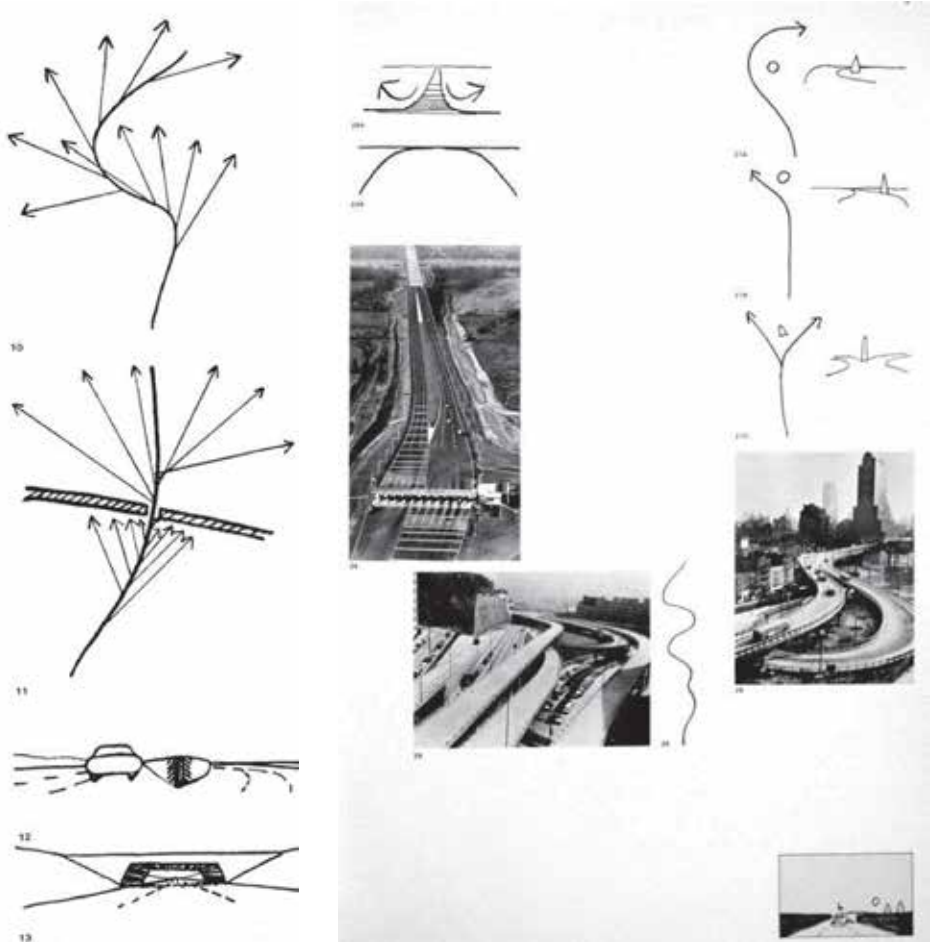


Fig. 1 Lynch's outline about the view from the road

Lynch's text on the concept of satisfaction introduced a new way of looking at urban space, which was based on the principles of orientation and recognizability of places, and on factors such as hospitality, pleasantness, rhythm, variety or the ability to stimulate or relax the gaze. According to Lynch, "sensual pleasure" given by a place is also determined by "physical" aspects such as smells, sounds or plasticity of forms, while intellectual pleasure is caused by interest, capable of stimulating curiosity. Those elements are difficult to communicate even more than to quantify and measure. Among the aspects to consider there is the movement, defined as a crucial component in reading the city. Starting from the identification of the significant elements to be taken into account, Lynch began to work on the determination of a reading method that required the construction of a new language, the main feature of which was an abstraction level that made it universal regardless of the individual perceptive criteria that are culturally and geographically characterized.

As Vincenzo Andriello emphasized<sup>18</sup>, Kepes's influence on Lynch, about Gestalt theories on perception, is to be recognized in the use of the concept of figure-ground.

This conceptualization gives to Lynch the opportunity to shift his focus from the concept of orientation to the more elaborate one of "imageability", a notion that will be the skeleton of "The image of the city". The concept of "imageability" is defined by Lynch as a "quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape, color, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment"<sup>19</sup>.

The "imageability" is also based on what Lynch calls "elements": symbolic devices that can evoke the memory of a place. These elements were then used by the urban planner to realize the "mental maps". A few years after, in the famous publication of "The image of the city", Lynch began studying the aesthetic problem of highways and in particular the relationship between space perception and the fast movement of the driver.

After several years of studies and experiments on the perception in motion, a book was published by MIT Press, entitled "The view from the road"<sup>20</sup>. In this publication, in particular, is elaborated a graphic language to record fast moving speed sequences on motorways. The need to formulate a new language was motivated by the fact that, although it was possible to produce film sequences of motorway routes, these did not have the characteristics of human eye vision.

At design stage, language would be useful in avoiding the construction of expensive physical models or the elaboration of complex processing methods of technological image. The system intended to record and note the perception of space and motion, taking into account three main features: the apparent movement of the observer, the apparent movement of the visual field, and the spatial characteristics of the crossed places. For each of these features a symbology was developed in order to communicate the different aspects perceived in motion. The definition of spatial features was the aspect that required the greatest amount of new symbologies, which referred to the definitions that Lynch had elaborated in "The image of the city".

## Methodology

Digital representation helps now to rewriting researches in a new form, using the potential of combinations of calculation to find scientific data and to analyze new conditions but also new fields of applications.

On the basis of the analyzed experiences and to carry on the research of Kevin Lynch, we developed a tool for visibility analysis in Grasshopper, parametric plug-in for the Rhinoceros modeling platform. Rhino is widely used among architects and designers today. Our tool can be used to analyze models directly in Rhino, and dynamic changes can be made and revised models analyzed by the tool in real time.

The algorithm was developed with the support of Dr. Antonello Di Nunzio (on the basis of his example published on the Hydrashare-GitHub platform) in order to be able to carry out a visibility analysis and a quantification of the space perceived by both pedestrians and drivers. The analysis can be performed both in static form (for all the points of the path) and in dynamic form (point by point). The algorithm generation process can be subdivided into the following steps:

- preparation of geometries, definition of the path and number of steps;
- realization of the visual cone;
- realization of the car and positioning of it along the path;
- switch between static and dynamic analysis;

<sup>18</sup> V. Andriello, Kevin Lynch e la cultura urbanistica in Italia, in "Urbanistica", 102 (1994).

<sup>19</sup> K. Lynch, *The Image of the City*, MIT Press, Cambridge 1960.

<sup>20</sup> D. Appleyard, K. Lynch, J.R. Myer, *The view from the road*, MIT Press, Cambridge 1964.

- use of the Ladybug View Analysis component;
- exportation of frames;
- automation of the process.

As for the visual cone of the pedestrian, in the horizontal plane, the binocular field of view extends some 120°.

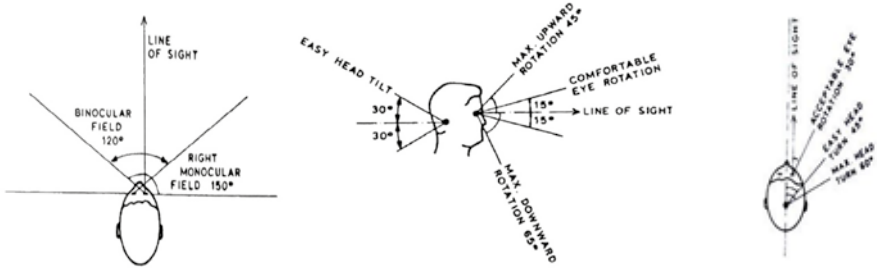


Fig. 2 Geometrical condition of view

Vision is sharp only over a fairly small area directly ahead. So, eyes need to be turned to focus on objects outside the foveal area. Eyes generally only turn by about 30 degrees before the head is turned, which can comfortably give a further 45° view to either side.

In the vertical plane eye movement is comfortable within 15° above or below the horizontal, although the eye can see up to 45° upward or 65° downward if necessary. On the other hand, head can easily incline 30° upward or downward. Thus, by movement of head and eye, the driver can have extended direct field view.

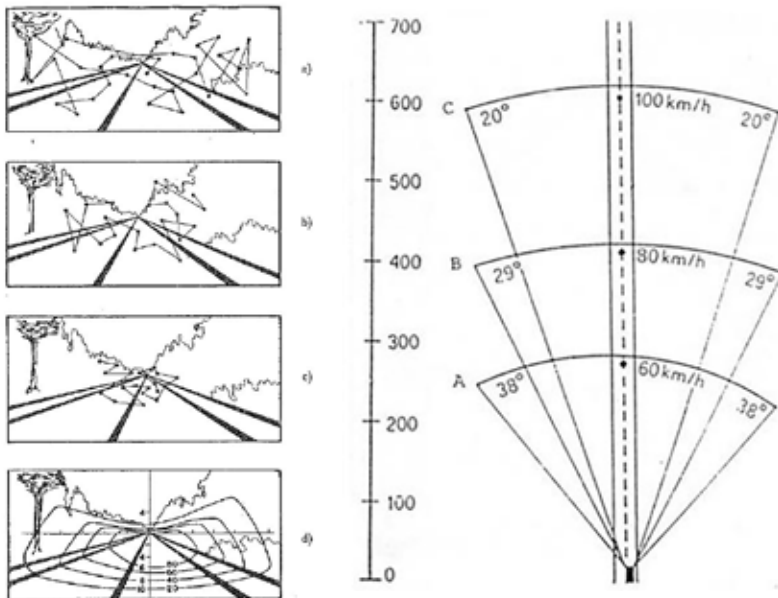


Fig. 3 Geometrical results of succession of point and visual cone depending to variation of speed

Under dynamic conditions (visual view of the driver) the amplitude of the visual field must be correlated with the travel speed. Since the focusing of an object is not instantaneous (in a normal subject it takes approximately 0.9 seconds), the driver will tend to shift the attention to more distant objects as the speed increases, so that they may be regarded as fixed and may represent a fixed or otherwise low-speed reference point with respect to the vehicle; this will allow him to neglect the vision of those items placed laterally to the cabin that would have high relative speeds and focus his attention on some useful points as a reference for driving.

The field of view can be expressed by two sizes:

- the distance of accommodation, that is the measured distance between the eye of the observer and the element on which the image is fixed;
- the amplitude of the visual field, that is the size of the visual cone on which the driver focuses its attention.

Both sizes that define the field of view in dynamic conditions are variable with speed. In fact as the speed increases the driver is guided to look at points further away because, due to the speed, the field of vision is reduced at the same time. Graphically, the vision of a pilot, from a car that proceeds at 60 km/h, is focused on the first 300 meters and has a 38° visual cone; if the car is at 80 km/h, the driver is led to investigate the space up to 400 meters ahead and the optical cone narrows to 29°; when the car reaches 100 km/h, the surveyed space arrives up to 600 meters ahead and the visual cone is further narrowed to 20°; and so on by increasing the speed.

The engine of the algorithm is the View Analysis component of the Ladybug that allow to evaluate the visibility of input \_geometry from a set of key viewing points.

As far as dynamic analysis is concerned, it returns a colored mesh which express the points which are:

- visible (100%);
- not visible (0%).

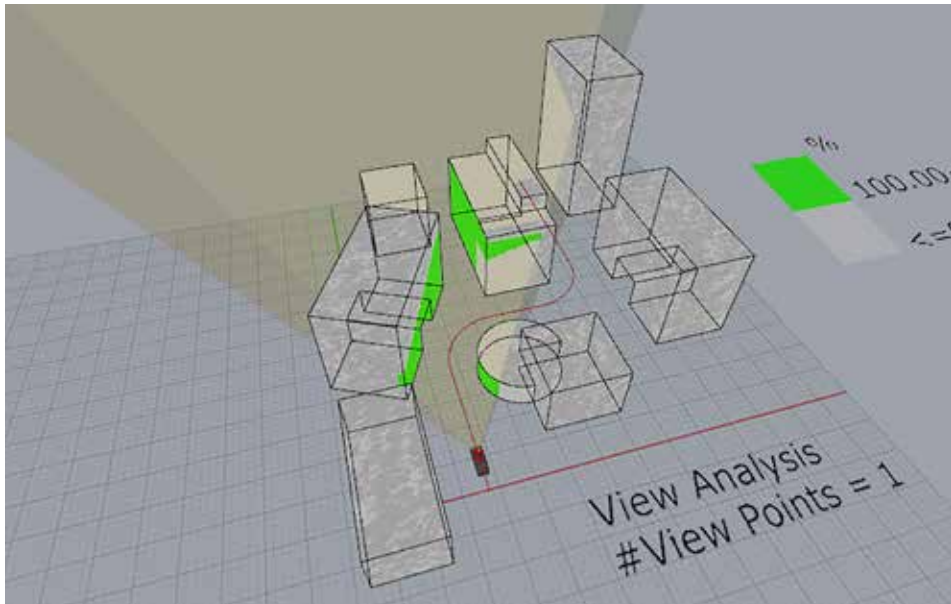


Fig. 4: Parametrical analysis of visible objects

The View Analysis component outputs an averageView that is the average percentage of the \_viewTypeOrPoints seen by all of the test \_geometry. It is also possible to quantify the visually perceived space calculating the area of the mesh that indicates the space viewed through the Ladybug\_Mesh Treshold Selector component that provides as output areaMeetsThresh, that is the area of the mesh in square meters. It is also possible to export images from Rhino's canvas and automate that process through the fly component. Additionally, through the Set the View component, it is possible to set the first person view from inside the cabin.

In regard to the static analysis, it returns a colour coded mesh based on the number of points visible from each test point.

To use the script, follow these steps:

- set the visual field;
- launch the analysis (static / dynamic);
- launch the imagePath component to export the frames;
- launch the Ladybug\_fly component to automate the process;
- turn on the first person view for any check

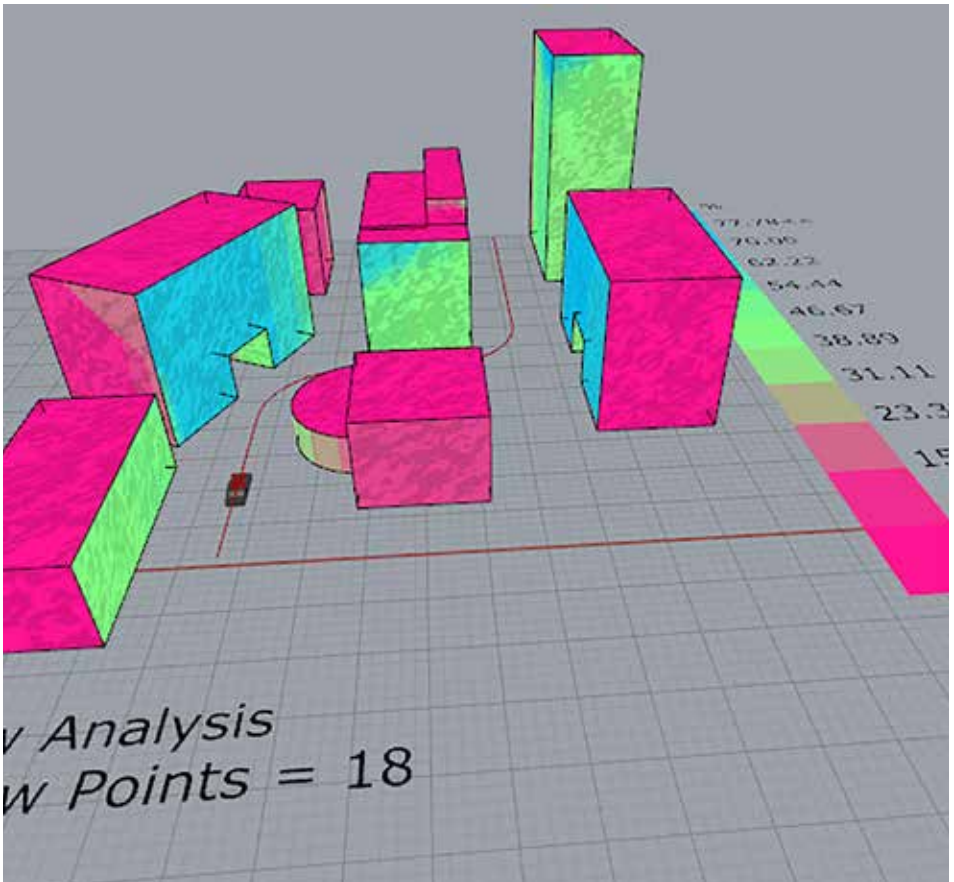


Fig. 5: parametrical analysis of the dynamic view

## Conclusion

The analysis of the visual perception process, by studying the laws defined by Gestalt's psychological school and by the methods of notation of vision in motion developed by Kevin Lynch, provided the basis for the construction of the generative algorithm that guaranteed to quantify perceived space. Through the development of the algorithm, it is possible to overcome the limits of Lynchian research, which could only answer the questions "what do I see" and "how do I see it". And it is the basis of a scientific landscape analysis.

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## Rethinking the identity of ‘new’ advanced Mediterranean rural-coastal landscape

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### Abstract

In the early ‘900 Louis Sullivan, arguing the architectural principles of modern society, he said «Form ever follows function», but some decades after Philip Johnson turned it into «Form follows form, not function» and then again with Richard Rogers this statement was changed in «Form follows profit, is the aesthetic principle of our times», but it was clear to James Timberlake that this consideration needed some additions to be true in the contemporary world «[...] many other things now come into play:

environment, costs, time, qualitative aspects of the building’s materiality. This is a very different alchemy than form following function». In the construction of a building, the elements to consider are varied, different and changing over time, the same principle extends to the planning and development of the city, with the substantial difference that in the architectural design is possible to govern, in a more or less defined way, all elements that make it up, but when it comes to draw possible guidelines for the development of a city, the process is not easy or predictable.

Therefore this brief reflection does not pretend to explain these complex dynamics, but rather to focus on current and revolutionary phenomena that the progress of technology in contemporary society and the close connection with the development of primary activities are shaping new perspectives in the evolution of rural suburbs that are emerging nowadays.

### Rethinking the Mediterranean identity

Over the last decade the interest in the identification of development scenarios for the local contexts, has renewed into the model of macro-regions, which encompass areas related conceptually to each other beyond the geographical localization. One of these is the Mediterranean area, intended as a theoretical concept that interprets the idea of “Mediterranean character”.

The Mediterranean multi-city is the place of relationships and exchanges among different landscapes and cultures, “contaminated” by the wide networks of relationships that touch the shores of this sea, with ideas, styles, techniques and knowledge, which spread its effects along the whole coastal areas. Thanks to this biodiversity along the Mediterranean coasts there are very heterogeneous urban centres, they keep changing and evolving with a continuous territorial consumption, which today has led to outline «the global shape of the Mediterranean city» as defined by Cardarelli (Cardarelli 1987, p.84).

<sup>1</sup> Sullivan L.H. (1896). “The Tall Office Building Artistically Considered”. Lippincott’s Magazine (March 1896): 403–409

<sup>2</sup> Rogers R. (1991) ‘Form follows profit’ is the aesthetic principle of our times. in Times 13 February 1991

Today, therefore, we are faced with a situation in which the cities of the coast for some aspects have been consolidated thanks to decades of urban sprawl, for others, however, especially where the urban contexts has occupied spontaneously peripheral areas. The so-called sprawl towns, superimposing over the surrounding rural territory have given way to formless and chaotic expansion of the urban core over the years. Since the Seventies the research, about the growth and decline processes of the cities, were not limited to an only urban perspective, but have investigated all the economic globalization phenomena that incorporate and act on urban spaces, identified «... not only such as object of study, but also as a strategic reference for the theory of a wide range of social, economic and political processes in the current era» (Sassen 1997). Faced with this complex context, which is the present-day architect's position towards the planning of this 'new' Mediterranean countryside farmland in terms of production and environmental development? The interest to focus on rural and coastal Mediterranean cities is not, however, a novelty, already more than a decade ago in the objectives of European projects (eg. 'Europe 2000+') the Arco Latino had been identified as one of the eight 'interested regions' to the development programs of "transnational perspectives of the European territory".

Among the issues it reads: "in the 80s, the demographic change has stabilized or even reversed for natural demographics reasons or for immigration of 'new rural dwellers' coming from the urban space. Rural areas have been able to attract inhabitants, but also economic activities, because of their proximity to highly urbanized areas and their tourist character"<sup>4</sup>

Through these ongoing evolutionary processes, the Mediterranean coastal cities are – on one side - consolidated by decades of immigration and urban sprawl – and on the other, instead - in a complete change and difficulties to recover its own identity, especially where these have expanded and occupied chaotically peripheral areas by infrastructures and large commercial-industrial districts. They therefore are outlined, along the border bow, real spread cities, where the rural land has given way to a formless appropriation of the urban fabric.



*Fig.1 La Rocalla: greenhouses close the urban area, Roquetas de Mar, Almería, Spain, 2011 - source: ph. Luispihormiguero (CC0)*

<sup>3</sup> Castells since the seventies highlights the importance of studying the city beyond its borders. cfr. Castells M., *Laquestion urbaine*, François Maspero, Paris, 1972, trad. it.: *La questione urbana*, Marsilio, Venezia, 1974.

<sup>4</sup> one of the objectives for the development of rural areas given in the report 'Europa 2000+' - [europa.eu/rapid/press-release\\_IP-94-752\\_it.htm](http://europa.eu/rapid/press-release_IP-94-752_it.htm)

Do not forget that agricultural and rural dimension of the Mediterranean has been - and still continues to be - a central and essential element for the economy and society of this landscape. The wealth of natural resources and the diversity of landscapes make the Mediterranean a unique echo-region, however, the industrial development, the incessant building – in Italy, for example, from 1971 to 2010, about 5 million hectares of agricultural land were urbanized – , the unfair social habits, the constant increase of pollutants and the progressive reduction of primary resources, such as water resource, continue to undermine this fragile ecosystem.

Despite international efforts, made in the last thirty years or so, in order to protect and preserve this unique landscape, it continues to deteriorate as a result of increased pressure on the environment. The impact of climate change, the threats to the biodiversity of the area, the soil erosion and the emissions, caused by the energy consumption, are strong evidence of the increasing vulnerability of this space. To it is added the serious phenomena of drought and the desertification processes with dramatic consequences for the rural territories. To aggravate the conditions and disparities between the shores of this sea, there are also the social dynamics – as the scourge of poverty in the southern of the Mediterranean farmlands – the deficient collective infrastructures (access to water, access to services, access to education) – the lack of efficient management policies – such as law organization of producers – the weakness of civil society and the logistical gaps<sup>6</sup>

So, the need to “identify the common basic elements to frame cities, regions and Mediterranean networks into a unified perspective” – in order to – “define the models compared with the theoretical ‘global’ models and process, therefore, an urban theory that can combine the achievements of modern planning with the concepts and experiences related to the Mediterranean specificities”<sup>7</sup> it’s an ambitious purpose as much as complex.

The risk of ‘forgery’ – and implementation of approximate general theories about the urban planning – represents a possible and dangerous element and it’s necessary to must be careful. Even within the community strategies that incorporate macro-areas and ‘multi-cities’, it must maintain the principle that “each area is still a locus solus” (Rossi 1972, p.10) with an inherent cultural, physical and local biodiversity and - therefore – it’s difficult to frame it into common replicable models.



Fig.2 Rural periphery of Granada, CC0, by PactoVisual – Aerial view of the Vega of Granata

<sup>5</sup> datas Mipaaf – Eurostat in collaboration with the researches ENEA and Ispra

<sup>6</sup> reflections treated in the article of Bertrand H, Lacirignola C., Dieci pilastri per l’agricoltura del mediterraneo, Centre international de hautes études agronomiques méditerranéennes, Agriregionieuropa anno 3 n°10, Set 2007

<sup>7</sup> reflections treated in the publication of Giuseppe Pace, Modi di pensare e vedere la città mediterranea. Istituto di Ricerche sull’Economia Mediterranea

<sup>8</sup>Rossi A., L’architettura della Città, Marsilio, Venezia, 1973, p.10

To approach the study of this Mediterranean landscape in a consistent and non-reductive way, it is inevitable to understand that cannot be only one 'method' of planning, which can correlate every single aspect that makes up the city, without generating a superficial planning and the danger of an approval of the territories.

It is therefore clear that briefly framed the features of this complex landscape – as previously mentioned – “define the models compared with the theoretical 'global' models and process, therefore, an urban theory that can combine the achievements of modern planning with the concepts and experiences related to the Mediterranean specificities” it's a complicated goal, but nevertheless, if within the global framework fit realities as socially, culturally and economically different as the countries of the north and those of the southern Mediterranean the result can only belong to a purely theoretical sphere.

### **The 'new' advanced rural-coastal landscape**

In order to 'restrict' the context within which this paper aims to investigate to provide new ideas and discussions it will focus on the countries of the Northern Mediterranean, that is the Latin Arc (Spain, France, Italy).

This coastal area is particularly interesting because it has been, and still continues to be, subject of significant changes, mostly due to the incessant urbanization brought caused by the Industrial Revolution, but also to the difficult socio-cultural integration – mostly arisen by the heavy immigration, to the most critic recent economic conditions and the impact that globalization and the enormous technological advances have contributed to the development prospects of these realities.

The advent of mass technological systems, new processes of governance in urban planning, awareness of strategies to recycle degraded urban spaces and the integration of these in the community, have outlined an epochal paradigm shift, the antithesis of urban-rural or metropolitan-periphery is therefore largely outdated.

The small and medium rural Mediterranean today's cities are the result of the evolution of these phenomena and the various strategic planning processes of the twentieth century, which have radically changed the balances and the models of life in the rural areas.

Many of them, however, were able to reinvent themselves and adapt to the new requirements:

- socio-cultural: promoting inclusion and social hybridization, such as the case of *Jardin de Perpignan*. Since 1997, the 45 companies in the area and more than 120,000 inhabitants in the south of France, started in Perpignan – one of the major agricultural town on the French coast – an agricultural development program, favoring the short chain and getting the creation of a recognizable brand in 2006;

- environmental: focusing new attention to issues relating to the consumption of resources and preservation of the landscape, as in the case of the Vega of Granada, for a long time it was the center of protection plans and programming strategies. In 2001 the drafting of the *Plan General de Ordenación Urbana de Granada* has tried to solve the problems of the agricultural areas of the Vega proposing regeneration policies. In 2006 and in the following years started the proposal for the creation of the *Parque del Milenio* in order to safeguard the agricultural areas as an heritage of the city;

- economic: aiming to improve the seaside activities, as the *Côte d'Azur* in the southern France which is one of the leading examples of enhancement of the Mediterranean coastal-tourist industry. Famous all over the world this area has been able to promote itself, maintaining a

<sup>9</sup> at national level see the Rome Treaty of 1957, signed with the aim of promoting the harmonious development of economic activities, by establishing a common poli- cy in the sector of transport and agriculture.

<sup>10</sup> PGOU Plan General de Ordenación Urbana de Granada - [www.granada.org](http://www.granada.org)

specialization in the agricultural sector, especially the floral and horticultural business (it is produced in this area about one-third of the national production) and wineries activities, with over 19 productions DOC;

- agricultural: adapting to the rural development programs, such as the *Huerta of Valencia*. The *Plan de acción territorial de la Huerta de Valencia* is linked to the European territorial strategy, based on: polycentric development, structuring of dynamic, attractive and competitive urban regions and a conservation of the natural and cultural heritage. In Dobris report, the Huerta was defined as one of the last six experiences of existing Mediterranean gardens on the edge of the urban centers in Europe.

The strong rural character of these areas has, therefore, enabled many cities along several coastal portions to consolidating its economy on agricultural production, since the mid-twentieth century onwards, and to compete nationally and internationally in the global market with quality materials (for example, the Andalusian coast, has a considerable export of fruits, vegetables and olive oil, or the Ligurian Coast, with the export of flowers and pot herbs).

Within a framework that consider the contemporary phenomena, the renewed interest about the reoccupation of the farmland, or 'rurbanization', to quote Sorokin, Zimmerman, and Galpin, it was a concept that significantly changed the relationship in the urban-rural dichotomy, approaching the concept of rural-urban continuum. This process will have to be thought so that it can adapt to future changes where the perception of space, context and environment, will be radically changed «The city, in fact, seems less and less topical and territorial and more and more teletopical and deeply extraterritorial, in which central and suburban geometric notions are losing their meanings» (Virilio, 1996).

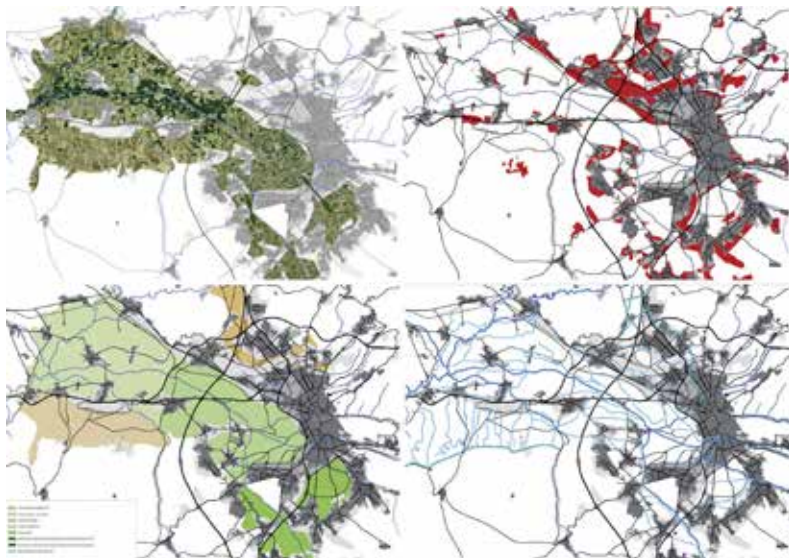


Fig.3 – Plan Especial de la Vega de Granada – [lemapaisajes.wordpress.com](http://lemapaisajes.wordpress.com), estudi per il Plan Especial de la Vega de Granada

<sup>11</sup> Andalusia, on the whole, has planted more than 1.5 million hectares of olive groves and produces between 500,000 and 1,400,000 tons of olive oil annually, about 35% of world production, half of European production and 82% of the Spanish production. In addition, in the Andalusian countryside it is concentrated about 20% of European production of oranges, lemons and grapefruits - [www.juntadeandalucia.es](http://www.juntadeandalucia.es) - [www.caae.es](http://www.caae.es)



Fig.4 – Côte d'Azur, Coast of Nice, CC0, by Christina, aerial view of the turistic coast of Nice

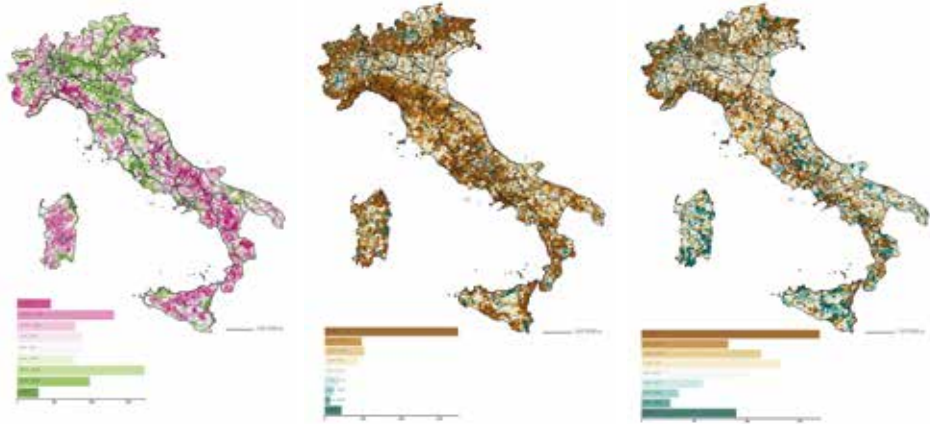


Fig.5, Percentage of the resident population between 1991 and 2011 - from processing research PRIN 'Post-metropolitan territories as emerging urban forms: the challenges of sustainability, liveability and governability' [www.postmetropoli.it](http://www.postmetropoli.it). At the national level, it is quite clear that in the period between 1991 and 2011, the percentage of the population has decreased in metropolitan urban areas while it increased in the peripheral areas. Fig.6 Change of the SUA utilized agricultural surface between 1982 - 2010 - processing PRIN research 'Post-metropolitan territories as emerging urban forms: the challenges of sustainability, liveability and governance' [www.postmetropoli.it](http://www.postmetropoli.it) Fig.7 Change of the SUA utilized agricultural surface between 2000 - 2010 - processing PRIN research 'Post-metropolitan territories as emerging urban forms: the challenges of sustainability, liveability and governance' - [www.postmetropoli.it](http://www.postmetropoli.it). At the national level, it is quite evident that comparing the two periods of time considered, in the last decade increased considerably the new agricultural areas, many of which are close to the coast

The progressive rapprochement to agricultural and rural dynamics is a phenomenon that affects especially the younger generation in recent years. It is constantly increasing, in fact, the number of under-30s who, despite the high educational attainment levels, choose the agricultural activity, consciously leaving the prospects of underground work to move in rural suburbs and reinvent themselves in the role of entrepreneurs-farmers, probably prompted by the economic crisis of this decade too.

Just think that only in Italy in 2013 were founded more than twelve thousand agro-startup and designed a huge amount of agricultural Apps<sup>12</sup>, trading platforms<sup>13</sup> and new technological devices and services developed for agricultural purposes<sup>14</sup>.

The amazing potential that today's technology offers, recently found a fertile development in the agribusiness (from the digital agronomist to the Big Data for farming) becoming an indispensable element for optimize the productions, reducing costs and better protecting the environment thanks to monitoring and automation devices and the awareness of this recent class of young farmers-entrepreneurs (commonly nicknamed farmers 2.0) with a strong propensity towards progress and innovation.

The technological revolution that affects the rural peripheries and the agricultural sector is indeed the result of the now inseparable existence of technological devices entered permanently into the everyday life of each of us, an extension of the same person, and as such, they should be considered a key element in dealing with governance issues related to the rural development. By promoting the innovation of tools and space in these new agricultural suburbs it will be possible to align the objectives that the Mediterranean agriculture must impose oneself to become globally competitive, aiming to promote environmental sustainability,<sup>15</sup> energy efficiency and the enhancement of production eco-friendly processes<sup>15</sup>, keeping the identity character of this coastal landscape but approaching new prospects for sustainable development.

*“It's useless to decide whether Zenobia is to be classified among happy cities or among the unhappy city. It is not in these two species that makes sense to divide cities, but in others two: those that through the years and the changes continue to give shape to the wishes and those in which desires either erase the city or are erased.”*  
(Calvino, The Invisible Cities)

<sup>12</sup> many famous agro-apps are: Rural Hub (italiana), Amber Agriculture (statunitense), Dow Agro (italiana), Cropp (italiana, in collaborazione con la NASA), Agri Precision (brasiliana), Farmware (australiana), Farm at hand (canadese) etc. - [www.farmingwithapps.com](http://www.farmingwithapps.com)

<sup>13</sup> many of new platforms presented at the event SIMA from 26 February to 2 March 2017 at Park of Exposition of Paris-Nord Villepinte: 365Farmnet.com – Easys- tocktyre.fr – Meshectares-com – Sencrop – VoltreMachine.com etc. - [www.novagricoltura.com](http://www.novagricoltura.com)

<sup>14</sup> many agricultural devices of new generation: Airinov (sensor drone of growth measuring), Carbon Bee (instrument for the measuring of the plant health), ConnectAgri.fr (for the management of agricultural tools), Naio Technologies (agricultural robots), Visio-Green Agriculture (related solutions: sensors, data analysis, app...) etc - [www.novagricoltura.com](http://www.novagricoltura.com)

<sup>15</sup> objectives discussed at the conference VI ICAS 20012 International Conference on Agricultural Statistics a Rio de Janeiro

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- [www.europa.eu](http://www.europa.eu) - European Commission Press Release Database



# **The representation of the territory through the short forms of communication**

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## **Abstract**

In a complex and multi-faced reality like today, characterized by a communicative environment of languages and forms which are contaminated, and they hybridize to each other, the role played by the representation, understood in its confirmative value, in promotion and enhancement of cultural and landscape heritage, is of primary importance.

Visual communication, characterized by a report of scientific-methodological knowledge of various kinds, allows the activation and interaction of skills from different fields in order to pursue the common goal of the valuation of assets, integrating tools and lexicons and designing new systems. The paper wants to emphasize, using case studies of different nature, referring in particular to the urban environment, the established presence of forms of communication to simplify territorial reading, as well as to facilitate its use.

Specifically, it proposes a focus on short forms of communication; in particular, it wants to emphasize as they are fundamental for the landscape reading itself, for the understanding and knowledge of all its parts, but above all, for a communication accessible from different types of users.

The case studies that specifically means to assess, refer to the representation of the territory, of the services and cultural heritage in relation, particularly, to the tourist enjoyment.

## **Introduction**

“Cultural heritage refers to all the material and immaterial estate of individual and collective interest and enjoyment which are the expression and testimony of human creativity, the evolution of the landscape in its interaction between the natural element and the work of man.” From this definition given by Vlad Borelli, we can see the process of opening and projecting towards an outside world that has been interested in the last decades those we can identify as “the places of culture”.

## **Methodology**

The process of changing and broadening the focus of action is determined not only by the bodies responsible for the conservation of heritage, but also and above all by the users system, with their different and growing demand of cultural products, which increasingly has to take into account a growing demand for entertainment, and which takes place in different times and ways than in the past. The changes have produced a number of effects, including an increased interest of cultural institutions in the whole spectrum of visual communications, capable of creating a true connective tissue and exchange between the entities and the broader user group, just as with the creation or adoption of a common language, which allows for a possible dialogue between the two parties.

Specifically, the design world has always been fully in the field of cultural heritage: mainly deals

with systems of knowledge, dissemination, communication and promotion of estate; design is historically associated with the ability to design exhibition systems and, at present, the development of knowledge, study and communication technologies (3D survey, multimedia reproductions) as well as the coordinated image of museums, archaeological sites, places of culture. Only recently it is acknowledged that these activities also have management and strategic aspects, and that the role of design for cultural assets has evolved in management aspects and also in the design of services and infrastructures related to cultural heritage, both relative to the dimension of user's enjoyment and understanding (for example, realization of cultural and didactic itineraries and events), and various promotional activities (such as merchandising).

The meeting between the various disciplines within the design world and the cultural sphere entails relatively recent times and coincides with a profound change marked by the entry into force of a series of laws which resulted in substantial transformations not only in management and enjoyment, but also in valorization, conservation and protection of cultural heritage.

An example may be given by the entry into force in 1922 of the Ronchey law, which introduces "additional services", namely sales and catering services, to mark a first timid but decisive step towards a progressive opening up of cultural institutions, so attentive to the needs and demands of their users, not necessarily of a strictly cultural nature.

In this context, we must observe how not only the ways of acting on cultural institutions and users have changed, but their way of interacting, relating, dialogue, through a language that uses as many words as the multiple tools and strategies of visual communication. This explains why the new systems adopted by cultural institutions are increasingly attentive to the demands of the public, and also because the visual identity -which we can define in the first instance as the communicative sphere that encapsulates and describes the institution's identity, and subsequently like the interface between the institution itself and the outside world- is a tool that is applied more and more widely and with greater awareness.

Thus, it has come to a conscious appreciation: it has witnessed a strategic revaluation of cultural heritage, which has led to the adoption of an integrated cultural design perspective and the elaboration of various enhancement actions, mainly aimed at the creation of social value and economic value of cultural heritage, where social value is generated by opportunities for the enjoyment and experience of estate, and economic value is linked to the ability of estate to build synergistic and sustainable relationships with the territory and its productive activities.

The history of the museum offers an interesting reading of the dynamics of understanding cultural heritage and their enhancement in relation to the concepts of conservation and fruition, and is therefore a fundamental part of the approach of the culture of design for cultural heritage.

The birth of the museum originated in the concept of aesthetics of antiquity, which had favored the emergence of private collections, with the purpose of seemingly ostensibly demonstrative or exclusive aristocratic enjoyment. Only from the nineteenth century, the collection conceived and presented in the museum, begins to assume the symbolic value of an encyclopedic and universal flavor associated with a collective and public historical value, and presupposes educational and delightful purposes.

From the concept of a simple deposit, therefore, it goes to the concept of exposure and communication. The extension of fruition to broader public categories required a rethinking of the container on the one hand, and the order of sorting on the other, thus the presentation of the works and the methods of visit. Key aspects of the process of enhancing works of art are three context conditions: a balance between the new function of the estate and the quality of the artwork; the individuality of every work, which decontextualized requires a precise position that can reveal its history; and the need to make the visit a unique experience, characterized by discoveries and interpretations of works.

The narrative corresponds to a sort of artifacts presentation framework, which interacts with the active/observer element and which develops mainly through the concepts of resonance and wonder. The concept of narrative rendering (inside and outside the museum) is the first paradigm of enhancing cultural heritage.

This attitude, evidence as the role of design in the cultural heritage system, assumes an expansive approach to valorization that can trigger complex processes of integrated design of estate, contexts and communities. Cultural heritage is thus legitimized through the valorization of its social and collective sharing, which is mainly and historically identified, at the time of fruition.

The collective fruition of culture has evolved over time, in parallel with the consumer society, from being a mass aesthetic consumption of cultural products and services, a result of the democratization of the culture of industrialization, to the enjoyment of cultural experiences typical of the society of access to culture. In this new context, the concept of cultural heritage is also reconfigured, to which, in addition to the traditional cultural heritage, new typologies are added, ranging from immaterial, to cultural products and activities; and in response to a growing demand for stratified cultural goods, the offer in terms of local services, activities and tourism is also greatly diversified, which must necessarily be designed within an exchange and participation dimension.

## Conclusion

To better understand the vivid transformations that involved the entire system of cultural heritage in terms of management and enjoyment, we take into consideration some key examples: first, the MoMA (Museum of Modern Art), Alfred Barr Jr, first director Of the museum, is to define it as “a laboratory to which the public is invited to participate”, thus disrupting the usual relations of fruition of the good, and immediately establishing the fundamental role played not only by the museum itself, but also as a privileged place of experimentation, but by the users, called to be far more than passive observers of a process. Barr is surely the first to capture the importance of a strong and easily recognizable corporate image: the brand assumes, in a system of visual identity, an absolute leading role as defined by Franco Fortini “not anymore a simple word, but an object word, indeed a word person.”

In addition to the visual identity project, the museum recognizes development on the front of the didactic aspect, characterized by itinerant exhibitions, conferences and guided tours.



Fig. 1 Identity system for the Museum of Modern Art in New York, designed by Pentagram

The most recent example is the project of visual identity for the Archaeological Superintendence of Pompeii, realized by the Zelig studio, and winner of the Compasso d'Oro 2004.

In relation to the purpose of the promotion action, the project is oriented towards the communication and knowledge activities of the cultural heritage. The agency solved the claims by offering a brand-unmarked label to the iconography of the places, drawing on the culture of the calligram, and concentrating on the evocative element of the “seal” declinable both for the administrative institution and for the five Sites, with the intent of focusing attention, today focused mainly on Pompeii, towards the other four sites that still do not enjoy the same reputation. The Mark is thus an elliptical sign, which figuratively appears to encompass the various sites that make up the archaeological circuit, to which the logotype placed at the base of the pictogram is added, which lists in a list the names of the five sites, in which from time to time, the name of the site in question is highlighted using black color, while the others are transcribed in gray.



Fig. 2 Corporate Identity designed by Zelig, Client: Archaeological Superintendence of Pompeii, 2004

The identity of a “cultural” place is strongly determined by a site, an architecture, programming and even a particular collection. The role played by the design discipline, in its meaning of communication design, with particular reference to the world of graphics, layout and short forms of communication, is to act as a trait d'union between these elements, or between the content and container, between the permanent collection and the temporary events.

Design is also able to translate the specificity of a site into a visual language that confers it identity and can then be used in different media. Landscape, architecture, object and graphic design create a single element, an inseparable one. (Ruedi Baur)

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## Welcome back

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### Abstract

After an intense strike of the routine and the *status quo*, such as a war or a big financial crisis, something slightly incomprehensible happens: there is a turning back in styling. Stronger than a simple reference, deeper than the (easy) search for an inspiration: maybe it's for the cocooning effect, either it's because after a big challenge, what remains is the worth of History and a turning back to the values of the past. But, is the will to refer to a real value, or simply the desire to take refuge in reassuring certainties? Is it the fear for what is unknown in the future? Is it, indeed, because of the disappointing effect of the present? From the design point of view, the process is extremely clear. A product, a style that has already proved its validity looks a good investment, moreover if all the researches and the activities connected to the design development are already done. The fact is only to give a new touch, refresh the enamel. Where is the new, if there is space for it? While the *style mentioning* requires the mastering of the period itself and in addition demands for a whole creative design process, the *quoting renewal* seems and presents itself as the shortest and the easiest way. There is a big issue and a big difference between the worth of history, transposed in the contemporaneity, and the mere – and barren – use of the past.

Giving an answer and an evaluation is awkward and may be hard. This paper wishes to investigate the presence of past styles and their use as an orientation in contemporary production, for and in objects, artefacts and graphics, as a trend followed for the more diverse reasons.

### Introduction

*By N. Sorrentino*

After an intense strike of the routine and the *status quo*, such as a war or a big financial crisis, something slightly incomprehensible happens: there is a turning back in styling.

The climate of uncertainty and confusion, as an effect of the heavy geopolitical and social moment, the many conflicts derived directly or indirectly with their consequences, alongside to the severe economical crisis occurred for nearly a decade, have caused an impact on contemporary society and on current trends in customs and tastes, and in regard to the design and to everything that relates to the furniture and the so-called *home decor*.

Especially in these arenas, as well as in fashion, it seems to be realized as predicted by James Hillman: “*Old*, actual or apparent, will save this world too thirsty for *new*”<sup>1</sup>: the reference to the past, precisely the ‘old’, spreads pervasively, contaminating the contemporaneity with modes and guidelines inspired, alternately or contemporarily, by decades of the last century.

<sup>1</sup> See A. Fiorentini, “Vintage ergo sum. Il fascino del passato e la moda oggi”, in *Vintage. L'irresistibile fascino del vissuto*, Silvana Editoriale, Milano, 2012.

Stronger than a simple reference, deeper than the (easy) search for an inspiration: maybe it's for the cocooning effect, either it's because after a big challenge, what remains is the worth of History and a turning back to the values of the past.

Although history certainly does not seem to have been forgotten, however a similar tendency observes some attitudes that follow a various conception of the flowing of time and past events, perceived and considered from a perspective very different than how we were used: after the research phase of the 'new', as a hallmark of an era in opposition than ever before, on the other hand the reference to it seems in many cases have lost that solid base character in the realization of projects that, discounting the historical fact, are on a *continuum* between past and future.

"The study of history and evaluation of the evolution of the courses offers food for thought for a timely and substantial cross knowledge and allows [...] creating an overview [...] to which refer in time and with which confront, to better understand processes, methods and changes."<sup>2</sup>

On the other hand, as Francesco Trabucco warns recalling the teaching of Marco Zanuso - who used to compare project activity to a "throw their creativity beyond history"<sup>3</sup> - "you can't try to be beyond history if you don't know it"<sup>4</sup>, because it is only its knowledge that can lead to an understanding "wide and transversal of actuality"<sup>5</sup>, making design an activity somehow brave and revolutionary, which contains in itself "an idea of future"<sup>6</sup>.

In this sense, we express the value of history as "inevitable screen"<sup>7</sup>, through which "something remains, and something falls into oblivion"<sup>8</sup>, and which shows clearly to which instance refer to, so tracing the path ahead and the goal to reach: as a result, the recovery as a model for certain periods in the past, and not others, will therefore be considered.

Then again, in the word itself, *value*, is inherently containing the idea of recognition of some importance, for which something deserves to be highlighted than the rest.

Nonetheless, in the current cultural landscape, the intention is to refer to a real value, or is it simply the desire to find refuge in reassuring certainties? Is it fear for what is unknown in the future, or instead stems from a sense of disappointment compared to this latter?

In the third millennium scenario, dominated among other things by the emotional relationship with time and the idea that it 'creates style memory', searching of historical landmark has taken on the featuring traits of Post-Modernity. If, in fact, ever more frequent recourse grows for the styles of past ages, its increasingly wide spread seems to fit yet even greater shallowness, which made it 'easy', 'skin-deep', 'weak', targeted more to nostalgic memories. These latter still desire to update and to renew the historical knowledge, possibly by reviewing its concepts and theories, into a promiscuity even semantics, that indiscriminately speaks of *vintage*, *rétro*, *revival*, restyling, reissues and so on. In particular, the latest two terms deserve here to dwell briefly, as they are in the broad sense both linked to the concept of reference to the past, conversely not having the same valence: according to the Oxford Dictionary *retro*, mostly used as an adjective derived from French word *rétrograde*, designates something "esp. of fashion, music, or design: characterized by imitation or revival of a style from the (relatively recent) past; (more generally) backward-looking, nostalgic"<sup>9</sup>, but only as far as style as an inspiration, but for all purposes of modern making. Slightly in contrast, the term

<sup>2</sup> See L. Chimenz, "Il valore della storia nel progetto contemporaneo", in A. Bertirrotti, *Psico-antropologia per il Design*, David and Matthaus, Serrungarina (PU), 2017, p. 318.

<sup>3</sup> See F. Trabucco, *Design*, Bollati Boringhieri, Torino, 2015, p. 76.

<sup>4</sup> *Ibidem*.

<sup>5</sup> *Ivi*, p. 77.

<sup>6</sup> *Ivi*, p.78.

<sup>7</sup> *Ivi* p. 27.

<sup>8</sup> *Ibidem*.

<sup>9</sup> Definition from the online version of Oxford English Dictionary, retrieved from <http://www.oed.com/view/Entry/241735?rskey=yZmLZz&result=2&isAdvanced=false#eid>, on 18/04/2017.

*revival* locates as “the action of reviving something after decline or discontinuance; restoration to general use, acceptance, popularity, etc.”, or, in the case of objects and works “the reintroduction of a style of architecture, furniture, etc., characteristic of a particular earlier period”<sup>10</sup>, coming from an era also significantly away from the current one, and therefore in partial disagreement with the definition given by Aldo Colonetti, who defines the revival as “awakening of public interest for a lifestyle or aesthetic bonded to a not too distant past (usually no more than half a century)”<sup>11</sup>. In those terms, then, the revival makes existing again a language no longer in use without replacing it in historical perspective, but rather keeping intact as much as possible its characteristics.

## Methodology

### For a historical positioning of the past in Modern Design

By N. Sorrentino

The search for references in the past is nothing new in recent years, but an attitude that has characterized, from the beginning of the modern age, art and architecture, until the youngest industrial production. It was indeed of Humanism and the Renaissance in Italy, the re-turn to the old as getting a new way of living, fruit of that economic and cultural ferment eager to leave behind the more recent past and to restore continuity with the ancient, seen as ideal paradigm reference.

Thus, it is in the context of the Industrial Revolution in England, and more generally in Europe in relation to the outcomes from French Revolution and Rationalism of the Enlightenment, that we witness again to return to the old, with a different, more mature awareness of its historical depth and distance from the contemporary world, not just merely temporal. It's the era of the so-called *revival*, during which, between points of contact and sensitive fluctuations, from shared premises but with intent and results diametrically opposed, there manifests the common matrix of the two main artistic currents of the time, on one hand Neoclassicism, and Romanticism on the other one.

The first one, in fact, looked back to antiquity idealizing it to the point that ‘Classicism’ became a privileged expression of the Enlightenment and the bourgeoisie, new leadership after the collapse of the old regimes: in this context, the applied arts, the production of which was going to be gradually modernised with the introduction of the first machines, they permeated the new taste, transforming the ancient language into a real ‘fashion’ and thus contributing to its spread.

One of the greatest examples in this regard are the different series of ceramics produced by Josiah Wedgwood, starting in 1769, the year of Foundation of its manufacture *Etruria*, that even in the wake of the enthusiasm aroused by archaeological finds of those years, took on the classic reference in shapes as decoration, interpreting and becoming in turn expression of the spirit of the time.

Around the same time, though with specific connotations in their respective national contexts, in Europe was stating what was called ‘Gothic revival’, which in England was linked closely to the creation of the Arts and Crafts Movement, and to the aesthetic theories of John Ruskin as well as the economic and social concepts of William Morris: to be considered as a real ‘return of the old’, and not a simple and nostalgic look at the past, the Middle ages – real or reconstructed – became the positive role model for the re-establishment of a more honest and cohesive society, with anti-industrial. Either way, as highlighted by Antonio Pinelli, it was reflected a willingness to “oppose to *facts* the *tradition*, or rather, oppose to the present reality a tradition, isolated as a fragment in the flow of the history and shown controversially as absolute value [...]”<sup>12</sup> that assumed ideal characters strive for.

<sup>10</sup> Definition from the online version of Oxford English Dictionary, retrieved from <http://www.oed.com/view/Entry/164908?redirectedFrom=revival#eid>, on 18/04/2017.

<sup>11</sup> See A. Colonetti, with B. Masella and D. Moretti (Eds), *Glossario illustrato di Design*, Istituto Geografico De Agostini, Novara, 2003, p. 174.

<sup>12</sup> See A. Pinelli, “Dialettica del *revival* nel dibattito classico-romantico”, in G. C. Argan (Ed), *Il revival*, Mazzotta, Milano, 1974, p. 57.

As in the thought of John Heskett, “In Britain, the cradle of the Industrial Revolution, figures such as John Ruskin and William Morris established a critique of industrial society that had a profound effect in many countries. [...] The outbreak of the first World War in 1914, however, was such a bitter reminder of the savage power unleashed by modern industry that nostalgic images of a romanticized medieval idyll appeared increasingly indulgent.”<sup>13</sup>



Fig. 1, Vittorio Zecchin, *Veronese vases*, 1923; fig.2 Gio Ponti, *big vase Women on clouds*, 1923 – 1925.

Making a jump ahead chronologically, in a different context, we can consider situation in Italy in the inter-war time period: while the rest of Europe – and of the world – much architecture as applied arts shows the signs of a new maturity in the desire to delineate a modern living style, devoid of any reference to history, in our country seemed unable to leave behind the legacy of the past and of the traditional forms of the different local contexts. So, as Gabriella D’Amato notes, during the Monza Biennale of 1925 “saw the revival of the regional theme [...] This aim appeared even more anachronistic in comparison with the regulations of the Exposition in Paris the same year, strongly in opposition to the use of popular art forms.”<sup>14</sup>

In that occasion, a different use of the classic reference had brought Italy to give so much worse than the best of itself, in the first case with the pavilion designed by Armando Brasini, “between the ancient Roman and 16<sup>th</sup> Century style, not proportionate and unsightly”<sup>15</sup>, on the other one, with sections set up at the Grand Palais by Gio Ponti for Richard Ginori. A few years earlier (1921), with Murano glass art’s recovery after a long period of scarce innovations, had been the foundation of Cappellin Venini, & C., for which Vittorio Zecchin exhibited at the Biennale of 1923 the collection of *Veronese vases*, a combination of inspirations between Renaissance model and morphology of the Wiener Werkstätte.

It is also worth mentioning that even the task of architects and designers at the time were very conditioned by the Italian political climate, which in turn implemented the intent to establish a self image built on the reference to the past, through artistic and architectural expressions structured by an echoing Roman themes and styles of classical rationalism, in the clear desire to increase its legitimacy by means of historical reference. Following the Second World War, still considering the Italian scenario, the historical pattern bracket and the great cultural inheritance left by the past tradition in our country retained its value, assuming a more discreet and cultured character, however, for example in some projects of the masters of Good Design, such as the *Superleggera* and *Carimate* chairs, respectively by Gio Ponti and Vico Magistretti, or Marco Zanuso’s *Lady* armchair, as modern interpretations of traditional chairs the first ones, and of the typical 18th century French *bergère armchair* the second. Furthermore, in the production of *Azucena*, which some pieces had

<sup>13</sup> See J. Heskett, *Design: A Very Short Introduction*, Oxford University Press, Oxford, 2005, p. 18.

<sup>14</sup> For a more complete discussion on this topic, refer to G. D’Amato, *Storia del design*, Bruno Mondadori, Milano, 2005, p. 105.

<sup>15</sup> R. Bossaglia, *L’art Déco*, Laterza, Roma – Bari, 1984, as quoted in G. D’Amato, *Storia del design*, Bruno Mondadori, Milano, 2005, p. 105.



such a spontaneous success, to the point of being considered by Renato De Fusco: “forerunner of the trend to recovery of motifs and accents of the past, which then became increasingly applicant and still current.”<sup>16</sup>



Fig. 3, Marco Zanuso, *Lady armchair*, 1949; Fig. 4, Luigi Caccia Dominioni, *Catilina for Azucena*, 1971.

Finally, indicative of this indispensable reference to the past, closer to a ‘classic’ gene in Italian cultural DNA, cannot be neglected the first design award: the *Compasso d’Oro*, which relates symbolically the new industrial production with the classic canons of beauty, considered as an ideal of perfection<sup>17</sup>. All of these cases, however extremely different because of their historical and geographical contexts, nevertheless, have a common denominator: the reference to History, seen from time to time as an example to be followed or ideal to aspire to, source of inspiration for the immense cultural background that brings with it or reason of legitimacy, is explicit and programmatically pursued, expression of a precise will and an ideological construct tool strongly characterized. In other words, the reference to the past comes from a select operation between what has already been, as acknowledgement or either attribution of meanings, for which certain facts take on values greater than, less than, or more simply differently than others.

What is left of this attitude, or how it has changed the way we relate to the History, if indeed something has changed?



Fig. 5, Floor tiles *Blu Ponti*, *Ceramica Francesco De Maio* on original design by Gio Ponti, 1960 – 2017. Fig.6 Old fashioned toaster from *Vintage Line* by *Ariete*, n.d.

Today, as previously noted regarding the current situation, we observe a complex set of lexical comingling and references to the past, as a result of which in so many cases is presented as the ‘new’ something, that comes from afar indeed: yet, a ceramic tiles line for walls and floors, designed by

<sup>16</sup> See R. De Fusco, *Storia del design*, Editori Laterza, Bari, 1985, p. 261.

<sup>17</sup> The *Compasso D’Oro* is an Industrial Design award originated in 1954 by the *La Rinascente* company, from an original idea of Gio Ponti and Alberto Rosselli. Its purpose was “to honor the achievements of those industrialists, craftsmen and designers who [...] give to products quality of form and presentation, in order to make them uniform expression of their technical, functional and aesthetic features” (from Regulation of the first edition, in G. D’Amato, *Storia del design*, Bruno Mondadori, Milano, 2005, p. 168). Both the logo of the award, designed by Albe Steiner, that the Compass, designed by Marco Zanuso and Alberto Rosselli, refer to the compass of Adalbert Goeringer, an instrument used for determining the Golden Section in drawing and sculpture.

Gio Ponti in 1960, has been released again in limited edition, in these recent months, after a celebrating exhibition<sup>18</sup>, like commercial catalogues faithfully creating perfect style settings, alongside to domestic appliances delivering performances keeping up with the times but with a old fashioned style and, last but not least, the reissues of past productions often presented as elements capable as successful catalysts. So, should not be underestimated as expressed by Remo Bodei: “The greatest danger is that not only the things, but history itself is reduced largely to a mere rocklike objectivity, a storing of data and objects, not mediated by the consciousness and not illuminated by the deciphering and the contextualisation of their meaning.”<sup>19</sup>

## Methodology

### Perspectives contemplating the past in contemporary Design

By L. Chimenz

Let's state it from the beginning, undertaking the risk of being rude but in order to avoid misunderstandings: turning back to the past, intending with it past styles, design icons as for products and graphics, is a deliberate choice, not something that falls down from the sky. Exactly like choosing to design something definitely new and act going on a course never trodden before.

When a designer, an architect or an artist in his/her design process, in interiors, artefacts and visual products, encompasses and quotes a particular period or reference is operating a choice, that highly and clearly utters much more than what is shown.

As said by John Heskett: “Objects and environments can be used by people to construct a sense of who they are, to express their sense of identity. The construction of identity, however, goes much further than an expression of who someone is; it can be a deliberate attempt by individual and organization, even nations, to create a particular image and meaning intended to shape, even pre-empt, what others perceive and understand.”<sup>20</sup>

In this sense, the choice might come expressively by a personal accordance with the period itself or with an ideal picturing of how it was, can either be intended as a tribute felt to be given or it can, on the other hand, be a strong reference claimed by the design's brand or commissioner.

Anyhow, there is a long distance between the *style mentioning* and the *quoting renewal*, a big issue and a strong difference about the worth of history, transposed in the contemporaneity, and the mere, and barren, use of the past.

In order to try to trace and explain these concepts to examine some examples, as for the strong visual commitment and character of design discipline, is a compulsion.

When considering the *style mentioning*, we are referring to a readable reference in contemporary projects and artefacts, nevertheless new which requires the mastering of the period itself and in addition demands for a whole creative design process to be performed. This latter delivers easily and immediately to our mind something well-known, already seen and that embodies a sense of familiarity and reputability. Even if the reconstruction of the reference as for the users' sight is not complete, the *aura* of familiarity is anyhow maintained and present, with a cocooning effect that recalls all the values represented by the mention itself.

As a visual explanation it's proper to examine Aaron Hinchion's design for *Lily's Kitchen* pet food strategy and packaging design. The matter is unblemished: if we are talking about something definitely British and close to nature the strong reference to Arts and Crafts and to the Victorian Age is the suitable and veritable mention to deal with. The designer displays, indeed: “the design has a timelessness to it. It says: the food in this package is quality.”<sup>21</sup>

<sup>18</sup> Referred to the exhibition “Gio Ponti: l'infinito blu”, Palazzo della Triennale, Milano, 10/02 - 12/03/2017.

<sup>19</sup> See R. Bodei, *La vita delle cose*, Editori Laterza, Roma-Bari, 2009, p.55.

<sup>20</sup> See J. Heskett, *Design: A Very Short Introduction*, Oxford University Press, Oxford, 2005, p. 84.

<sup>21</sup> See Aaron Hinchion's website, at <http://www.aaronhinchion.com/#/lilys-kitchen/>, as for 17/04/17.

With his design, Hinchion is demonstrating how right was John Heskett when saying: “The capacity of people to invest objects with meaning, to become imaginatively involved in creating from an object or a communication a sense of significance that can reach far beyond what designers or manufacturers envisage, has not been given much credence in the age of mass production and advertising. [...] However this human capacity to invest physics energy in objects is immensely powerful, with significant ramifications for the study and appreciations of design. In an important sense, it can be argued that the outcomes of design process, the end result, should not be the central concern of the study and understanding of design, but rather the end result should be considered in terms of an interplay between designers’ intentions and users’ need perceptions.”<sup>22</sup>



Fig. 7, Aaron Hinchion Lily's kitchen packaging and graphics on products, 2009. Fig.8, Lily's kitchen homepage as screenshot on 17/04/2017.

Profoundly different in the final outcomes and results as well as for the attitude, but same design process has invested and continues to invest what goes around or under the – pretty inappropriately<sup>23</sup> - definition of Scandinavian Design. Whenever an appeal of naturalness, is performed expressed in warm minimalism with the intense presence of wood and comfy rational(ist) lines and shapes, there we all refer to Scandinavian Design, and in particular that timeless effect created in these countries by the more than fluid approach to the tough path between craftsmanship and industrial production. Thus, as said by Bernhard. E. Bürdek: “Figuring Scandinavian design, the thought goes spontaneously to furniture, lamps, tapestries, glasses porcelains and ceramic products. Scandinavian design characterizes itself also for a higher standard in product culture and the absence of exhibit single pieces, typical in Italy indeed.”<sup>24</sup>

The positioning of IKEA in the Scandinavian economical and social context is undeniably appropriate: so, no one would blame IKEA to refer historically to its economical, social and mostly to its cultural background. The brand, evolving, doesn't need to betray its very first aim and when IKEA designers provide new novels and products, they refer to the brand's past, of course, but also to whole Design History, as to deliver it in every home, offering more affordable and democratic prices. In John Heskett's thought: “The success of IKEA has also been based on a consistent design approach, predominantly an updated Swedish Arts and Crafts style, which it projects in all its operations, giving it a local character in global market.”<sup>25</sup>

<sup>22</sup> See J. Heskett, *Design: A Very Short Introduction*, Oxford University Press, Oxford, 2005, p. 36.

<sup>23</sup> As stated by many Design History scholars, the allocation of *Scandinavian Design* includes Denmark, Finland, Norway and Sweden (as well as Iceland in more recent times), even if literally from the geographical point of view the Scandinavian peninsula actually comprises only Sweden, Norway and part of Finland. See G. D'Amato, *Storia del design*, Bruno Mondadori, Milano, 2005, p. 135.

<sup>24</sup> See B. E. Bürdek, *Design: Storia, teoria e pratica del design del prodotto*, Gangemi Editore, Roma, 2008, p.126.

<sup>25</sup> See J. Heskett, *Design: A Very Short Introduction*, Oxford University Press, Oxford, 2005, p. 36.

These argumentations become evident in front of the new *IKEA PS 2017* floor lamp, strongly mentioning and related to the Italian Castiglioni's lamp, *Taccia*. As for Remo Bodei, "[Things] constitute documents embodied of an intrinsic dignity, able to evocate bunches of memories and a harvest of information useful to the knowledge not only of material history, but of history *tout court*. In general terms, turning itself in a thing after a long period of oblivion, the object shows either the traces of natural and social process that produced it, either the ideas, the prejudices, the inclinations and the tastes of an entire society."<sup>26</sup>

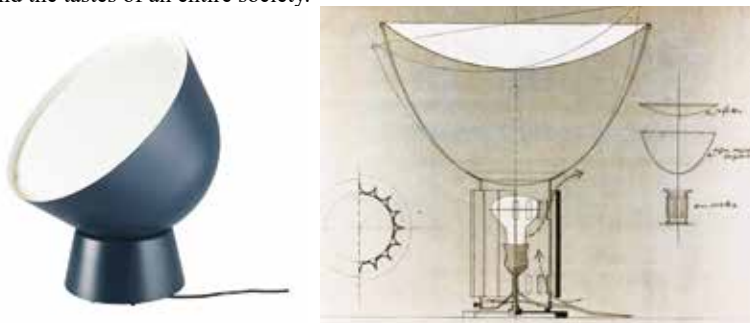


Fig. 9 *IKEA PS 2017* floor lamp, 2017; Fig. 10, Piergiacomo e Achille Castiglioni, *Taccia*, design 1958, prototype and glass production 1962, PMMA with led lights 2016.

Do so, the effort made by IKEA designers delivers elitist (and expensive) Italian design to average homes, but in this process unfortunately it loses the already present historical connection that the original lamp from Castiglioni brothers had, celebrating the local classical cultural heritage and background. Anyhow, this is a borderline example that might introduce to the concept of *quoting renewal*: appearing thoroughly different, it positions itself in the design process somehow closer to a smart dodge than to a real creative course. To be honest, it's awkward to cite example responding to such an approach, not because of the lack, of course: commonly, the *quoting renewal* reveals itself in the particularity of nonappearance of presence. Objects and projects, in some way seem not to be complete, to disclose a lack, either because the historical reference is not so evident, either due to excessive re-shaping that gives back a not easily distinguishable framework.

In this sense, whilst the designs referable to the *style mentioning* stand for by themselves, the products, intending even visual ones, under the *quoting renewal* are – unpleasant to say – lame without their reference. Probably, it's because they don't innovate and don't apportion anything new to the design language, and only take from Design History: willing to offer a cooking metaphor, as for the same ingredients they don't cook nor invent, just merge and mix.

In the attempt to create a new icon, Philippe Starck merges the profile of three classic chairs, with the use of a language that sounds pretty awkward to be read and understood and a bit far from the original quotations, in somehow a lack of authenticity. As said by Deyan Sudjic, in fact: "'Authenticity' is a word that makes no promises about performances. It might not necessarily involve beauty, but it does suggest an irresistible combination of sincerity with authority. In the world of mass-produced objects, these are highly desirable qualities. Even if they are slippery and hard to define, grasping them is essential to an understanding of the nature of design. [...] Authenticity can have mutually contradictory definitions. It can be found in the making of a faithful replica of what an object once was, or in the careful maintenance of what that object has become as the result of the passing of the time."<sup>27</sup> Actually, according to these latter words, the *214K Chair* by Thonet better

<sup>26</sup> See R. Bodei, *La vita delle cose*, Editori Laterza, Roma-Bari, 2009, p.33.

<sup>27</sup> See D. Sudjic, *B is for Bauhaus: An A-Z of the Modern World*, Penguin Books, London, 2014, p.3-4.

responds to the definition offered for the *iconic reference*<sup>28</sup>, and places itself conceptually distant from the *quoting renewal*, in the sense of maintaining an undeniable and easily reachable strong connection with the source of inspiration, without creative betrayals or underhanded copying actions, but bearing a brave contemporary twist.



Fig. 11, Philippe Starck, *Masters* by Kartell, 2010 ; fig. 12, 214K by Thonet, 2009.

## Conclusions

By L. Chimenz

Words, definitions, classifications are relevant, even in a creative discipline like design is, in its multiple facets and developments. We need to give names and labels to things, thoughts, ideas, processes that we like and choose, in order to let other people to recognize our selections, revealing them or not the deepest roots. The reasons for which there is and there has always been a turning backwards in style and design, an orientation towards past trends in objects, artefacts and graphics can be the most diverse. Giving an answer and an evaluation is awkward and may be hard. According to the Oxford Dictionary, the word *vintage* is for “denoting something from the past of high quality, especially something representing the best of its kind.”<sup>29</sup> Moreover, “valued objects and qualities such as historic buildings and cultural traditions that have been passed down from previous generations”<sup>30</sup> are identified, instead, with another word’s help: *heritage*. If and when we are talking about the past, in its wider sense and especially when applied to disciplines necessarily dealing with culture, *vintage* and *heritage*, reveal their matter physically and become crucial, as witnesses giving meaning to the reason for the choice.

In the thought of Giampiero Bosoni: “the shape of ‘things’ has been read (in history in general and in art in particular) as a symbolic and representative expression of a certain time and a certain place. In this sense, terms like *style*, *expression*, *custom* and *taste* have been coined, as meanings also of manners, habits and lifestyles that interwoven the form and the use of things with man’s life.”<sup>31</sup> Furthermore, willing to investigate deeper, the presence of the past is linked to values, memories, roots, and it seems that through grasping pieces of a particular bygone style we do go back to a better time, without contemporary concerns, free to leave them to the future. From the design point of view, conversely, the process is extremely clear. A product, a type, a style that has already proved

<sup>28</sup> For the argumentation concerning the *historical* and the *icon* reference, please see L. Chimenz, “Il valore della storia nel progetto contemporaneo” in A. Bertirotti, *Psico-antropologia per il Design*, David and Matthaues, Serrungarina (PU), 2017, p. 315-333.

<sup>29</sup> Definition from the online version of Oxford English Dictionary, retrieved from <https://en.oxforddictionaries.com/definition/vintage>, on 19/04/2017.

<sup>30</sup> Definition from the online version of Oxford English Dictionary, retrieved from <https://en.oxforddictionaries.com/definition/heritage>, on 19/04/2017.

<sup>31</sup> See G. Bosoni, “Design e memoria: per una contemplazione dell’oggetto”, in *AIS/Design, Il Design e la sua storia*, Lupetti – Editori di Comunicazione, Milano, 2013, p. 173.

its validity looks a good investment, moreover if all the researches and the activities connected to the design development are already done. So, the fact is only to give a new touch, refresh the enamel: how to do it and where to leave some space for the new is exactly the topic of this kind of approach and its multiplicity of possibilities. If it is true, as said by Paul Clark and Julian Freeman, that “another such a case, where the spirits split: is ‘retro’ now a revived style of the recent past or indeed the French word to ‘this and that from whatever epoch’? It can refer to modern pseudo-art works, such as those Victoria pubs mirrors, which were manufactured and sold millions of times in the 1970s. [...] Just like Post-modern, retro design lives on collective memory, that is of stylistics of Design History”<sup>32</sup>, finally this is the point. There is a turning back welcoming the past styles, manners, designs, (but not materials and technologies) because in the old fashioned shapes we look as into a golden mirror. As expressed by Remo Bodei: “in our world it’s inevitable that the object’s landscape alters rapidly, that a ‘generation’ of ever new models replaces and pushes the previous ones into oblivion [...]. If the technologies, the needs and the tastes change, why then to remain clung to the things and the techniques of the past? [...] Yet, just because they re-establish the connections between the various segments of our individual and collective history, saving the things from insignificance means understand better ourselves.”<sup>33</sup>

Thus, it’s a matter of individualism and of uncertainty at the same time. It is even a good marketing strategy, of course, that works on the emotional value that worth the price. Nothing new, so said: we respond to an inner need finding in the past new novelties, grounding in a variety of historical arrays our everyday landscape of objects, for the pleasure of our sights and of our souls.

Designers and brands electing to accomplish these desires are choosing an impervious though exciting path. On one hand, they have to take under consideration that their outcomes will be compared to the origin of their design, and that in such this challenge the assessment might be not in their favour. On the other hand, this design process and approach, dealing with a relatively recent and bespoke history, as a consequence recalls to the users’ minds such a variety of emotions and sensations, from which is simple to select the best ones. In conclusion, it’s always worth to answer the challenge, treating respectfully feelings and memories, conscious that mostly only the best last but nothing is predetermined, as demonstrated by the comeback of certain fashions and patterns after decades of oblivion. History doesn’t forget, men seem to do: this is why we study it, sometimes we love and from time to time we neglect it.

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## The images for architects

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### Abstract

French sociologist Didier Eribon, beloved student of Foucault, is perhaps one of the last intellectuals, but only chronologically, to approach the relationship between autobiography and vision/interpretation of the world (*Weltanschauung*). In his recent book "Retour à Reims" (2009), between the novel and the essay he writes that despite having lived a long process of intellectual, sentimental and geographical liberation from his humble origins, the French "working class" in the suburbs of Reims remained within him - intellectually - as expression of his real life, of what he has done, seen, heard, attended and also rejected. In other words, an experience to be considered an indispensable part of his intellectual training and sentimental education.

In telling of the newfound awareness acquired after a long re-processing of his denial (for his origins), Eribon refers to a concept whose most direct expression in the field of art has perhaps been Surrealism (the most "subjective" avant-garde of the entire spectrum of the twentieth century). Our way of re-elaborating the reality affects the way we produce interpretations and representations. In this sense, the work of the intellectual, artist, writer and architect cannot be separated from the experience of the world in which the work is always a re-elaboration. Architecture is a field of the intellectual production where, besides producing thoughts, images are projected (and at times they become more real than reality and become part of the collective heritage) and it is therefore more interesting to investigate their provenance.

Valerio Olgiatti's book "The images of architects" explores the ineffable borders of this relationship in the production of meaning through images and works. The contribution to the day of studies will analyze the path of images in the production of architects, in particular from Olgiatti's school, to ultimately outline general considerations on the relationship between architecture and poetry, between the most "useful" Art and the most "useless" Art that exists

For Joern Janssen's (architectural design professor at ETH) thesis on Modernity, in Zurich no one was particularly interested. It was a moment of generalized criticism at the Modern Movement and autonomous positions were of little concern. Janssen was ignored also because the left wing was divided into many currents and there was no unified critical front to refer to. During lectures at the ETH School of Architecture, professors politically engaged spoke in general of left-wing ideology and "social Issue." This avoided confronting positions that did not always coincide, such as those of Janssen and of Lucius Burckhardt. But in general, in the Architecture section of ETH, the spirit was conditioned by the prevalence of professors of anti-intellectual stances, who opposed themselves against Theory.

Outside the school, the climate was paradoxically more engaging: in an open letter in September 1971, the local group of the Union of Swiss Architects stated that the professional training of architects should be based on Theory. An instance that the ETH Architectural Design professors were

unable to answer, nor even take position. It was clear, however, that times were changing and it was necessary to fill the void. This is the context in which, in February 1972, Aldo Rossi was presented as a candidate for replacing Janssen as professor of architectural design.

Bruno Reichlin and Fabio Reinhardt, in charge of the operation to bring Aldo Rossi and his future assistants to Zurich, wrote the review of Rossi's presentation at the School, which they curated themselves. It was inaugurated with Rossi's written contribution, from which the authors cited the following step: Architecture has "as any other technique, art or craft a precise reference to reality; it is a link to the world, defined by history, of divided labor in its organized form. Within this condition, its principle of Autonomy is confirmed. "It is the first time that the term "autonomy" appears within the German architectural debate. This is obviously a typical phrase of Rossi, hypnotic and vague as always, even contradictory, because how can Architecture itself, whose existence is justified from the point of view of social, political and economic equilibrium, be autonomous at the same time?"

Rossi was the ideal candidate in the politically delicate situation in which the Architecture Section of the Polytechnic School in Zurich was facing. He was a member of the Italian communist party, and the circulating voices that spoke of how he had been invited as a student to Moscow and had personally met Stalin, attributed to his image a mythical halo. With this background, most politically active students favored him as a valid successor to Janssen. However, being both a theoretician and an active Architect involved in design and construction, Rossi was in a position to be able to convince (although not immediately) the establishment of ETH, in particular Bernardt Hoesli, dean of the faculty of architecture and Hans Hauri, President of the Polytechnic School, both convinced that a designer architect was necessary to take on that role.

Dolf Schnebli, a professor of design, describes the accomplished operation of Reichlin and Reinhardt, attributing much of the credit to himself. Schnebli considered Janssen an inadequate professor to teach design and considered him responsible for abusing of the teaching tenure for political-propaganda purposes. In general, just like many of his colleagues, he considered letting "sociologists" occupy a design profession a serious mistake, and in fact did not keep secret that he would have thrown out Lucius Burkhardt for the same reason. But in the decisive session of negotiation with students, they succeeded in approving the candidacy of Rossi and at the same time demanded the a contract renewal for Burkhardt. Schnebli himself reports that in the autumn and winter months of the years 71-72, students and teachers of ETH informally visited Rossi in his office in Milan. Jan Verwijnen, a "radical" student of those years and an assiduous and enthusiastic participant of Rossi's seminars, was one of the students who visited him in Milan. He remembers how Rossi was very interested in his transfer to Zurich because, as a teacher in Milan, he had remained unemployed. Suspended at the Polytechnic of Milan for having opened the doors of the university to the homeless, what Rossi had to say about himself probably sounded quite convincing in the ears of politically engaged students.

However, Verwijnen never knew that on the 21<sup>st</sup> of August 1972, Rossi signed a document drawn up in German that ETH President Hauri had claimed (and that was probably written by Schnebli himself) as a condition for recruitment. In that document, Rossi underlined that "my suspension at the Polytechnic of Milan had no relation to any political activity I conducted," and that "as a member of the faculty staff I have always behaved correctly in front of the Presidency, and how, together with my colleagues in Milan, I was a victim of the opaque mechanisms of university politics." After specifying that he is interested only in "Architecture" and in teaching as an "Architect", Rossi commits himself to respect all the rules of the school and the department. Schnebli is convinced that Rossi is not politically engaged and succeeds in conveying this belief to Hauri, clearing the field out of the concerns and doubts that the tale of the Milanese events had caused. In this way,

Schnebli places the foundation stone of the myth according to which Rossi brought “the autonomy of Architecture” in Zurich, and whose fruits still grow and are harvested.

Intentionally, Schnebli interprets and spreads the idea that “Autonomy” is an artistic matrix and therefore in tune with his teaching and that of his colleagues (including Hauri) who have always argued that Architecture had nothing to do with politics. In this sense, Schnebli works in harmony with the establishment of the ETH which wants to return to the traditional teaching model (forgetting Janssen) and opposes any form of renewal, especially those that would suit student requests. Students who attend Rossi’s lessons at the ETH have a completely different opinion on the subject. For them Rossi is exactly the renewal they expected, in continuity with Burckhart and Janssen. They emphasize that the fascination that emanates Rossi’s person and his teaching derives mainly from the solution that Rossi proposes of a historical juxtaposition (contradiction) between theory and project. With Rossi’s arrival, the school had a teacher with very solid theoretical bases, extremely cultured, politically interested and left-winged. But at the same time he taught the project and was convinced that to change reality, actions must be made through design. Up until this moment, students only knew the two alternatives in opposition.

In his writing *Werk, Bauen, Wohnen*, Burckardt derides this conviction, arguing that the students were too ignorant to understand Rossi’s lesson, a statement that also is a direct hit to his colleagues who he considered unable to adequately train students. Indeed, there was a kind of intellectual and creative vacuum created by the professors of the ETH, which was created by the belief that Architecture was a mere matter of taste (left winged teachers) and a technocratic competence (right winged professors). The phrase cited by Reichlin and Reinhardt in the introduction to the Rossi exhibition in 1972 is also found in the introduction of the official program, which is officially handed over to the President. This statement suggests that Rossi did not come to Zurich to teach the autonomy of the discipline based on formal issues.

In his teaching program he writes that the meaning of Architecture manifests itself through the Form in its relation to the Type (relationship that has never been clarified by Rossi). By analyzing his lecture notes, it is obvious that his teaching was not based on the transfer of artistic or formal knowledge, nor did he give special importance to the university’s role in turning students into professionals. Rossi was in tune with Janssen’s approach and shared with him the conviction that methodological rigor was needed above all.

His students had to analyze the history and the political and economic conditions that had generated the different Swiss residential typologies and their morphological variants. Like Janssen, Rossi is convinced that the study of architecture must be of scientific nature. The difference between the two was that for Rossi the analysis was indispensable for the purpose of the project. For this reason, with his assistants Reichlin and Reinhardt, he teaches the precise analysis of typology and morphology as the foundations of the project. The analysis he has his students do produce drawings in which Rossi finds the relationship between analysis and project.

To accompany these lessons on the project, at irregular time frames, Rossi held lectures that broaden the themes of urban analysis and its socio-economic context.

In one of his first lessons on the Residential Project, Rossi speaks of Architecture and the city with thoughts close to Janssen’s. He also addresses the texts of Engels and in particular the “*Wohnungsfrage*” when emphasizing his thesis that the “*Wohnungsfrage*” cannot be separated from the connotations and characteristics of a particular historical moment. Referring to Engels’s famous controversy over Proudhon, Rossi explains to his students the difference in position between bourgeois exponents and those of scientific socialism, revealing the reactionary nature of Proudhon’s “social ownership” solution, which leads him to say that “today the situation has not changed”, thus revealing his Marxist militant beliefs (shared with Janssen). Rossi’s Marxism is, however, influenced

by Gramsci's lesson. Already in his first essay on the "Classical Architecture of Milan", published when he was merely 25 years old, Rossi argues with Gramsci that ideas are not born because of parthenogenesis (from other ideas), but are always a renewed expression of social progress plunged into reality. Progress and change are always the result of renewals achieved through sweat, which question cultural hegemony and are produced by impelling social necessities.

Today, of Rossi's lecture in Switzerland, what remains in particular is "Analogous Architecture" which has become "School" in Miroslav Sik personal interpretation, now professor of ETH and, when Rossi was there, Fabio Reinhardt assistant.

In the analogue city (elaborated with Reinhardt and Reichlin) Rossi treats the city as a set of data that becomes expression of the collective memory of the city, filtered with a component of personal impressions and interpretations. The terms of science of rationality are converted into the rise to contingency. The role of analogy is no longer that of creating a picture of the world, but to restore its inadequacy and its uncertainty.

Valerio Olgiatti is one of the Swiss architects who has collected Rossi's heritage through the school of analogous architects directed by Miroslav Sik. In Rossi's Analogy, he recognizes the possibility of "a different sense of history, not one made of quotes, but a series of things, objects, affections, drawings that have the task of making you remember."

In this way, Olgiatti and the protagonists of analogous architecture independently develop Rossi's thoughts. Besides combining an atmospheric dimension to the analysis, references are added to Rossi's intellectual and abstract vision and his assessments of the structural features of the city, becoming images (specifics). With his book the "Images of Architects", Olgiatti proposes one of the most convincing moments of this re-reading, of which this short text represents a long introduction.

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## The treehouse: iconography and cultural phenomenon

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### Abstract

In recent years we are witnessing a remarkable proliferation of images, websites, tv shows, magazines and publications dedicated to the topic of tree houses.

The extent of that disclosure is liable to lead into thinking that we are seeing a real cultural phenomenon that relates a specific form of architecture, its representation and a multiplicity of interests which increase its resonance.

The research investigates the evolution of iconography related to this topic trying to develop some reflections useful to identify the reason for such popularity: from the narration made by Ulysses up to the modern expression of contemporary artists such as Louise Bourgeois we can try to sketch several ideas about its iconic and cultural value.

The search moves, methodologically, within the extensive range of representations (quite heterogeneous) that for centuries until today interested the object of the study.

### Introduction

*Viviamo in un paese dove si verificano sempre le cause e non gli effetti.  
Il Barone rampante - I. Calvino*



*Fig. 1- Trehouses on Canavese hills - A community of about 60 people decided to live in a treehouses village in 2013. All the construction were made in total respect of the naturalistic heritage.*

It is rather difficult to ignore, especially for those who have a memory of a similar experience, the proliferation of interest to tree houses that, lately, can be detected in many areas. Indeed, there is a real rediscovery of this “architectural” genre, expressed in very different ways. Specialized web sites, books, television broadcasts, and even iconographic references in the latest cinematography focus on the image of buildings nestled between tree branches.

It is necessary to specify that we must distinguish two types of tree houses: the first is determined by survival requirements due to environmental conditions such that it is preferable to such a solution

rather than contact with the soil (think of the populations of Guinea, nowadays they live in structures of this type), the second, otherwise, are structures without the slightest need of survival, but rather are mere ephemeral expressions beyond any reason of being functional, or rather, practical. The present study intends to investigate the fascination, the iconographic value and, if possible, the very effects of the latter.

### **The myth of the forest: symbolic value**

*Le città come i sogni sono costruiti di desideri e di paure  
Le Città invisibili, I. Calvino*

*Conditio sine qua non* about the location of a tree house is obviously the presence of a tree and what appears to be a recurring element in its representation, especially photographic, is the concomitance with a true forest.

Therefore It seems indispensable to read these two elements (tree house and forest) in a close relationship in order to understand how they can influence each other.

Symbolically, the concept of forest<sup>1</sup> has undergone variations over the centuries, however, some references have remained unchanged. In an extremely synthetic way we could say that Man has continued to see in the forest the place of the unknown, of the adventure, of the distance from civilization and hence from a series of cultural and social conventions, and finally a place, precisely by virtue of mentioned Features, where it was possible to find his identity, albeit at the cost of risks and dangers.

Literature has made references and has evoked very sharp images of this spirit: think of the Dantesque *Selva Oscura*, to move to Shakespearean environments or to the forest as a theater of passions and heroic acts in the *Orlando Furioso*, to reach the eighteenth century idealization in antithesis to the Romantic representations in which man finds in the forest the place of infinity, of research, of contemplation.

And finally, in the modern era, the forest is seen as an opportunity to escape from a reality that seems far from the needs of man to the point of risking the destruction of a resource like nature itself<sup>2</sup>. So the forest is the ideal scenario, rich in narrative valor, for the placement of a symbol – the treehouse- that surely goes beyond the surface-readable image of just a toy. Adventure, risk, unknown became the occasion for and existential trip.

### **Treehouses: origin and diffusion**

*L'occhio non vede cose ma figure di cose che significano altre cose...  
Le Città invisibili – I. Calvino*

The summ of these values influenced the popularity of constructions, built in such unusual contest, that reached a wide diffusion during the time.

The presence of treehouses dates from ancient times, in cases of architectures where the will to create something extraordinary, astonishing, and especially ephemeral was evident.

Pliny The Old reports the presence of a platform created for Emperor Caligola (sadly known also for his extravagance), and we also have the testimony of the Fontana della Rovere made in the garden of Pratolino for the Medici family at the end of the fifteenth century.

<sup>1</sup> For a focus on the iconic evolution of the forest see Marco Paci *L'uomo e la foresta*, Editore Meltemi.

<sup>2</sup> A text that illustrates well this spirit is *Walden* di E. Thoreau, where the author decided to live in the forest just to rediscover himself and his ability to front to natural elements .

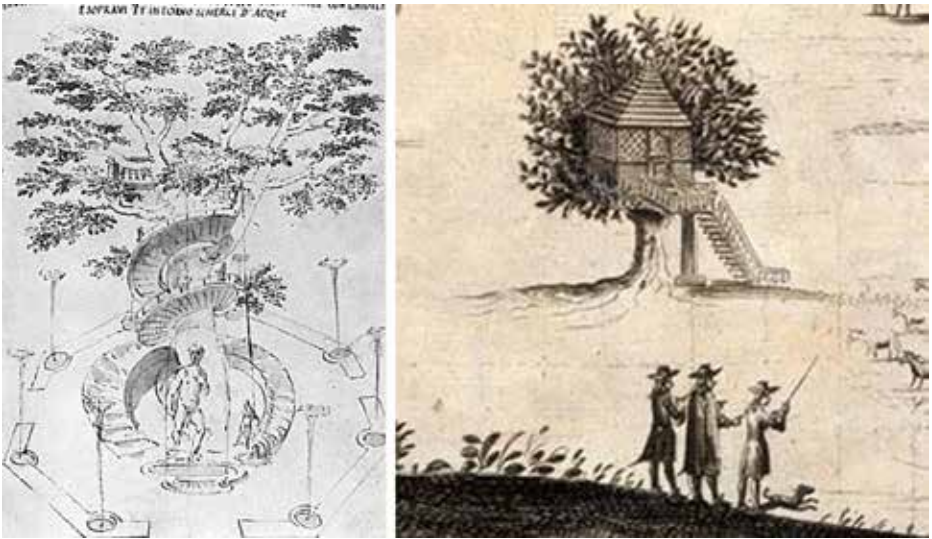


Fig 2-3 G. Guerra- *Arbore di grossissima quercia ridotto ad uso praticabile. Parco di Pratolino (XV century)*; John Drapentier *Illustration of Pishobury depicted in The Historical Antiquities of Hertfordshire by Henry Chauncey (XVIII century)*.

It is from the late '600 that, especially in England thanks to the spread of naturalistic mythology populated with nymphs, fauna and other enchanted creatures so widespread in the Elizabethan period, there is a proliferation of treehouses : real, or simply narrated and animated by stories that have become increasingly articulated to this day.

In England, infact, treehouses became popular additions to the formal gardens of the seventeenth century. One garden visitor Celia Fiennes<sup>3</sup>, described her visit to the duke of Bedford's gardens at Woburn in 1697: "the gardens are fine, there is a large bowling-green with 8 arbours kept cut neatly, and seats in each, there is a seat up in a high tree that ascends from the green 50 steps, that commands the whole park round to see Deer hunted"

Other treehouses were used for dining or listening to music. In a landscape it was important to have focal points and resting places dotted around to provide a restingplace and different view point. One of the earliest of these at Pishobury was drawn by John Carpenter and recorded in Henry Chauncey's book the historical antiquities of Hertfordshire (XVIII century).

As a location for pleasure treehouses became very popular in the nineteenth century. Just outside of Paris, in the suburb of Plessy Robinson, large Chestnut trees, intertwined with rambling roses, were used to create restaurants within the trees. At the height of their popularity, up 200 diners were accommodated in the treehouses, with the food and drink being winched up in baskets.

The evidence of historic treehouses is scant, due to their ephemeral nature. Always made from wood, they were unlikely to have a life of more than around fifty years<sup>4</sup>.

And this ephemeral nature has often made them an ideal setting for stories in which extraneousness to what may be customary, habitual and foreseeable must be duly highlighted.

<sup>3</sup> C. Fiennes, *The Journeys of Celia Fiennes, (1685 – 1703)*, 1983. p.140.

<sup>4</sup> However the oldest surviving example is thought to be that of Pitchford Hall in Shropshire. Probably dating from the early 17<sup>th</sup> century, it was remodelled in the eighteenth century when the ogee windows and gothic interior were added to accommodate the changing taste, when garden buildings were influenced by styles from all over the world.

So they are not only placed in a contest like a forest, theatre of potential adventure, but -just thanks to the tree house presence, the adventures assume a fantastic character.

### Modern tree houses: typologies and images

*Da una parte all'altra la città (Moriania) sembra continui in prospettiva moltiplicando il suo repertorio d'immagini: invece non ha spessore, consiste solo in un diritto e in un rovescio, come un foglio di carta, con una figura di qua e una di là, che non possono staccarsi né guardarsi.*

*Le Città invisibili – I. Calvino*



Fig. 4 Some images of books dedicated to treehouses.

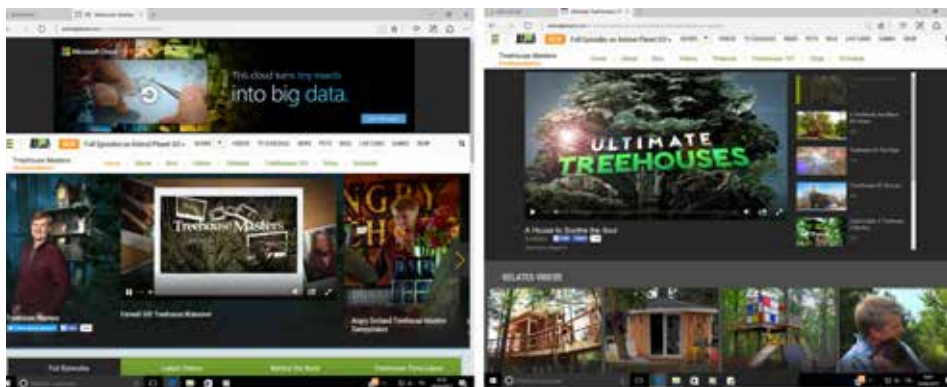


Fig. 5 Some images of web sites or tv programs dedicated to treehouses.





Fig. 6-7 Up images drawn from *Star wars, Episode The return of the Jedy, the Ewoks village*; *Sketches for The Lord of the Ring, Episode The Fellowship of the ring, sketches for Lothlorien.*

The large amount of image sources relative to the treehouses allows a significant analysis of the prevailing typologies. It should be pointed out that the methodology of representation, regardless of the architectural language adopted, essentially always involves some repeating settings: from bottom to top, a long field to better understand the context, very few images of the interior. This leads to the reflection that the treehouse is essentially the symbol of a wider system of values, among which the actual contact of nature, for those in it, to the practical side becomes almost secondary as it is almost never described what you actually perceive from the inside.

However, despite this commonality of visual settings, two types of architectural languages diametrically opposed to each other can be distinguished. On the one hand, there is a repertoire close to the decisively futuristic contemporary architecture and, on the other hand, a recall, sometimes also of fabulous and folk inspiration, to the tradition of traditional architecture. Intermediate expressions are rather rare: evidently architectural evolution has undergone some stylistic gaps that left little room for gradual change.

The vectors of these images are the most disparate; television shows featuring the adventures related to the construction or reconstruction of treehouse, books, also featured by an editorial quality paper, magazines and, above all, web sites of designers, builders, landscapers specializing in the construction of tree houses of any type, size or articulation are dedicate to this subject. The visual communication range is quite heterogeneous, though orientated to the same end: the revaluation of an architectural repertoire, real or iconographic, that is, absolutely unusual.



Fig. 8 Bosco verticale, Project by Boeri Studio 2014, Milano. Example of contemporary architecture spectacularity



Fig. 9 Tre houses repertoire of images on "bing" (14april2017)

## Conclusions

### The reasons for success

*Si conobbero. Lui conobbe lei e se stesso, perché in verità non s'era mai saputo. E lei conobbe lui e se stessa, perché pur essendosi saputa sempre, mai s'era potuta riconoscere così*  
Il Barone rampante – I. Calvino



Fig.10 Louise Bourgeois, *I Do, I undo, I redo*; Tate Modern , London, 2000.

Have the desire, if not the necessity of courtesy, to astonish the guests of magnificent handicrafts or noble gardens of a time, why are we now witnessing this return? The spectacularity of contemporary architecture does not seem to dissipate the taste for theatricality and the unusual, however, it is obviously still sought in this specific repertoire something that otherwise seems to be lacking. Contact with nature, in turn, can be sought and satisfied in so many ways that outdoor living has now made it accessible to those who want it, so it's still something that can be the cause of so much success.

Perhaps the meaning is not to be sought in something practical, tangible, or generic: the treehouse evokes concepts as protection, freedom, preciousness, adventure, rest, intimacy, discovery, confidence, fantasy, secret, play, serenity<sup>5</sup>.

We may try to find an answer, or maybe just a synthesis, in two very distant examples, but nevertheless shared by one word: complicity. In the Ulysses of Homer a tree is of strategic importance in the narrative: the olive tree in the palace of Itaca. Penelope, when she orders to move their bed, knows that only one person could have known that it was impossible to do so, since he was embedded in a tree and, at the same time, adopting this expedition, underlines the fact that no one else outside Ulysses, had ever come to know this secret. An expedient, therefore, with a twofold value, that only the complicity of the two spouses could guarantee, the complicity guarded by the olive tree around

<sup>5</sup>The concepts here introduced have been, methodologically, collected by interviews on a group of people with age from 10 to 60 years. It is relevant to observe that the nature contact is not so incident.

which the palace had been built, their union, and which remained so despite their lives had begun for a long time very distant.

And the metaphor of travel, adventure and complicity that follows, at a contemporary time, is well represented by a Louise Bourgeois installation, which in 2000, at the inauguration of Tate Modern in London, with the sensitivity that Only one artist of his caliber can have, an anticipation of a feeling that is increasingly spreading today almost 20 years apart.

In the huge room on the entry level, three installation stand, quite similar to trees with a sort of small house, that consist of steel towers, entitled *I Do, I Undo and I Redo*. The towers, each some 9 metres (9 metres) high, will dominate the east end of the Turbine Hall. In *I Do and I Redo*, spiral staircases coil around central columns supporting platforms which are surrounded by a number of large circular mirrors. In *I Undo*, a square framed steel skin with a spiral staircase conceals a cylindrical core with a further staircase.

Visitors can climb the staircases to the platforms, which Bourgeois envisages will become stages for intimate and revelatory encounters between strangers and friends alike.

In this way the rise to the work constitutes the metaphor of a kind of adventure, of a path that is shared with friends or strangers at the end of which, also in the restricted space, we are pushed to the relationship with each other, and Just as with ourselves through the image reflected in the mirror.

These encounters can be viewed from the bridge across the Turbine Hall and the viewing platforms looking over the space, increasing the idea of a spectacle. The huge mirrors reflect the encounters between the participant and the architecture, the viewing public and the towers In a multitude of experiences narrated by emerging images.

Is this why the reason for the success of these houses on trees and even more the diffusion of related images: the house on the tree becomes the iconic narrative of the synthesis between a journey in a dimension suspended from everyday life, an adventure in one space full of valences such as the forest, which allows us to regain complicity with each other and, above all, with ourselves.

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# **Project management as a tool for multidisciplinary project approaches - business oriented: operating methodologies analyzed through case studies**

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## **Abstract**

Every aspect must be properly evaluated in each phase of the project in order to ensure the best outcome with minimal impact. With this statement we can decide to give a new meaning to the concept of project management: leave the industrial and production plant, approach the concept of 360 degrees planning, provide for a concept of total product building, manage a service logic.

Clearly the declination of the type approach not only provides designers, but all those “competence” inside and outside the company who can provide various and numerous points of view, guided by a facilitator, to achieve maximum results in the minimum time.

Doing revert all the information so collected and summarized in a logic of goal-oriented thinking, you automatically pick the quality proposals, speeding the creation of what is required and simultaneously proposing winning products and services.

Meeting this challenge, then, means “review” the concept of “project” according to acceptable storytelling that promote fresh and creative approaches, stimulate reflections outside the box, seize prospective aspects out of the ordinary and break with a tradition where even the academic culture can take a dignity directly proportional to its ability to generate cash.

## **Introduction**

### **From the ABSTRACT CONCEPT to the CONCRETE VALUE**

There are a lot of contexts in which the necessity to generate value coincides with the intellectual and eclectic effort to use keywords. An action that only enlarges website visibility and underlines posts on different social network. But in a socio-economic situation near to the collapse and on the brink of a third world war (due not to conquer reason but only to ego and public personalism), the act of “generating value” should acquire such a heavy and concrete meaning to challenge any intellectual generalization.

Acquiring new and right information, thanks to an anarchic net or web sources, is a never-ending work, constantly needing revision: too often the net helps to render the complexity of something that is easy, but cannot be express in an easy way otherwise cannot be perceived as believable. Moreover, there are overlays of individualisms of who decides to affirm him/herself the main owner of an “idea” and that due to this decides that no other things can be generated thanks to this, giving a limit in value to the idea itself, and closing the same value of the idea in a no-way scheme.

That happens when the entrepreneurial genius failed, as it builds bricks in the wall instead

of windows on the future. This limited vision gives space to ego and star system: both things recognized by a big public that in these times will never have the economic resources to buy their products nor creation (better low cost imitation): instead of align team and sharing information, it will create an economic and value disconnection, giving as a result company flops that instead of helping economy and increase jobs, fail into old economical pattern that drive to banks failure and exploitation of family heritages.

## Methodology

### From product design to business growth: THE POWER OF BRAND



*Fig.1 A panoramic view of the red wall of Kilometro Rosso - Bergamo*

Certainly, since in the 70's people started talking about Design Thinking and Double Diamond, you started to evaluate as a fundamental tool for the enterprise and for its design capabilities one thing defined in time "approach" (Italian definition<sup>1</sup> and English definition<sup>2</sup>, a word still little understood and consequently not yet meaningless). It's a word still too little formal and hardly defined by a definite sign, but its etymological definition (relating to the military context, and only secondarily related to contact with a new discipline) makes it impervious to exploitation/instrumentalization by varied and profoundly important in terms of the most widely strategic significance concreteness.

It's a word that can be translate in one of the few tools that takes strength and force thanks to the people who use it, which gives sense to the new concept of technology-related mankind (however clever technology can be), that puts in foreground some values related to the excellence of the human brain (unpredictability, creativity, adaptability and ability to change), which moves the vision

<sup>1</sup> *appròccio* s. m. [dal fr. *approche*, deverbale di *approcher* (v. *approcciare*)]. – 1. L'atto di avvicinarsi, di accostarsi. In partic., nel linguaggio milit.: a. Insieme di apprestamenti atti a mettere gli assediati in grado di avvicinarsi al coperto a una fortezza o alle trincee nemiche. b. Mossa di avvicinamento alle fortificazioni nemiche. 2. In marina, zona molto prossima a un porto, a una rada o, in genere, a una località che può interessare la navigazione. 3. fig. a. Il cercare di entrare in contatto con una persona allo scopo di ottenere da essa un determinato comportamento (amicizia, affetto o amore, concessione di favori, ecc.): fare degli a.; tentare un a.; a. amorosi, galanti; dopo i primi a. rivelò apertamente le proprie intenzioni; e con riguardo alla maggiore o minore disponibilità a consentire il contatto: essere di facile, di difficile a.; respingere ogni tentativo di approccio. Anche con riferimento più ampio a gruppi, a forze politiche e sim.: solo così possiamo legittimare il riso e il disprezzo con cui da noi furono accolti ... i tentativi d'approccio dei socialisti tedeschi (Gramsci). b. Primo contatto con una disciplina, un problema, e sim.: questo libro è un ottimo a. alla fisica nucleare; anche (per influenza dell'ingl. *approach*), metodo o atteggiamento mentale o prospettiva particolare con cui si affronta lo studio di un problema (soprattutto nelle scienze umane): a. storicistico, impressionistico, sociologico, matematico, psicanalitico (a un certo problema).

<sup>2</sup> to come near or nearer to something or someone in space,time, quality, or amount

of a company from the rigid rail of a choice to the new possibility to do other and different things, transforming the constraints into opportunities (within the legality).

And on the strategic level this thing is the easiest to implement, the more the company is correctly positioned. What the “Steve Jobs” story told us is that impossible can be possible, if, thanks to the failure of an idea, the anger that follows properly channelled creates exclusivity and “mood”, until the creation of a new economic strength that overturn the entrepreneurial level first and the industrial level after. Of course, the brand helps above all to support all that the economy alone does not endorse, but if it is the main and unique actor, it means that we are facing a Highlander<sup>3</sup> society, and not to a normal social and economic society. On the other hand, normality is quickly rising to a new type of value, which was declared as a symptom of a certain superiority, endorsed by the concept of centrality selfish that differs from the mass to which however it belongs: the uniqueness of being different<sup>4</sup>. On these considerations, a new instrument was born (the result of a dissertation and today one of the most innovative tools for creating enterprise) the Business Model Canvas<sup>5</sup>, which in theory makes the effort to understand the patterns linked to value creation through experience levers and expertise of the corporate team that is involved (assuming that they exist), dealing as possible with project stakeholders (customers, partners, market, etc.) to declare a new need to design and project quickly that has capability and effectiveness as a fundamental goal. But it is a tool, and it should be governed.

### From ‘Growth’ to ‘Evolution’: NEW DESIGN DECLINATION

Starting from the new is never a problem. Starting from a consolidated past, presents difficult aspects tied to the consolidated tradition itself and to the design thought patterns that (voluntarily or involuntarily) project’s participants realize to get as close as possible to the end of the project itself: it is very difficult for lots of people to work steadily on abstract strategies and on possible products and services that not always come in a visual concrete realization. Rendering helps a lot, where there are the minimum elements to ensure a designer to build an idea of bi-base or three-dimensional. But it helps with a vision, which is often not an overview, but a partial vision of the project (especially if the level is not the product but the service). Under this point of view, you can make some reflections:

- a consolidated company has an experience that, if by one side represents an important know-how, by the other side represents a repetitive pattern in time with the result of not being very competitive on the market
- a consolidated company has value proposals already existing that risk to become the major limitation to new proactive value proposals, when the experience is seen as the only element of comparison
- a consolidated company risks to lose the concept of monetization of what comes out from the value proposition, limiting the areas of expertise related to the possibilities of invention and not looking at the possibilities related to new growth engines that help the enterprise without investing in substantial changes
- a consolidated company risks to lose the sight the concept of improvement: what does not help to

<sup>3</sup> It is called Highlander syndrome, or immortality syndrome, from the cult movie of the 80ies. In suffer are mainly over 40 that have a great competition aim, self-esteem and feeling of well-being, unable to refuse competition even when the body is getting older

<sup>4</sup> The main campaign realized recently by Ray-Ban or by national radio rt102.5 underline the aspect of normality as element of distinction for all people the belongs to the “normal tribe”.

<sup>5</sup> The Business Model Canvas is a [strategic management](#) and [lean startup](#) template for developing new or documenting existing [business models](#). It is a visual chart with elements describing a firm’s or product’s [value proposition](#), infrastructure, customers, and finances. It assists firms in aligning their activities by illustrating potential trade-offs. The Business Model Canvas was initially proposed by [Alexander Osterwalder](#) based on his earlier work on Business Model Ontology. Since the release of Osterwalder’s work in 2008, new canvases for specific niches have appeared.

invent can help to improve

The metaphor of the child's growth, which moves from models more accelerated in times of stagnation and maturation, is a good metaphor to grasp how the aspects of speed are in fact also linked to socio-cultural de-conditioning concepts<sup>6</sup>: the more a completely devoid of knowledge I am, faster I learn, the more intuitively I create.

However, play the growth in a company based on this pattern as well as insist that all may live moments of devoid of knowledge is quite difficult to manage: unless someone on the other hand, deconstructing the process, delegates the verticalization of expertise, maintaining a transverse balance to all the workers involved, according to an ability to report and modulated management and built correctly time by time. In this way, it is clearly shown how the operating level "of doing" (and therefore the real mastery and true consolidated company experience) can be better expressed (but only if the company doesn't reject the comparison with what is outside its competence) and the more strategic level of "thinking" (and therefore the extension of expertise in other design areas) can equally access to all the skills that are necessary to make the projected innovation a concrete fact.

Effectively the "design" as a methodology deconstructs first a series of consolidated experiences for "procedural" reasons and applications, but in some cases, it does not take full ownership of the reconstruction process, delegating without handling, for example, details related to projects' sustainability, assuming infinite resources, losing the sense of the inherent value of what was taking place, according to a just and fair effort of creative competence.

### **Bonds and Opportunities: Human Resources and Change (DESIGN THINKING)**

"Design Thinking is an innovative management model of business management, used to solve complex problems that involve risks in decision-making."

A generic definition that drives the attention to the concept of risk in decision-making. So, is a designer a kind of professional who takes over personally a risk? Or is he/she a person who stimulates any kind of decision? If you move the focus from the "risk in decision-making" to "risk of success in decision-making" you get that the same methodology becomes a managerial method of management used to solve complex problems that involve successes in decision-making. The difference is not in the point of view of those working, but in the objective data that endorse the strategy of those who support the decision-making. Getting a perfect product does not mean answer correctly to the market needs.

Mostly in modern terms there is no longer the concept of failure: Tim Harford explains in his book "The error praise" that we live in a society that wants only perfection, so hard that it becomes increasingly important understanding the importance of a mistake feedback and its importance within the path of education of each individual, but also of each company. This happens because, due to rush and to economic needs to cut costs, we mainly give precedence to the "doing" instead of to the "thinking". But if you put constraints to the "doing", "thinking" creates opportunities. And if you put constraints to "thinking", you simplify the operations of "doing". But you cannot do it from inside: there's too much involvement and lack of fairness. From the outside you are more objective, and you facilitate better the process related to the choice. These are concepts and work habits which cannot be reached quickly: you can quickly get to the aim if a kind of urgency is felt in a widespread way through all levels of the company, otherwise the need for awareness of all operators can need several times that is various from individual to individual, from department to

<sup>6</sup>The deconditioning, is a phenomenon that indicates the partial or complete loss of physiological adaptations, anatomical and of performance exercise-related as a consequence of a temporal period of variable duration during which occurs a reduction or cessation of physical activity. In a figurative sense, in socio-cultural sphere, it can be defined as anything that takes away from an addiction of any social or cultural nature



department, from manager to manager. The possibility of change lies mainly in human resource that shares the philosophy of design thinking applied to anything that is not only design, starting from the approach, which is the first innovation concrete stimulus.

The key element of the change as outlined above, that we (UMANIA's People) call Project Management, is then in the transversal horizontal ability to handle specialized vertical projects: manage in a cross-disciplinary manner simply means ensuring a functional interconnection between different people in different contexts with different Business Unit representatives, whose only unique touch point element is the name of the entity that pays their salary: after years of specialization and verticalization, back on top until the strategic level is a complex operation, and full of risk that everybody will carry on.

The plot of the relationships can be managed from the outside in a harmonious way to ensure the proper alignment of all operators, from those who just want to focus on what they do best, to those who are willing to try to do something else, to those who want to change because they want a change. The real awareness of the management lives not only in the need to provide competence, but in the need to open up to all those external resources that provide other points of view at the working tables: a necessity of sharing that often is difficult to combine with the old mentality, and which sometimes puts the emphasis on the level of economic sustainability of the enterprises. Whatever is the project, this will be grounded as soon as the approach to the novelty ensures equal dignity to both the internal competence and external/outsider competence, all moderated by a "facilitator" that with the steady eye on the focus to reach, finds the point of balance between strategy and operations, according to comparative and sharing lines declined in the needs of the market and the consumer, to the detriment of the creation of fictitious demands from large economic impact but short life span. The "facilitator" becomes the key element of a team in which two big needs shall be satisfied: great expertise in the data and information management not to lose the focus on the goal to be achieved, and consolidated soft skills related to interpersonal domains. In this way, you aggregate as many elements as possible around those touch points, which then gradually will be creamed, leaving space only to the ideas that may become concrete on special condition of being, in particular: suited to the context of reference, sufficiently alternatives to consolidated, technically achievable and functioning, economically sustainable, aligned with the needs of the market. Managing this information properly means manage a multidisciplinary project and operate in terms of project management.

Anyway, we're not necessarily talking about a person: we are really talking about a function, that if properly accomplished leads to success stories, as it combines theoretical data, practical operations, identifying the different levels of the company to be involved, without losing view of the strategic plan, declined correctly down in the market.

Declining these thoughts in a logical goal-oriented thinking, it becomes clear the needing of giving new meaning to the project concept according to an acceptable "storytelling" that promotes fresh and creative approaches, reflections and stimulations "outside the box", catches prospective aspects outside of ordinary and exploits the traditional competence to break the limit of tradition itself by acting on three distinct levels:

- Bottom-up: operational level which requires integration of skills to stay updated on the market
- Top-down: the strategical level which requires adjustments in the running to be lowered into the market
- Leverage: balance between the two levels, which requires facilitation and constant correction to realize the project

## CASE HISTORIES

In the design area it is quite complex to mention specific cases without incurring in special privacy policy and nda connected with intellectual property concepts, but there are case histories, which under the profile of PROJECT MANAGEMENT can be replicated in a pattern partly due to the double-diamonds front design, partly reconstructed according to the strategic storytelling of the management level and the assessment on the human resources level. The methodology we are talking about is an exclusive and registered brand by Umania Srl which first began to experience it, and refers to Twenty4you® services

CASE 1 - 24U – Track&Designers e Management : FROM THE PRODUCT TO THE PERSON – Experience a successful product

Thanks to the experience of Angelo in Whrilpool, we recognized the exigences of a customer market oriented that last year decided to open the business to all the new possibilities offered by the design approach. Clearly, coming from other company consolidated experiences, it was no possible for the management to innest a design driven strategy directly on the staff, without causing disassessment due to the necessary change of the possible direction of the production.

There was then the necessity to create something new and unexpected, that create both wonder and urgency to approach the products under a complete different point of view.

During a workshop that involved an anthropologist and a business psychologist, a design strategist and a soft skill trainer, a marketing specialist and business model specialist, we act a complete change of perspective, creating a bond not on the product, but on the comfort of the person in using the product: so the product , and its new shape, become the possibility to experiment new perspectives under the ergonomic way of proceeding, aligning all the staff in the needing of changing manufacturer and technical solution, spuring the necessity of new communication solution.

The action involved not only all the company business units but also all the possible subjects that cooperated (even the main suppliers were involved) under a multidisciplinary perspective, driven by the main project manager, esternal to the different influences, that governed all the process. The new product is now the first of a new line, and it's near to its market launch.

CASE 2 - Case History 2 : 24U – Track&Trainers and Mentoring: THE HUMAN RESOURCES AT THE TIME OF INDUSTRY 4.0

It is very difficult to understand the fear of people comparing themselves to the necessity of a change. The only difficulty in changing is the first step, so sometimes people declines the responsibility of doing the first step that represents the beginning of everything.

We were contacted by a big company, which was involved in big changements due to the necessity of adequate the production lines to the new technological features and IOT system. This fact mainly reveals the necessity of updating the workers first and the machineries after.

Considering the staff, the updating process wasn't so brilliant, first for the age of the workers and second for the speed of the process. Moreover, the management considered the necessity to evolve quickly, missing information in action, and giving the opportunity to workers to talk about what could be interpreted (instead of correctly communicated and understood) and this fact opened the door to great misunderstanding. At a certain moment last year in September the internal PM Officer resigned, and the firm just fell in a loop of constant growing of dissatisfaction and lack of motivation.

Solving this problem was not so easy as the necessity was to prove first that a change could be possible and effortable without big traumas for the workers.

Searching and asking cooperation among other Umania's customers that already faced up the changement, we could share a multidisciplinar table of work, involving big names as Brembo, Carel, Dinema together with the marketing department of Kilometro Rosso in a meeting that

showed mainly the big opportunities that Industry 4.0 allowed: this somehow reassured the big firm of the necessity of organizing better the communication inside the firm. These gave an impulse to investigate better the interfunctional communication inside the different departments and the result of this investigation were multiples: first the necessity of new Kpi more centred on the new shared goals, second the necessity of using some key figures in a new role training them as inside trainers to guarantee the real competence transfer not to loose the experience, third the necessity to organize new external training to open to new soft skill solution to effort the changement.

On a top level, a mentoring project began to allow the management to put theirselves in the shoes of others, to share different points of view and organizing together to find new solutions for the staff. The process is still on going, the feedback are very good, the firm is reacting well to a good compromise that is changing people without blocking production nor loosing market share, meanwhile the adjustment is proceeding.

### **SPECIAL CASE HISTORIES**

**HIC ET NUNC** – From the product to the economic and social ground

In december 2015 a private family with a big vineyard property asked information about the possibility to develop a project finalized to the building of a wine cellar. Thanks to a previous experience in the same field where the necessity was to find a wine selling strategy which allow to sell wine without declaring the product, Silvia decided to take the challenge.

The project started with the analysis first of all the possible costs of the building (just to have an idea of the total amount of money) and second with the analysis of the territory and the possibility guaranteed by an enologist who declared that the quality of wine will result very high. After that, instead of proceeding with the architectural project, we decide (together with the property) to launch a series of spin off linked to the territory to pre-announce the coming of the wine: four qualities to start already in vinification by a third part, the correct design approach on the naming for cellar and wines, and a series of cultural and turistical activities ready to receive tourists, to begin to sell wine to understand tastes, quality and marginality and to guaranteed a cash flow before spend money in building. The multidisciplinarity of the activity reveal the big possibility of exploitation of the territory and will defined a main target, that will be already loyal, when the big economic effort of the cellar will arrive. This gives a special character of sustainability to the project, that will take the occasion to redecline the term “sustainability” under the four european pillars: economical (as we will sell before face up big costs), environmental (as a series of bond has been given from the green mobility to the correct re-use of the grapes and its products), social (as this activity will allow the territory to be well-known, and lots of cultural activities will be taken over) and of governance (as the management decides to share their goals with future workers, acting in constant updating and education of the staff). The Project Manager in this case related to all the supply chain, and keep all the activities on time, continuing a special research on possibility of developing related to strategic marketing innovation, and transversal selling channels<sup>7</sup>.

### **PULVERIT – From an accident into the firm to the awareness of the workers**

As in a lot of Firm, mainly the safety is a burocratic process. Unlikely, when an accident happens, everybody understands that burocracy won't save human life. What happened in this firm near Milan, is not so tragic as in other more famous context, but it was the excuse for the HSE Manager to finally obtain a special awareness process which act correctly on the consciuosness of everybody, to awaken and put again to the attention of all the people the necessity to safeguard itself on the working place.

<sup>7</sup> Special thanks to Mr. Mario and Massimo Rosolen and to Mr. Polattini to the authorization to talk about the project. Special thanks to Mrs. Valentina Pascarella for helping me in coordination of the supply chain.

Together with a staff of consultant, we decide not to erogate any course but to monitoring an internal process of activation af a virtuous cycle of increasing attention of each activity, thanks to a proper methodology, that allowed the people involved in keep an eye not only on themselves, but also on the other, not to spy anybody, but to help and to congratulate each other, when something proceeded particularly well. Thanks to this process, a little team began to solicit as the worker as the management to improve working condition, taking the own responsibility of the little acts they can manage to help the firm. The management answered to these little actions renewed some machineries and allowing other sharing moment to involve more people in the monitoring action. Now, after this process, lasted one year the UMANIA staff involved in the project, is writing a book together with the workers, to underline the good job that has been done together and put a milestone to proceed in this direction, to show that moving towards a real improvement of working condition is possible and replicable in other context. The firm will use this book as proof of the well done work, and of course as a marketing instrument on the main customers<sup>8</sup>.

## Conclusions



*Fig.2 The composite opera: “Special and Combined Machine Tool (Architectural Cells in Approaching)”, 2016 realized by Giusy La Licata, during the context :” Artist In Residence – Kilometro Rosso” The structure of Giusy La Licata is made up of parts that allow to see relevant discourses and processes about Umania organization, otherwise considered elusive and unconcrete. It’s a combined and multidisciplinary installation of books and wood, plexiglass, papers, canvas, fabric, cardboard, glass, plasticine and steel.*

Driving a project is not just like driving a car: it is difficult to find precise rules as the exigencies to evaluate the same are really quite different and need to be shared in the right ways and on the right times with all the actors of the project. The tuning you have to find, is a fine one, among people, subjects, instruments and means. Of course not all the projects need a Project Manager, but in our experiences, as we’re living in a global world, when there are too possibilities the main risk is the stasis, a blocked economy who answered to the wrong questions, waiting for someone, just like in

<sup>8</sup> Special thanks to Mr. Stefano Saccardi for the authorization to talk about the project, and especially to HSE Mr. Alberto Casati for the coordination of the team, the inner support for activities and the patience showed with all Umania’s Staff.

the Samuel Beckett's Opera<sup>9</sup>. It's difficult to talk about the main characteristic of a Project Manager, except for human characteristic: patient (but not too much), pragmatic (but with the right flexibility), assertive (but respectable of the property and the owner of the project), objective (business need strongness, especially in doing step backwards, if the project needs it), responsible (for his/her action, but also for the action of the supplier).... And we can go on talking about culture, knowledge, relationship and everything that can help to develop correctly on time on cost on deliver all the different phases of the project, but mainly there are very particular multidisciplinary characteristic: the capability of compare uncomparable things, draw what is necessary from different cases and activities (even outside the sector of merchandise), and make sustainable whatever seems unsustainable. The only school we know to be a good project manager: do and share. The only way to go towards a real change.

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<sup>9</sup> Samuel Beckett, "Waiting For Godot", Faber&Faber editori, Londra 1956



## **Sign as an imprint of the planning character: analogies between *automotive and yacht design***

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### **Introduction**

The shape, as an external expression of a material and functional content, takes shape through the sign, which is something permanent that defines the original character that we see in the final work. This is a continuous process, from the idea to its realization, from the pencil to the three-dimensional shape. In this transformation process, the sign goes beyond its connotative function, and becomes a complex process that includes several functions that are defined by the industrial design's features, different from any other product or figurative work.

This multifaceted discipline's structure changes according to the creative and the realization process, and to its productive and commercial features.

Every branch of the industrial design is therefore represented by a "typical procedure", which varies according to particular reasons, areas, planning processes, from the creation to the actual use and reutilization.

Some branches, in the area of the industrial design (i.e. automotive and nautical) are distinguished by particular similarities: a formal one, because the analogies between the single parts; a functional one, because they have the same goals (even if they reach them in different ways and contexts); a social one, because the identification process between product and consumer are essentially similar; a productive one, that refers to the work's standardization as a synthesis of heterogeneous, single and unique components. And, to conclude, a formal similarity, because these branches are both characterized by a mutual exchange of stylistic solutions, and by a common representational identity that can be seen in the relation between the full and empty areas of a living space, in the bilateral symmetry and in the "direction" (front and back) of the product.

Therefore, according to the product's features, the production process has a specific development, that shows and organizes the above-mentioned features; a step-by-step process focused on developing and improving the contents that, from the first idea and sketch, represent the work's essence. In this continuous process, the graphic management modifies the instruments' operating modalities in order to deal with the different steps of a project, and with the differences in the building, productive and commercial process.

The design instrument is therefore a unique instrument that shapes itself according to the complexity of the work, being at first an emotional instrument (where the idea takes shape), and becoming, later, an operational, calculating instrument, which in every phase of the project has to shape and identify the final work.

The sign is therefore the imprint that defines the intrinsic character of the final product, and the aesthetics represents its technologic and practical aspects. This way, the sign is connected to the

projectual process, and to the relation between the shape and the other elements of the creation process, like the practical features of the product, which can modify the approach to the project itself. In general, sign is an element in its early stages that can be improved, but in some fields it can also be the cornerstone of the formal development, the *concept*'s key element.

In car and nautical design, sign is the key point that underlines the specialization of the representative technique, and through which the designer starts its complex project and creates a connection between the spirit and the expressivity of this project. This way, the project's function and its iconographic meaning can be interpreted and transmitted.

The sign's expressivity is, therefore, essential for the design, because it enlightens the product's intangible qualities, which are thus "translated" in an aesthetic and figurative language: speed, economy, comfort, dynamism, movement, lightness, agility, versatility, capacity, etc. All of them can be perceived thanks to the design's formal codification.

The sign goes beyond the limits prescribed by technique and production, and defines the object's external characterization and, consequently, the user's perception of it. The aesthetic sign, in this case, is a planning and informative instrument.

Considering the tools used to manage the project in all its steps, sign could be a synthesis of all of them, and it can change its meaning according to the object's complexity and the different planning procedures.

### **Sign as a means of identification**

The representation process is first and foremost aimed not to the graphical realization of a design concept, but to its embodiment, which is obtained through the correct management of the interrelationships existing between creative (idea formation), representative (idea conveyance), executive (identification of the shapes based on materials and productive processes), technical-management (the project then becomes the only means to the management and interrelation of the complex architectural technical constraints), and implementation aspects.

The summation of these properties defines the creative, communicative, executive and technological characteristics of the project.

The first step of the process is therefore the identification of the subject. It involves the creation of the first draft that puts the idea on paper and that will be the basis of the designer's *modus operandi*. In this phase, the technical component is dependent on the designer's sensitivity, which will determine the design philosophy of his work.

The identification process of the industrial product represents a gap in the entirety of the project, and the standardization extends its operative boundaries. The user loses its individual character<sup>1</sup> to become more general. Therefore the customer is no longer the user, but a vehicle of the planning project that is always more complex: and this feature affects the object's formal and functional qualities. However, the object's aesthetic features are not only related to its function, in order to complete its technical features and its reproducibility, but also to the immateriality of the aesthetic component, that includes the expressive values that are able to reach a wide range of potential customers and users. The figurative design's aim is to create recognizable elements for the users: thus, the product has a communicative function, more than a mere functional one, which is basic in its production history.

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<sup>1</sup> The formal management of cars and nautical field in history has changed according to the social context and to some easily comparable evolution processes. Both evolved through a pre-industrial process, which is individual and focused on the construction of a single object according to the client's specific request: in this tailor-made process, the relation between the designer and the client is personal. The customer used to identify the features that he wanted for his vehicle according to his social status and the use of the product: official, sport, transport, according to the status.



### Sign as a tool to manage the shape

In general, identification contributes to add communicative meanings besides the mere functional ones. But automotive and nautical fields can count on a figurative heritage and a building tradition that have both a technologic and an aesthetic side: for most creators the characterizing style is a consequence of the historic formal heritage inherited from the first half of the Twentieth Century; for the others it became an heterogeneous, iconic, assimilated element that can also be unrelated to their direct building experience.

The iconic reevaluation is a recent phenomenon, given by the awareness of an aesthetic heritage that grew up with the technologic progress: the reinterpretation of the creation process comes by the culture of image in the productive field. Initially, the formal aspect was subordinated to the functional one, the aesthetic value was an ancillary quality due to the creator's sensitivity, and the formal solutions produced by a creator became, lately, iconic elements in industrial design. The product (boat or car) was composed of two separated elements: technique (engine, frame, mechanical systems) and the external equipment, which was still adaptable according to the client's needs.

At the beginning the eclectic designer had to solve technical (mechanical), building (optimization solutions) and aesthetic problems, according to the formal principles of his social context and to the different categories of users. In the industrial development era, means of transportation were essential, both for their utility and for being a status: a symbol of independence and wealth. In this context, the project was merely technical, the graphic was impersonal and focused on the structure, and the basic communication element was addressed to the personnel. It was the "engineering" period: the designer had a merely "material" and utilitarian aim, by defining a means of transportation that could accomplish some basic functions: cabin, mechanical equipment, engine, frame and the connection between the single parts. The design process' aim was creating a stylish garment combined with an optimized mechanical system, creating a harmonious relation between functionality, technique, body: a composition of three distinguishable parts.

At a first stage of maturity of the design in the process of transformation from "productivism" to post-industrial stage there is a change of values, in the formal language, from the value in use to the perceived value, *"a real change of nerve blood skin, a change of nature is undergoing a metamorphosis, if the value of design in modern society was approaching the car in operations, processes, aesthetics, same exposure of their syntactic mechanisms, it is clear that today's architecture moves its center of interest in having a form that informs ... a return to beauty in itself as a dimension of the soul and not in the practice of utilitarianism"*<sup>2</sup>; this step also became evident in the methodology of representation, and therefore, in the management of the compositional project, which was then given to the appropriate figures was structured so the first design centers - independent entities, with respect to the technical design leaders - likewise authoritative in the field of the "constructive" process of new models. The process that leads to the generation of the shape, based on a new equilibrium between technique and form, is structured in a unique syntactic complex in the composition and representation, attributing the image communication processes - typical of figurative art- also to scope design. The graphic sign, enriched of new expressive canons, is articulated in an original expressive capacity, moving from the traditional scope of the technical study to the media of the communicative vehicle.

The change of mode and vision could thus identify with the passage of the automobile phenomenon and Nautical from the small elite circle of totally ancillary goods to new dimension of wide use assets. The shape was thus conditioned by the production maximization. Only in the next step, the post-industrial era, formal and functional values are replaced, in hierarchical order, from formal

<sup>2</sup>Kurt w. Foster, Venice International Exhibition 2004, art. Interview for L'Espresso 14.01.2004

communication: by the object's ability to communicate - through aesthetics - about their content, not just functional but empathetic; identifying the empathy as the most advanced frontier of the communication relationship between object and user, through which the producer identifies a series of peculiar material values, that are transmitted through the form.

In the fields of car and yacht design this aspect is crucial, because it allows the identification process by the user with a series of attractor elements "for a set of individuals whose lifestyles are recognized in some element of the attractor"<sup>3</sup>. The designer's task is to transform these elements into identifiable iconographic values and keep them current, depending on the evolution of the social implications related to the mechanisms of perception<sup>4</sup>.

### **The sign in the communication of invisible qualities**

The epoch-making transition to the post-industrial stage is thus determined by the overcoming of the logic based on form-function relationship and the constructional optimization, permeated by a serialized vision of both the manufacturing process (which underlies the shape) that the classification of the needs, according to categorical (and impersonal) objective parameters.

The overcoming of this vision by a point of view based on an empathetic relationship between the object and the user, considered in the individual subjectivity, identifies a new design current that leads to the formal dimension of the object: the value of which no longer exclusively aims to the use, but, as a result of the new compositional language, it is strongly binds to the image, by replacing the material quality with the perceived one. The more shape can be identified in the individual specificities of the user, reflecting them, the more it is emphatic: the perception of an object, likewise to its purpose, becomes a significant discriminant for the design product.

In relation to this aspect, a determining concept is "drawing the invisible", "the first invisible aspect to deal with in the industry is the brand's image"<sup>5</sup>, i.e.: the intrinsic value, detached from the formal result object, identifying a set of qualities - distinctive of the brand - that historically assimilated, it is commonly recognized as a matter of fact, as the expression of a genetic heritage; character values that are repeated, through the constructive philosophy, in the production of new models, and consequently generate an identification process on the part of users, a style in which one can recognize himself.

We have, thus, a new field for the traditional instruments of the project; or, shape drawing also becomes an interpretation that gives an added value to the design work, which goes beyond the solution of the normal technical-compositional issues, namely: the assignment, through a formal code, of a perceptual field abstract, external to the product realized, which is precisely the (invisible) brand image<sup>6</sup>, which is closely connected to the empathy, as a variable in the choice of any product, a car or a boat.

The shape is thus the vehicle through which the same functional qualities are transmitted to the user; the "perceived quality", in the broadest sense, we can attribute a series of meanings: from the reliability of use, to the care of the details, until the identification of intangible elements connected

<sup>3</sup> Rf: *Nuove Frontiere del Design: suggestioni e lusinghe del car design*, by M. Platania, DiTAC- quaderno n°6 novembre 1998, pg. 49.

<sup>4</sup> The evolution of the designer's work in the history of industrial products is always connected with the cultural evolution of society, which, over time, has become increasingly complex as social economic relations are enriched with new elements of reference: Well-being has led to an increase in the quality of life in general terms that has led to an evolution of individual instances in relation to the social categories of reference. In the field of industrial production, this evolution followed the order of social complexity by articulating accordingly. The design business in the field of automotive and nautical crafts has progressively supported the tendency to offer increasingly complex elements in components and devices and functions.

<sup>5</sup> M. Robinson, in: *Nuove Frontiere del Design: suggestioni e lusinghe del car design, Incontro con Andrea Aparo e Michael Robinson*, by M. Platania, DiTAC- quaderno n°6 novembre 1998, pg.11.

<sup>6</sup> The image of the brand, understood as a complex of quality (constructive evolution, technology, reliability, aesthetics) historically affirmed and recognized.

to the “character” of the object, i.e. the close correspondence between the aesthetic-functional connotation and the communicative code that it uses to understand the specific users’ expectations. The character, therefore, is the result of design specialization, which, unlike the individual handmade artifact, uses peremptory terms of reference categories, characterizing its products according to identification codes determined by sociological analysis on potential buyers.

The sign, as generator of the shape, activates thus the mechanisms related to the image perceived through an immediate connection between the character of the object and its user, going beyond the utilitarian limit to affect the emotional sphere.

In the automotive industry, such as in the nautical field, the processes of identification occur through the use of particular typical expressive codes such as the brand’s stylistic imprint: they are transferred on elements which are strongly influenced by the dynamic component, an intrinsic quality of the product that must be shown in the whole formal structure.

In the current period, the technological evolution has now produced a leveling of the qualitative standards and almost homogeneous reliability indexes; the reasons of a choice, beyond the technological performances and the product quality (the target of a product, the choice of a brand), are reflected, then, more and more on selection criteria that are not strictly rational, but progressively affected by the emotional component. The choice is increasingly influenced by the visual communication: the formal apparatus becomes evocative through different styles and lifestyles: habits and behaviors proposed daily by the media.

A particular category of products, therefore, has no longer a merely instrumental use, but it becomes a leisure element, which must produce emotions, and support the user’s moods and character expressions: like it happens for other product categories, the object becomes an identification tool; an extension of the concept of status symbol that once included the criteria of social classification, now an obsolete concept. The aesthetic system of reference through which the sign is materialized, identifies new selective criteria, where traditional proportional relationships are rewritten and reconsidered.

### **The identifying mark**

Each manufacturer is characterized by special design solutions which, in design, determine the typical aesthetic connotations, with which designers must compare: a heritage that reflects in the projects, of which the designer becomes an interpreter, updating those values and applying them in the mutation of current conditions: social evolution, influence of trends, technological progress. In the assimilation of iconographic elements of the production of each manufacturer, the sign becomes the interpreter of these peculiarities.

In the next step the designer’s activity adapts its operating characteristics in relation to the changed social conditions of industrial development: the phase of the maximum development can be identified in the productive specialization of competing brands that, in their historical peculiarities, find a pattern of development and distinction from the competition. Technological peculiarities of the individual brand often result in an aesthetic peculiarity, an identification code, a characteristic physiognomy tract: those elements complete, with the visibility, the constructive terms of the brand’s philosophy. The exterior shape starts to be considered as the means through which they materialize the invisible car’s qualities: performance, comfort, build quality.

Those elements need to be visually transmitted to the user or to potential buyers. The shape is no longer the result of a functional solution but becomes a vehicle of information which is able to arouse emotions. The designer’s task was therefore, in this case, to make these particularities visible, and variable in their nuances and accents, according to the different manufacturers’ conceptions. The designer-stylist is called to translate the particular technical solutions adopted in outward terms: to shape, through an identifier aesthetic code, to the technical characteristics of the apparatus, which

also constitutes a formal, unavoidable constraint.

A methodological vision still guided by pragmatism which, however, was able to produce an aesthetic code maker of merger between technical solution and stylistic composition, in a continuum. The use of formal elements, distinctive for each brand, became the basis of an iconic heritage that in its continuous revision was supposed to become the character imprint of each producer. It was thus possible to adapt technique particularities to stylistic solutions, to complement each other in a sort of compendium. In relation to the design specialization, the designer physiognomy tended to emerge more and more, compared to that of the technical engineer, that sometimes identifies himself in an autonomous figure, the one of the “designer” specialized in the casing of the general system. The management of the shape now acquires an autonomous development, although it is not detached from the constructive process, according to a methodology that is structured on the increasing complexity of the design process of the object, dependent on the technological evolutionary components (related to the creation of the final product) and also on the sociological ones (linked to its operational characterization) in relation to the reference categories.

The external apparatus is characterized by two factors: the first - typological - given by the technical casing definition, it consists of a series of characteristic elements of recognition, changeless and common to any brand of cars and any category; deeply linked to the evolution of the constructive process, technology, the technical constraints, the relationship between the functional element and the powertrain; the result of a joint evolution aimed at finding the best aerodynamic coefficient, the optimization of assemblages between the various components, of the living cell sizing (in relation to the development of safety requirements), of the general proportions (and between the parties), in relation to the evolution of performance parameters: elements that belong to the technological field of formal solutions<sup>7</sup>, which are shared by most manufacturers because they are part of an evolutionary status acquired in the technological development<sup>8</sup>.

This is, then, a part of the design, which is closely connected to technical-constructive aspect, linked to the compositional syntax of parts: a series of formal solutions dictated by the evolutionary state, encoded in a given proportional code, which identifies the dating of a project, its timeliness or obsolescence, its placing within a precise historical context. The belonging, or not, to the *shared formal canons* depends from this aspect.

A second area of action in the definition of the form (inherent in the empathetic component, the subjective sphere of the relationship between means of transport and user) is connected to the interpretation of the iconographic code related to the specificities of the brand and the precise reference model, a work of analysis, detection, selection and re-interpretation of the aesthetic characteristics of the brand and the model in particular - namely, of historical distinctive marks - in tracing a sort of genetic code identified as *family look*.

This complex is then reworked according to the particular interpretation of the designer, who applies the iconographic heritage - stable, as distinctiveness of the mark - to a formal apparatus - changeable, because susceptible by technological update - (fig.2).

The technological context of reference changes, but the distinctive element, in which the user recognizes himself, remains unchanged. This dimension of modern design is a mode of implementation that is different according to the degree of intervention.

This aspect of modern design finds a different mode of execution in the various degrees of intervention.

<sup>7</sup> They are part of this common proportional canon: the inclination of the frontal parts, the wheel arch size, the height and incline of the waistrail, the wheelbase, the inclination and the thickness of the rear uprights, the inclination of the bonnet.

<sup>8</sup> Likewise, for boats we can detect this effect in the aesthetically recognizable features: height of the bulwarks in relation to the length, the shape of the insulator, the inclination of the aft mirror, the inclination of the windscreen, the characteristics of fittings between the lateral and front surfaces of the superstructure, Window cuts.

The combination of the two components can take place in different measure: if the formal system is focused entirely on the evidence of an historical distinguishing sign, then the formal interpretation became a task of “revival”, that accentuate the aesthetic character of the original model, reviewed according to formal standards of technological update<sup>9</sup>: in this case the particularity of the shape is totally identified in the past canons, with an operation “tout court” in the recovery of forms which in the past were justified by a specific type of construction; curved shapes, determined by precise sheet metal molding methods, chrome moldings -like closure elements of the junction imperfections, in a still imprecise procedure in assembly-, the result of manual operations, effect of an artisan constructive procedure.

In this context, “the car design, as the ability to develop and create quality of form, becomes the primary element of the production cycle: it becomes, in technical terms, the highest segment of added value”<sup>10</sup>, with which the stylistic distinctive element of each brand, applied in a more or less explicit mode (depending on the designer’s vision) to the general stylistic apparatus, activates those attractive mechanisms inherent to human perceptive schemes, aimed at re-evaluating the identity of form by the emotional aspect, understood as “supplement of soul”<sup>11</sup> of the overall design.

## Conclusion

### Sign as a visual tool

Historically, the main instrument through which the designer manages shapes, the first emotional impact with the generating lines occurs through the ideation of sketches, drawings, made in the profile and in perspective views that define the main characteristics, the relationship between the solid and voids, the shadow lines, reflections, according to the now codified representative techniques.

The methodology through which this process takes shape is the immediate interaction between the eye and the hand, between the perception and composition process: the graphic development of the project is through the sign - with security, sensitivity, speed of execution of the drawn - which gives to the line a particular dynamic, according to personal operational techniques that characterize the specific nature of each designer.

The graphic devices that ensure control of the object designed, aimed at the final output, optimized in relation to the timing of the project, are accomplished through a representative code that becomes personal expressive language, as well as auxiliary mechanism to indicate the shape in three dimensions, the output of the concave and convex surfaces, the contrast between light and shade, transparency, the relationship between solid and void: the graphical synthesis is at the same time a modeling tool; the generation of the form identifies herself in the information of that. Due to the code representative, the profile view holds, as well, a series of functional information for the three-dimensional development of the project<sup>12</sup>.

It is thus consequential that also the next phase, the control of the plasticity of forms, still takes place in a conservative logic, wherein the modeling is still manual application of the designed shape, through the clay *maquette* that allows to calibrate, simultaneously in the immediacy perceptive, the design idea defined on paper, in the correspondence between accent lines, shade and “chiaroscuro”,

<sup>9</sup>The case of the Mini, the 500, the Beetle or, otherwise the PT Cruiser, where there is no direct identification with a model of the past but with general aesthetic canons.

<sup>10</sup>M. Grandi, Car Design Workshop, Alinea, 2006, pg. 26

<sup>11</sup>S. Bellu “La Renaissance Italienne”, in: Automobile Classic, n°129, maggio 2003.

<sup>12</sup>This procedure is particularly significant in the field of car design compared to that of the yacht design: for the latter, especially in large vessels, the model loses the content of a real perceptual control instrument, but related to a more advanced stage of the project - is a consequence of the three-dimensional computerized management in order to verify the quality of the surface shaping (eg models produced through the manufacturing additive).

with the actual physical response of the transmission of light on the materiality of the shaped clay<sup>13</sup>. In this regard it is important to note that this conceptual methodology provides for substantially similar procedures for the car design and the yacht design, in the process of compositional approach. In fact, if we consider the methodological evolution in relation to the project supporting technologies, in the representation and geometric control of surfaces, computer tools intervene only at a later stage of the design process, relative to the transfer of conceptual work to the constructively complex, reproducible: a subsequent reprocessing of data made according to the traditional practice of manual design that is and will remain irreplaceable for the identification process itself of the shape in its essential terms, which therefore cannot deviate from the physiological nature of its realization, which most immediate way of meeting and feedback between the idea, its materialization, its direct morphological correspondence in inherent aesthetic canons.

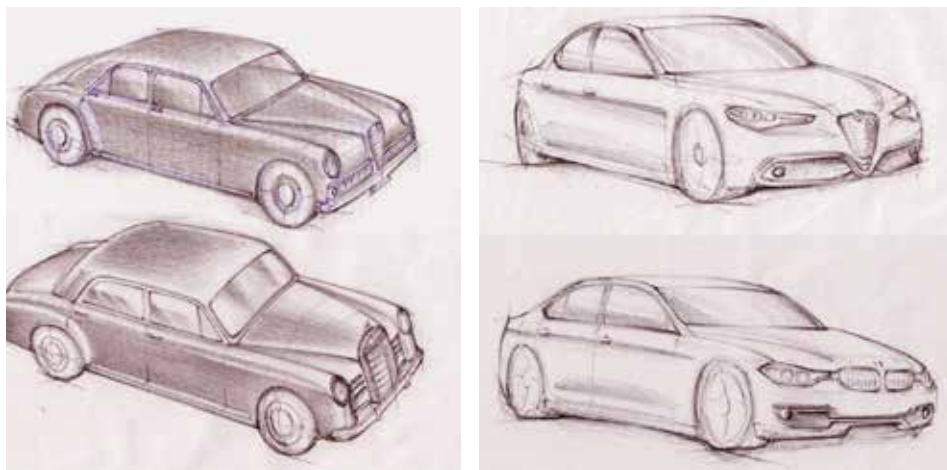


Fig.1. The front becomes the stylistic impression characterizing the image of the brand, in a general formal plant that reflects shared aesthetic canons, dependent on typological evolution. Left: AR 2500 V6 and Mercedes A180, 50s; right: AR Giulia and Bmw 3 Series, current times.

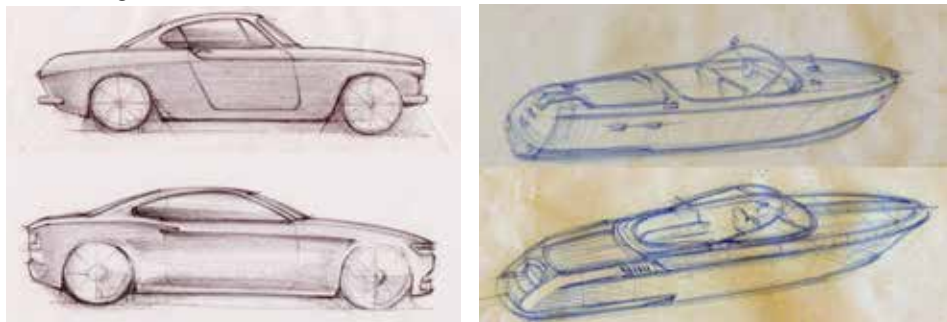


Fig.2. The formal reinterpretation of the stylistic canons typical of the brand: a common process for car design and yacht design. Left: Volvo P1800, 60s and Concept Coupé, current times; right: Riva Aquarama, 60s and Aquariva, current times.

<sup>13</sup>The profile for both car design and yacht design is the distinctive view from the point of view of the formal setting: each line generated in the side view determines a particular reflection in surface development.

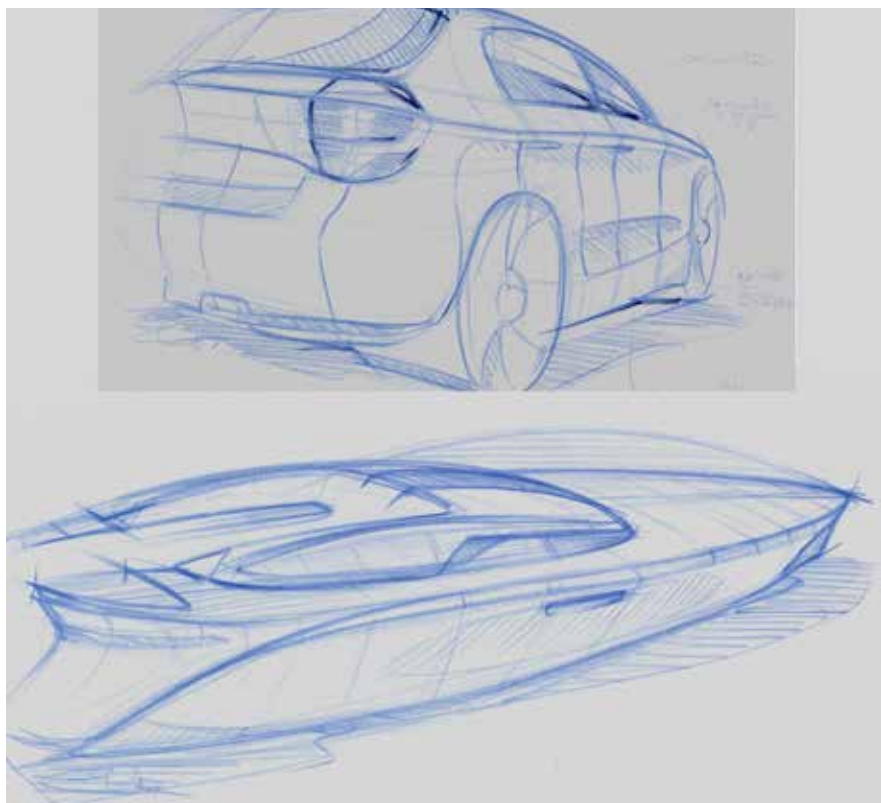


Fig.3. The car styling in surface modeling is transposed onto the boat-body, reproposing the same types of surface shapping, fittings, “lines of shadow” and reflection. Bmw I Series and sailyacht Zeydon 60, designed by Bmw Group Designworks USA.

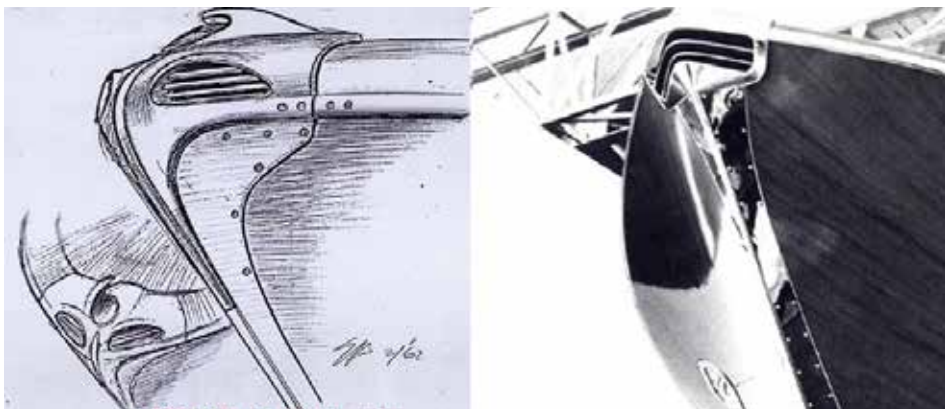


Fig.4 Giorgio Barilani: study of aesthetic details for Riva Aquarama.

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## From measuring to revealing. 7 paradigmatic actions for the construction of models as tools of representation

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### Abstract

The experience gained, as research associate, during the research titled: *Designing, organising and managing a new Model Construction Lab: methodologies, materials and tools*, carried out at the School of Architecture Urban Planning Construction Engineering (AUC) of Politecnico di Milano<sup>1</sup>, provides the background to the writing presented on the conference day.

Based on the etymological definition of the terms: *maquette*, *plastic* and *model*, we proceeded to identify a temporal sequence of the different design development phases – ideational phase, verification phase and final representation phase -.

The aim of the research was to formulate some methodological procedures via seven different design actions: *carving*, *moulding*, *folding*, *digging*, *dissecting*, *printing*, *stratifying*, procedures capable of bringing into focus some representation techniques in line with the compositional *theme* of the designed space. An equal number of model types corresponds to the seven different design actions: the *carved model*, the *moulded model*, the *folded model*, the *dug model*, the *dissected model*, the *printed model* and the *stratified model*.

Each one of these models is associated with a specific and distinct quality of the tectonic space understood, in its etymological sense, as art of building (τεκτονικός).

In this construction of hypotheses, the architectural model is defined not only as a representation tool alongside other tools, such as for instance the classical or digital design, but also as a tool serving to build the compositional *theme* to be identified for the characterization of the architectural space designed.

### Introduction

At present, the Italian schools of architecture are seeking to define, with increasingly greater care and in an unequivocal manner, the training programs of their own students. This allows them to adopt a position of critical distance vis-à-vis the professionalised demands of the market. The need is to identify a training program centred on the architectural design in all its various expressions and nuances, while always viewing design as a matter characterizing the student's architectural training. In this regard, the new School of Architecture Urban Planning Construction Engineering (AUC) of Politecnico di Milano has adopted a new Three-Year Degree Course in *Architectural Design* (Class L-17), where the Architectural Design Labs of the first two years (I – II) have a yearly and no longer a half-yearly duration. As proof of a desire to lend greater specific weight to the educational activity of designing.

An integral part of this training program, centred on the *Architectural Design Laboratory*, is backed up by the modelling labs respectively found in the main campus of Milan – Campus Leonardo –

<sup>1</sup> At the Piacenza Campus

and in the campuses of Mantova and Piacenza. The labs offer, in addition to the spaces equipped with last generation machines (numerical control cutting, 3D printers), an intense and sophisticated training activity that becomes a support to the educational activity undertaken within the design labs. This synergy enables students to experiment space design actions through the construction of physical three-dimensional models, aligning themselves with their young colleagues from other European schools, where the modelling lab activity is an essential part of their syllabus.

## Methodology

As the research developed, the etymological study of the following terms: *maquette*, *plastic* and *model*, often used by architects in an undifferentiated manner, found a precise temporal slot in the phase of development, evolution and conclusion of the design itself. When, in fact, we carefully examine the etymological meaning of the three distinct terms, we discover that:

- *maquette* (from the Latin *macula*: i.e. small blotch) is used to entrench a first germinal idea. This occurs through a three-dimensional construction in scale capable of reproducing an architecture still in progress in its final definition. “*The word emerges in the VXIII century in the lexicon of fine arts to designate the first sketch, the first material crystallization of the idea, of the artist’s formal intention*”<sup>2</sup>;

- *plastic* (of Latin origin: *plasticus* – that has to do with moulding -, as well as of Greek origin: *plastikós* from *plassein*: fashioning, shaping, composing, picturing, moulding)<sup>3</sup> has been construed as a necessary moment for the inchoate idea to shift from the composition to the prefiguration of the architectural object;

- *model*, instead, (again of Latin origin: *modellus* from *modulus*, diminutive of *modus*: measure, extension, dimension)<sup>4</sup> coincides with the finalization of the architectural object – last phase – by defining the elements that make up the parts. This occurs through a measure, a form, a rhythm. “*Everything is precise and provided in the model*”<sup>5</sup>.

We might postulate the assertion that the *model* contrasts with the *maquette* inasmuch as in the latter, just as in the type, “*everything is more or less vague*”<sup>6</sup>. In this way, something analogous to the relationship between *model* and *type* propounded by Quatremère de Quincy is established for the relationship between *model* and *maquette* produced during the research in the lab.

The assumption intercepts the possibility of reading and selecting again, based on taxonomic rules, the modelling products developed during the history of architecture.

For instance, use of models was fashionable in the Renaissance due to the fact that the language adopted by architects made reference to the classical Greco-Roman culture, thereby falling back under the linguistic code adopted. The model of Brunelleschi’s Duomo dome in Florence or the model of Michelangelo’s St. Peter, realized by Antonio Sangallo the Younger, besides being tools serving to verify the static coherence of the design, were also useful tools for representing the design solution to the client.

Use of the model came to be developed since the middle of the eighteenth century, with the birth of the technical schools of engineering, for purposes of educating students by imparting knowledge of the by then ever-increasing complexity of structural solutions adopted in building the new infrastructural works, such as bridges and roads.

All the way down to the last century, through such influential personalities as Pier Luigi Nervi, who turned the model into the privileged tool for building his own architectural and engineering works.

<sup>2</sup> P.A. Crosset, *Microcosmi dell’architetto*, in Rassegna, no. 32, Electa Periodici, Milan, 1987

<sup>3</sup> Entry *Plastic* in the Treccani dictionary of Italian

<sup>4</sup> Entry *Model* in the Treccani dictionary of Italian

<sup>5</sup> Quatremère de Quincy, *Dizionario storico dell’architettura*

<sup>6</sup> Op. cit.

A *modus operandi* that defined *the form of the structure*. Precisely in these days, an exhibition is open to the public at Politecnico di Milano under the title *Pier Luigi Nervi, il modello come strumento di progetto e costruzione*<sup>7</sup>, supervised by Giulio M. Barazzetta, Gabriele Neri and Carlo Poggi. With the production of his models for exploring the *structure of the form*, the architect Luigi Moretti has acted as counterweight to the *model as form of the structure*. Worth mentioning in this connection is the 2010 exhibition headed: *Luigi Moretti architetto. Dal razionalismo all'informale*<sup>8</sup>. The exhibition was the result of a research project, lasting four years, developed by the Archive of the Modern at Mendrisio's (Architecture) Academy.

The Exhibition was divided into eight different theme-based sections<sup>9</sup>, of which the last three are worth mentioning: *Modulations of structure and form*; *Space as theatre of experimentation* and, finally, *Moretti and "Space"*. The exposition of the works attested the original research conducted by the Roman architect on the concept of spatiality, not just in the architectural field, but in the field of art as well, especially his research on the relationship between structure and form. Moretti explores the dimension of the *structure of the form*, unlike Pier Luigi Nervi who, by contrast, investigates in more engineering terms the *form of the structure*.

Instead, use of the maquette and the plastic developed in the early part of the twentieth century with Walter Gropius' school of the Bauhaus, in which representation by plastics as tools for conveying the architectural discipline to students was accorded preference over representation on paper<sup>10</sup>. We should bear in mind that even the artistic avant-gardes worked a lot with representations close to the technique of the maquette for their sketches, which they would subsequently develop through the plastics.

To the taxonomic subdivisions dealt with between *maquette*, *plastic* and *model*, we should add nowadays the objects built through the fast prototyping of 3D printing – additive printing -. In today's world, thanks to the use of increasingly faster Internet connections and to the culture of the new *Open Source* movement<sup>11</sup>, it revolutionizes the design methodologies at any scale – *from spoon to city* –. The *Fab Labs*<sup>12</sup> are the new ateliers of contemporaneity, reminding us of the medieval predecessors, or the new workshops of contemporaneity, reminding us of the first industrial revolution factories. They are spaces dedicated to the realisation of prototyped models through the use of digitized equipment – laser cutting equipment, scanners, 3D prints – that are revolutionising the modelling sector, and not only it.

<sup>7</sup> The exhibition, held from 14 March to 28 April 2017 at the "Guido Nardi" Exhibition Space, has been promoted and produced by the AUIC (Architecture Urban Planning Construction Engineering) School, the ABC (Architecture, Built Environment and Construction Engineering) Department and the Material Testing Laboratory of Politecnico di Milano in coordination with the Architecture and Engineering schools of Bologna's "Alma Mater Studiorum" University and Rome's "Tor Vergata" University.

<sup>8</sup> The exhibition was held in Rome's Museo Nazionale delle Arti del XXI Secolo (MAXXI: National Museum of XXI Century Arts) from 30 May to 28 November 2010, and was supervised by Bruno Reichlin and Maristella Casciato. It was promoted by the Architecture section of MAXXI itself, in collaboration with Mendrisio's Architecture Academy – Archive of the Modern – Università Svizzera italiana and the Central State Archive.

<sup>9</sup> Let us recall here the other 5 theme-based sections:

- *Architectures for the Regime. Linguistic styles for architectural genres*
- *Kinetic perception*
- *Expressions of the house of Man*
- *Collective residences. Creating or interpreting a place*
- *The American experience*

<sup>10</sup> N. Dunn, *Introduzione, in Come realizzare un modello architettonico*, Logos, Modena, 2010, p. 14

<sup>11</sup> In that connection, we should keep in mind the text by Carlo Ratti, *Architettura Open Source. Verso una progettazione aperta*, Einaudi Editore, Turin, 2014

<sup>12</sup> Fab Lab: *Fabrication Laboratory*

## Conclusions

Today, after the advent of digitization, what are the tools for a representation of architecture? What are the tools relevant to a representation in line with the specific character of the architecture designed?

The research, apart from having identified some classes and some categories of the different products, in *maquette*, as three-dimensional representation tool for a first approach to the design, in *plastic*, as tool of transition from the first idea to the first spatial syntax of the architectural object, and in *model* where everything is precise and provided for its final representation, focused also on fine-tuning the following formulation: *the architectural model as representation tool*. The aim of the research was to formulate some methodological procedures via seven different design actions, namely:

- *engraving*;
- *moulding*;
- *folding*;
- *digging*;
- *dissecting*,
- *printing*;
- *stratifying*.

The seven different design actions bring into focus (through the model) some representation techniques in line with the compositional *theme* and with the *character* of the designed space.

The various actions by which we produce an architectural object in scale have implicitly determined the character of the space. As if in a direct relationship between action by means of an instrument and answer by means of the matter – cause and effect – the character of the object produced in scale is defined. The building technique adopted, on a specific material, affects the formal result of the object produced (*tectonic* or *stereotomic*) and defines its architectural character.

In this way, we may identify a representation code capable of coinciding with the semantic value of the object.

**To engrave:** intransitive verb [from the Latin *incidere*, and *cadere* «to fall»]<sup>13</sup>.

To engrave on a surface or a volume by leaving a trace on the matter. Incision is a superficial cut, i.e. other than a deep cut, that does not split the matter (Pict. 1).

**To mould:** transitive verb [derivative of *model*]<sup>14</sup>.

Lending plastic shape to a matter. Fashioning the matter, through pressure actions. Defining the contours of a figure by moulding the matter (Pict. 2).

**To fold:** transitive verb [Latin: *plicare* (akin to the Greek *πλέκω* «to weave, to intertwine»)]<sup>15</sup>.

Folding a plane object along a direction in order to define another form. The action of folding aims to define a three-dimensional object starting from a surface (Pict. 3).

**To dig:** transitive verb [Latin: *excavare*, made up of *ex-* and *cavare* «making hollow»]<sup>16</sup>.

Giving shape through the empty space inside the matter. Removing matter in order to define a hollow space (Pict. 4).

**To dissect:** transitive verb [derivative of *section*, on the example of the French *sectionner*]<sup>17</sup>.

Separating a body by interrupting its continuity. Dividing a surface or a volume into a number of parts. Unlike engraving, the cut acts until it reaches an interruption of the continuity of the body subjected to the action (Pict. 5).

<sup>13</sup> Entry taken from the Treccani dictionary of Italian

<sup>14</sup> Op. cit.

<sup>15</sup> Op. cit.

<sup>16</sup> Op. cit.

<sup>17</sup> Op. cit.

**To print:** transitive verb [from the Germ. stampjan (or from the French stampôn) «to press»]<sup>18</sup>.

Print for the reproduction of prototypes of architectural models pursuant to the *additive manufacturing* method - 3D printing - (Pict. 6).

**To stratify:** transitive verb [From the alchemists' Latin stratificare, derivative of stratum «layer»]<sup>19</sup>.

Laying in layers, both horizontal and vertical, thereby defining a syncopated sequence of empty/full spaces. The result is a dense space rich in vibration, e.g. urban or topographical space (Pict. 7). The representation, in this condition of exploration, of study in particular, through the model, manages to be not only a mere tool of detection, but also, first and foremost, a tool for disclosing the spatial qualities of architecture.



Fig.1 Engraved model

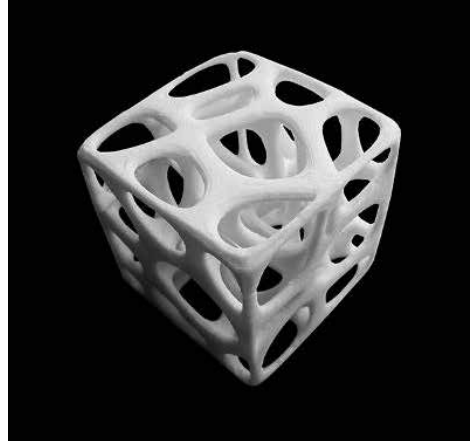


Fig.2 Moulded model



Fig.3 Folded model

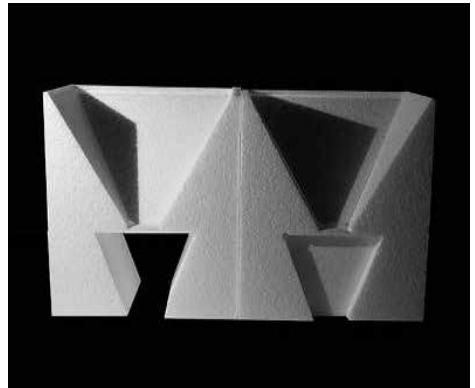


Fig.4 Dug model

<sup>18</sup> Op. cit.

<sup>19</sup> Op. cit.

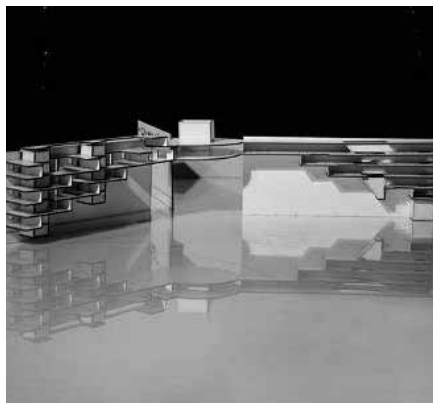


Fig. 5 Dissected model



Fig. 6 Printed model

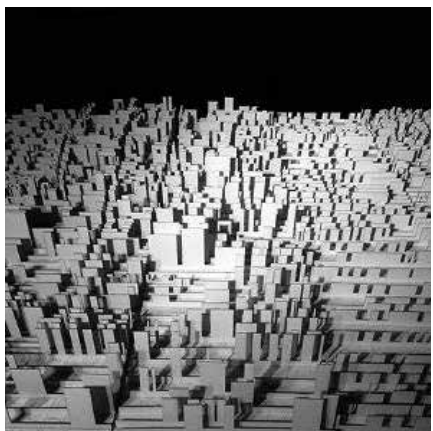


Fig. 7 Stratified model

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## TRANS-TENSEGRITY DESIGN

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### Abstract

This research moves from the study of tessellation and polyhedra as innovative path of drawings for the project. Such elements are taken and used as the basic inputs of an innovative generative design, and the obtained results applied to tensegrity structures. Tensegrity structures are systems in stable self-balance, composed of elements in compression immersed in tense elements. In our project, the structures are created, thanks to an algorithm, around the polyhedra and the tessellation of the surfaces, through rotations and translations of said surfaces. In particular, in case of polyhedra, the corners are replaced by poles that mark a process of rotation around an axis passing through the centre of the same polyhedra. In order to build a tensegrity structure, these poles are then connected by a series of tense cables. In case of tessellated surfaces, the sides of the geometries are replaced by poles and then subjected to rotations on the plane and alternating rotations in space. Eventually, the poles are all connected through tense cables. The newly created geometries can be connected to the concept of trans-polyhedra, convex polyhedra composed of entirety of the initial polyhedron's faces, plus the faces of the dual polyhedron, plus a series of connecting quadrilaterals. The same concept works for the trans-tessellations. These concepts have been developed and applied in several design objects, which are able to maximize the peculiarity of tensegrity systems.

### Introduction

Defining Tensegrity structure without visual support is particularly difficult. The most suitable, and relatively recent definition, is the one attributed to Prof. Motro R. of Montpellier University "It's called Tensegral a system in a stable self-equilibrated state comprising a discontinuous set of compressed components inside a continuum of tensioned components"<sup>1</sup>.

Analyzing the definition we can identify the "compressed components" as the poles present inside the system, while, the "tensioned components" are composed by the net of tie-rods that connect every tensioned element creating exactly the "continuum"<sup>2</sup>.

<sup>1</sup>R. Motro, *Tensegrity : Structural Systems for the Future*, Kogan Page Science, London 2003.

<sup>2</sup>E. Leonardo, *Le strutture tensegrali* in [https://issuu.com/emilionardo/docs/strutture\\_tensegrali\\_pubb](https://issuu.com/emilionardo/docs/strutture_tensegrali_pubb) [2016].



Fig.1 “NEEDLE TOWER”, Kenneth Snelson

The Tensegrity structures present interesting peculiarities, for example the extreme lightness accompanied by a surprising structural rigidity, condition that makes them ideal for the challenge of the research of the minimum mass design (maximum resistance with minimum mass), therefore ideal for the achievement of a more aware eco-friendliness, that is not just focused on mere energetic saving.

Other peculiarities that characterize this structure are the capacity of redistribution of the loads on almost the totality of the structure, or once again, the recovery of its own balance independently from the direction of the disturbances that solicit it, all properties that we can't find in the actual structural configuration characterized by a superimposition of compression (Fig. 1).

## Methodology

The term “Tensegrity” was created in the early Fifties by Richard Buckminster Fuller, contraction of the two words “Tensional” and “Integrity”.

On one side, there's a young student from Black Mountain College in Asheville, North Carolina, named Kenneth Snelson that, fascinated and inspired by a lesson of Prof. R. Buckminster Fuller realized a first structure which configuration is attributable to the concept “floating compression” (definition created by the very same Snelson years later).

Buckminster Fuller noticed the works of the young student and saw immediately in those models the practical representation of the theories he was working on for years, he focused on the development of these structures and created the term Tensegrity.

On the other side of the world, David Georges Emmerich, Hungarian engineer and architect, but French of adoption, began to study the tensed structures that he called “Tense structures and self-pulled”, inspired by the work of Karl Ioganson in the first mid-Twenties.

The base structure in any Tensegrity structure is the one built by a single plank and two cables that connect the two extremities of the plank in both sides.

To proceed along the scale of complexity one can increase the number of the components that interest the structure, to have then a Tensegrity composed by two planks and four tie-rods placed like in this picture. Increasing again the number of the components belongs in the so called “Tensegrity Prism” (Fig. 2) Every stable tridimensional structure composed by  $p$  planks, with a polygon of  $p$  sides connected by cables on the top and a polygon of  $p$  sides, always connected by elements solicited by traction as a base fits the definition of Tensegrity Prism.

The vertex of the higher and the lower polygons are also connected by cables, completing the distribution of the solicitations.

One can introduce then the existence of the law of the regular minimum Tensegrity Prism, “minimum” because it has the minimum number of poles that can guarantee the tridimensional equilibrium ( $p=3$ ), “regular” because the two polygons of cables are parallel and equilateral (the two polygons don't need to have necessarily the same side).



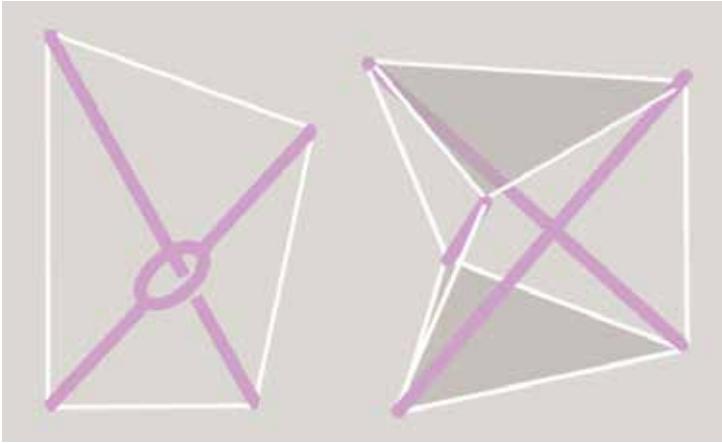


Fig.2 Elementary Tensegrity and Tensegrity Prism

It is appropriate to linger on the concepts of primary configuration and dual configuration, concepts that can be applied to any system of poles and planks<sup>3</sup>.

Considering as primary the first configuration, one can consider as dual the configuration that has the same geometry of the primary, with the tie-rods replaced by the rafters and the rafters replaced by the tie-rods.

One can imagine three planks connected to the extremities and reclined on the same floor and considering this as primary system, the correspondent dual system is composed by three cables and no plank. Obviously none of the two configurations can be considered a Tensegrity, the primary configuration, although stable, does not present tie-rods, while his dual presents cables but cannot be defined as stable at no spatial level due to the lack of planks. The Tensegrity can now be considered primary and dual, the configuration composed by two planks is in stable balance if and only if the planks cross each other.

The dual equivalent, is a system of four planks that cannot be considered stable in tridimensional space but is stable in a two-dimensional level. From these examples one can notice that the dual of a Tensegrity system can be or cannot be a Tensegrity system. Consequently there's the introduction of the concept of "class" in a Tensegrity system:

"A Tensegrity system is defined of class n, when in a single knot merge n compressed elements".

Based on this definition, a regular minimum Tensegrity prism ( $p=3$ ) is a Tensegrity system of "class 1" while his dual configuration is a "class 3" Tensegrity (Fig. 3).

Consequently one can isolate some of the fundamental characteristics of the Tensegrity structures, listing them as follows:

- they are reticulated spatial structures composed by compressed elements and by tensed elements; they don't present cutting forces, bending moment and twisting moment;
- for their nature, they are light structures;
- they optimize the use of the materials;
- they can become deployable;
- it's possible to unite the elementary cells to obtain composed and more complex structures;
- the internal state of pre-stress is fundamental to maintain the stability of the system;
- the class 2 structures have better stability then the class 1 structures;

<sup>3</sup> Robert E. Skelton, Mauricio C. de Oliveira, *Tensegrity Systems*, Springer Dordrecht Heidelberg, London 2009, p 19

-the research of the form is of great importance both for the geometric analysis and for the static one<sup>4</sup>. The discovery of this typology of structural systems was made at the end of the Forties, but on the paternity of it there are still some insecurities and strong debates, since the studies that have brought to the discovery, have developed in a parallel way and almost at the same time, at two corners of the globe.

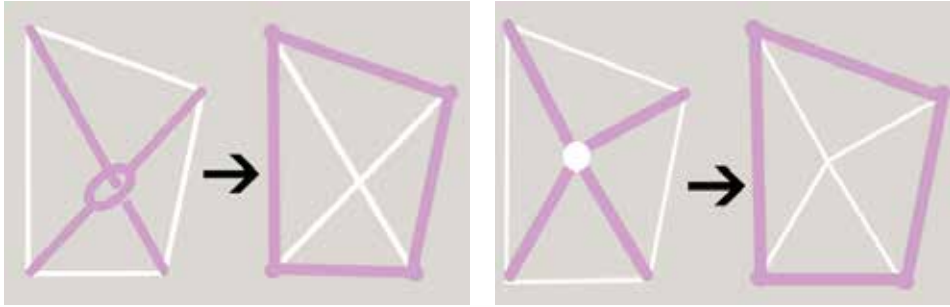


Fig.3 First class and secondary class + Forth class and secondary class

### Algorithm

The creation of the algorithm for the Tensegrity structures can become both from the polyhedra and from the plane tessellations. Each tessellations or polyhedral form has its specific algorithm being very complex to work with a high number of variables applied to a high number of different elements.

In particular, the algorithm for the polyhedra realizes translations and rotations of the corners of the examined polyhedron, it's easy to grasp that the number of corners and faces modifies the dimension of said algorithm.

The algorithm, precisely because of how it was developed, allows us to vary in most cases the tensegrity structure both from the dimensional point of view and from the configuration one, by doing so it will be possible to adapt the polyhedron with the respective tensegral transpolyhedra to every planning necessity, whether It's about a small object or about architecture.

Similarly in the other case the algorithm can be repeated for any plain tessellation applying some modifications, according to the specific case examined.

In other words, the algorithm generates a determined structure around a determined portion of tessellation, said structure can be replicated to infinity.

### Polyhedra case

- 1) Initial solid;
- 2) Placement of the pole on each corner;
- 3) stretching of the pole from the center of the corner, necessary for the self-balance of the structure;
- 4) Rotation of the pole around the axis "center of the polyhedron medium point of the corner";
- 5) Connection through cables (base element, pole with two cables connected to the extremities);
- 6) Tensegrity structure and correlated transpolyhedra; (Fig.4)

Each solid taken in consideration owns as common characteristic, each in his single case, the same length of the corners. This limitation is due to the method with which it was decided to develop the algorithm, in fact it allows to modify all the poles contemporarily and not singularly.

<sup>4</sup> E. Leonardo, *op. cit.*, p 78

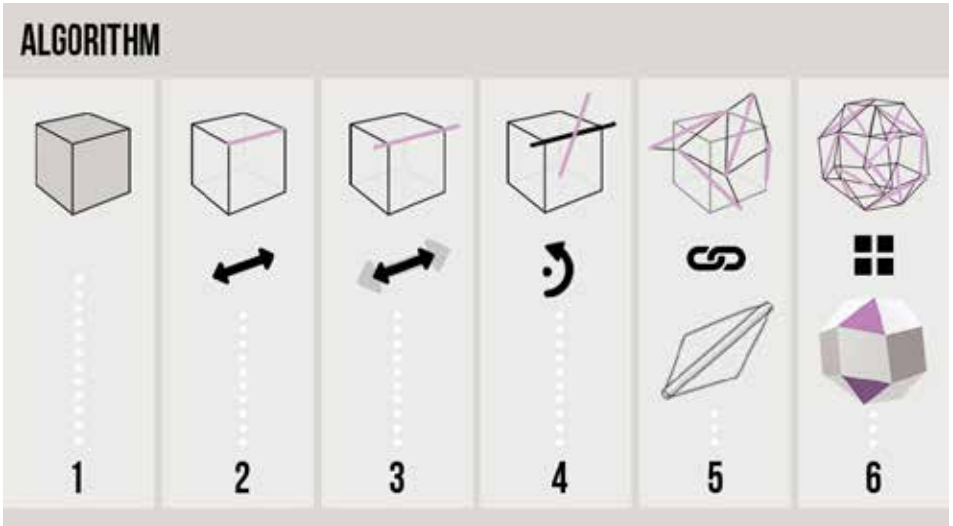


Fig.4 Algorithm Explanation of polyhedra

Once the rotation of the corners is realized, according to a different axis of rotation for each corner of every single solid considered, one can proceed with the connection of the cables, which refers to the base element of every Tensegrity structure, recognizable in a pole with two cables connected to the extremities.

It is important to notice that the so realized connections, through base module, recreate the geometries in correspondence of the vertex of the polyhedron and that the number of the sides of the geometries is in direct correlation with the number of poles converging in the same vertex.

According to the degree of rotation, which doesn't go beyond 70 degrees, numerous polyhedra generate, formed as well by regular and semi-regular figures.

The generated solid has all the faces of the initial solid plus the faces of its dual plus the connecting quadrilaterals (Fig 5-6).

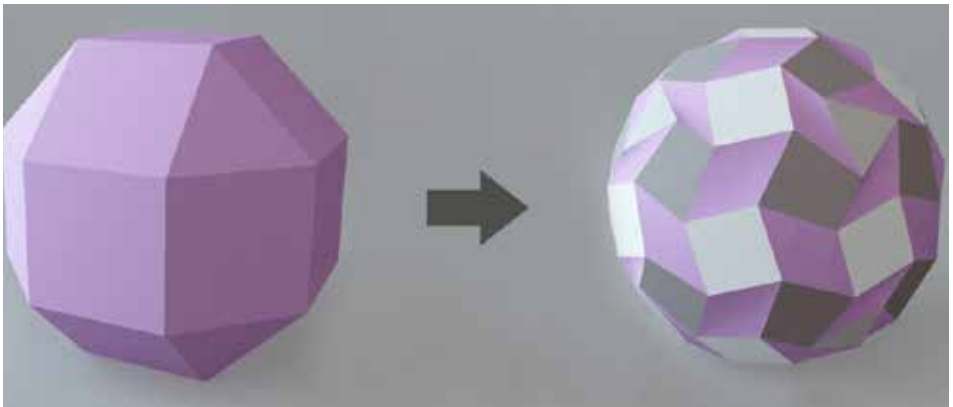
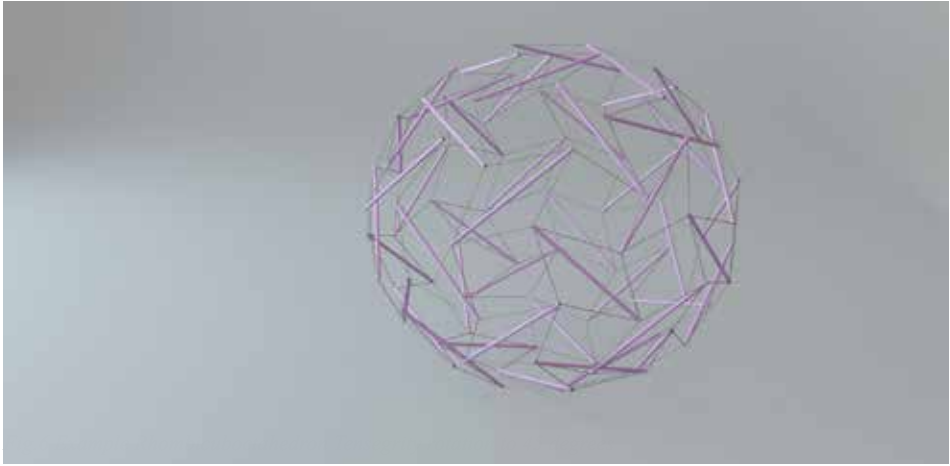


Fig.5 Example Rhombicuboctahedron



**Tessellation case**

- 1) Initial geometry
- 2) Rotation of the sides with the center of rotation in the medium point (axis z as rotation axis)
- 3) Rotation of the sides with the center of rotation in the medium point (local axis y as axis of rotation), consequently the structure becomes tridimensional
- 4) Stretching of the poles, necessary to the self-balance of the structure
- 5) Connection through cables (base element, pole with two cables connected to the extremity) (Fig.7)

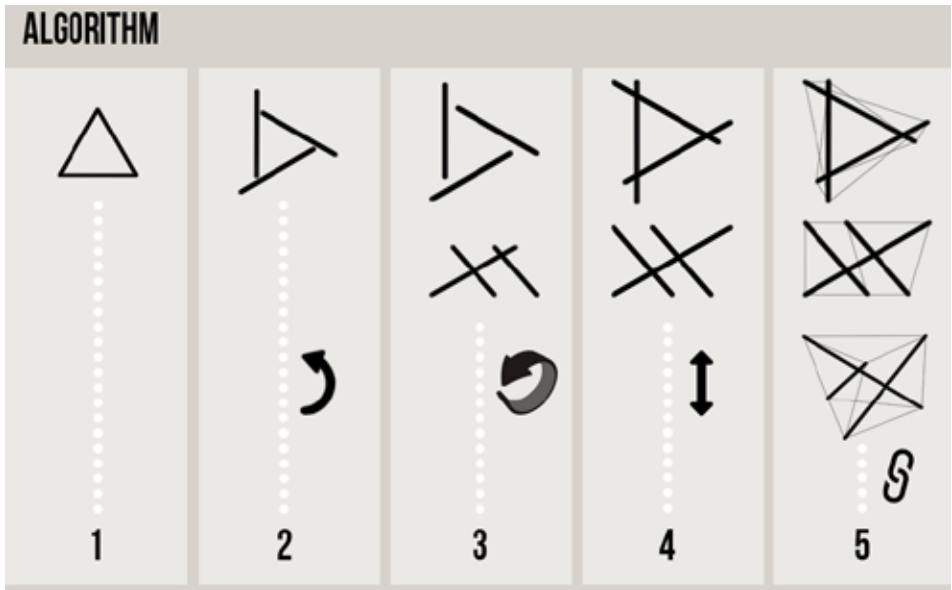


Fig.7 Algorithm Explanation of tessellation

Using the first two points of the previously shown algorithm it's still possible to build tensegral

structures in plain balance, in particular, the first rotation is realized (2) with the medium point of the geometry as center of the rotation and local axis z as axis of rotation.

Once the rotation is realized it is possible to connect the poles positioned in this manner through a net of cables that, like before, are based on the fundamental element of every Tensegrity structure. These connections recreate the geometries at the knots, geometries that have the same number of sides as the compressed poles that converged in the knot before the rotation, the totality of these geometries then creates a new tessellation of the plane composed by all the figures composing the initial tessellation, plus all the figures that compose the dual tessellation, plus a series of connecting quadrilaterals of variable dimension (the dimension of the quadrilaterals changes with the corner of the plain rotation) (Fig. 8).

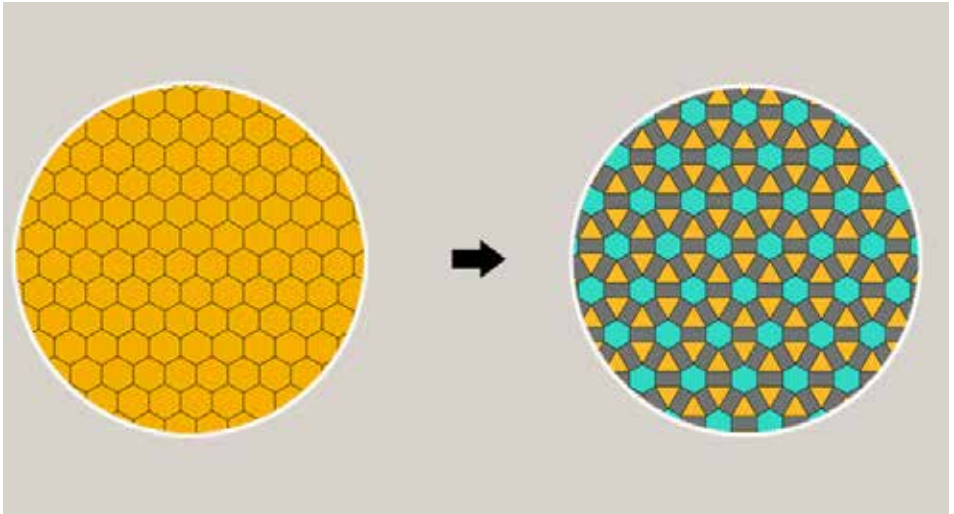


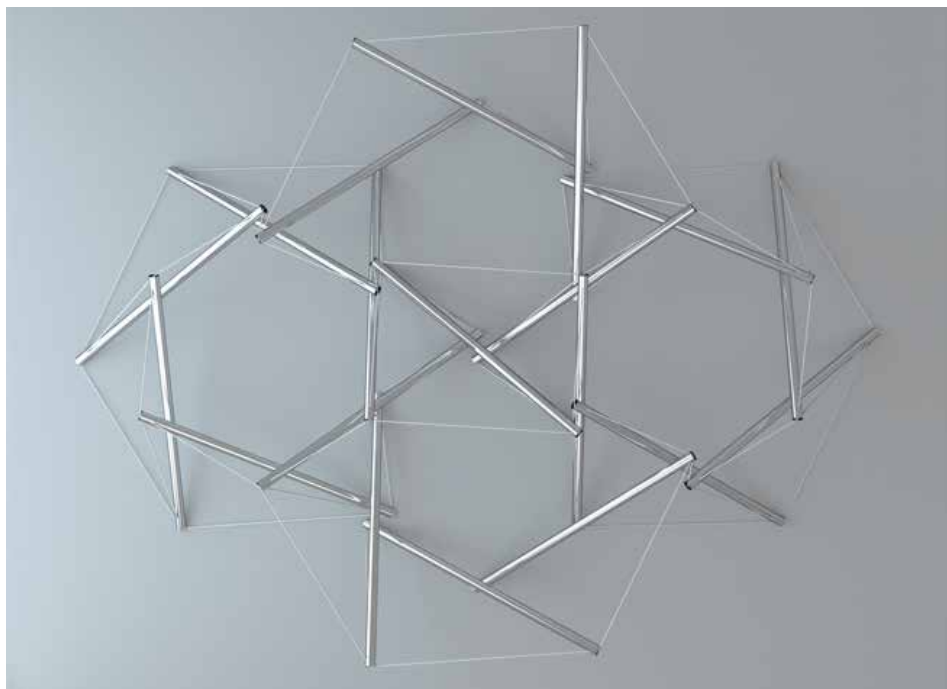
Fig.8 Example Regular Hexagonal Tessellation

Proceeding in the rotations and then moving to a system in stable spatial self-balance, due to the rotations to the point (3) of the algorithm, one must make a new series of connections, this time on three different levels.

The cables connect the compressed poles, like before, but this time the higher, lower and vertical connections can be clearly distinguished, as seen in the definition of minimum Tensegrity prism. Each plain tessellation then generates a different structure in spatial self-balance thanks to a specific algorithm (Fig. 9).

An interesting application of tensegrity structures is definitely design. Considering the strong geometric correlation with polyhedra and tessellations and the specific spatial complexity, these systems allow the realization of innovative objects, adaptable to various scales and, at the same time, light and of fast construction.

The interaction between cables and poles during the exchange of strains and the specific resistance to loads, lead to dematerialized and ephemeral spatial configurations that seem to float in the environment they are in (Fig. 10-11).



*Fig.9 Example Regular Hexagonal Tensegrity Tessellation*

### **Conclusion**

The interdisciplinarity of the structure and the matter that surrounds it, has allowed to study the design of non-conventional and innovative objects, with the intent of creating a procedural method for the construction of tensegral structures, fascinating to the eye but at the same time just as much complex.

This has been possible by taking into consideration the evolution of digital modeling and parametric algorithms. This methodology has allowed to overcome the fundamental difficulty of the realization of this specific structure and the spatial control of the same.

The analysis of the polyhedra becomes the center of the creative process, based on the deconstruction of the original configuration and on the relation between structure and element. The tools of representation help to discover new possible solutions. The dematerialization of the tensegrity, in this sense, represents one of the most interesting aesthetic achievements, without overlooking the structural performance. This dematerialization is deeply connected to the kinetic generation of the form, and is identifiable as a static image of balance between forces and materials.

## Applications



Fig.10 “Uolli” (Tensegral Regular Hexagonal Tessellation), “Sengard” (Tensegral Parallelepiped with a square base), “Bishop” (Tensegral Regular Square Tessellation). Fig.11 “Bi3” (Tensegral Dodecahedron-Icosahedron-Snub Cube), “Rango” (Tensegral Icosahedron or Tensegral Cube), “Tangle” (Double Tensegral Regular Hexagonal Tessellation).

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## **Augmented reality and Virtual reality with mobile devices**

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### **Abstract**

The continuous development of the digital three-dimensional representation now offers new tools and techniques to display and “tell” the cultural heritage. Mobile systems and interactive applications, indeed, allows to interact with the goods showing details, hardly perceptible with a two-dimensional representation as well as information impossible to obtain in the visible range. Virtual reality applications able to guide the user in “worlds” explorable via paths arranged to urge the various interests of a varied public. This work shows a Virtual Reality (VR) and Augmented Reality (AR) applications obtained from 3D data collected with a Z+F 5006h laser scanner. A modern real-time 3D engine lets researchers manage complex three-dimensional models on mobile devices too, giving the ability to navigate data interactively and immersively. The collected data are immersively visualized using a Google Cardboard head-mounted display and a real-time 3D mobile VR or augmented reality application. The project examines the Cappellone degli Spagnoli in the Santa Maria Novella Church in Florence. Users can turn their head 360 degrees and examine every detail of the frescoes as if they were standing in the centre of the chapel. As the application, apart from head orientation, has no other input, this work explores a specific selection mode: by clicking particular points in the chapel, an extra layer of explanatory content is accessed, explaining the saints depicted in the fresco.

### **Immersive reality**

#### **Definition and application**

Recent years have witnessed remarkable developments in technological research and its application to scientific studies. This evolution has favoured experimentation and the emergence of new display systems able to handle and query complex databases consisting of images, texts and three-dimensional models, both with fixed computers and touch-screens, or with mobile smartphones and tablets. In this way, the depiction becomes dynamic and allows new interaction methods to be applied to original spatial configuration data. We refer, therefore, to virtual reality, a three-dimensional environment where the user can interact with objects in real time – while feeling immersed and part of the scene. The term virtual reality was first coined in 1988 by computer specialist Jaron Lanier (Kelly, 1989) who, during an interview, defined virtual reality as “a technology that uses computerised clothing to synthesize shared reality. It recreates our relationship with the physical world in a new plane, no more, no less. It doesn’t affect the subjective world; it doesn’t have anything to do directly with what’s going on inside your brain. It only has to do with what your sense organs perceive.” We can imagine virtual reality as a tool capable of representing a high-resolution three-dimensional world consisting of objects that can interact with the end user, who then has freedom of action and may choose a personal point of view. The immersive feeling of being transported to the recreated setting makes natural dimensional space-time interactions possible (Varani, 2004).

The graphic interface is a key tool for the transfer of these sensations, which are: immersion (the unit becomes part of the user in the virtual world); presence (objects and surroundings are in full detail, making them appear real); and interactivity (the user interacts with the virtual world, getting answers to questions and giving commands). The display system is the result of creating environments and objects with computer graphics tools. Scenes may be put inside dedicated virtual reality software in order to follow user movements from any viewpoint, updating the system in real-time. “With this program, I can make the user feel immersed in the setting, because if the user moves body or eyes, the computer instantly shows the new view. It is necessary for the computer to be able to generate the new setting in a very short time, because if I move, the view must be the new one in the same time technically required at the cinema: less than one-fifteenth of a second (Antinucci, 1998).” The quality of perception and visualization of VR environments create two distinct types of virtual realities, making the end user experience different sensations:

- Non-immersive virtual reality (VR - Virtual Reality), the display of two- or three-dimensional virtual worlds, using instruments that do not isolate the user from the physical world
- Immersive virtual reality (IVR - Immersive Virtual Reality), using visors, gloves and even clothes to catapult the user into a virtual world in which the user can interact with surrounding objects.

The sensations produced by this display system help the user understand new three-dimensional spaces by participating in actions and emotions that are difficult to express with other means of communication. In the case of the Chapter House of Santa Maria Novella, VR and IVR were the systems used.

### **The history and importance of the Chapter House**

The Chapter House of Santa Maria Novella, called the Spanish Chapel (Fig. 1), was built between 1343 and 1355 by Fra’ Jacopo Talenti and financed by Buonamico Guidalotti. Its current name dates from the sixteenth century when it was used by the Spanish court of Eleonora di Toledo, who married Cosimo I de’ Medici. It covers the single span of a large vaulted hall with ribbed two-coloured pointed arches, supported at the corners by four octagonal pillars. The frescoes were executed by Andrea di Bonaiuto and various collaborators between 1365 and 1367, under the priory of Zanobi Guasconi and according to designs defined by the previous prior, Fra’ Jacopo Passavanti. They depict the passion, death and resurrection of Jesus Christ, the mission and the triumph of the Dominican Order within the Church and, in the entrance wall, events of the life of St. Peter of Verona – a mid-thirteenth century preacher active in Florence. These frescoes were also funded by Buonamico Guidalotti who, although already dead, had left the convent a large sum of money for the fresco decoration of the chapel. The project required material and colorimetric information, and this was acquired by laser scanner. A Z+F Imager 5006h variable phase laser scanner, with robotic camera, was used (fig. 2).



*Fig. 1: Section of the Santa Maria Novella church in Florence. In the highlighted panel the Chapter House (M. T. Bartoli)*

The acquired data were therefore both spatial points with material colour reflectance, as well as the photographs needed to create a panoramic image of the Chapter House. These images, in addition to being required for editing three-dimensional models, were crucial for colouring the point cloud acquired by the instruments (fig. 3).



Fig. 2. Survey with laser scanner Phase-Shift Z+F Imager 5006h and acquisition of colour with camera.

### The Project and its Implementation

The aim of the project is to make information and data on the paintings in the chapel available in an interactive way. Application users must be able to experience the same sensations as those who visit the building, and be able to ask for precise information. The research shows how a simple cardboard viewer (Google Cardboard) can be a great, low cost tool with which to experience IVR sensations. The other experiments presented concerns the realization of an augmented reality application, system that allows you to see the three-dimensionality of a space through a simple mobile system framing a printed image.

In the case of the IVR system the support, patented by Google, is basically a cardboard box with two lenses and a magnet that uses a smartphone to view virtual reality applications. The result is an HMD (Head-Mounted Display) support for a mobile device. The magnet adjusts the reading of the internal compass, configured to display application information. Compass reading variation is interpreted by the device as a selection command; an alternative mouse click.

The designed layout consists of a number of sensitive areas, corresponding to the saints depicted in the fresco of the Triumph of St. Thomas Aquinas, where subject names are tagged.

The application uses Unity 3D programming software, a platform that manages three-dimensional models, images, texts and scripts in C# language, necessary for control and operation of the functions.

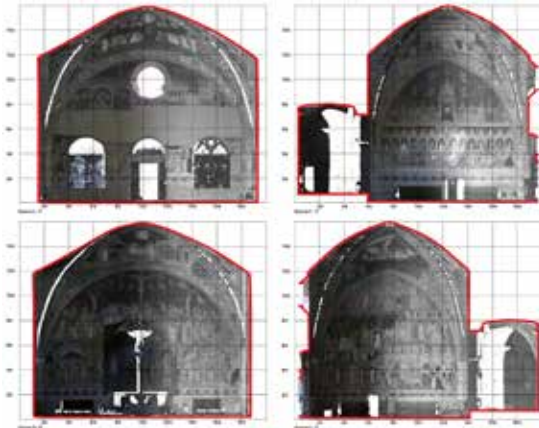


Fig. 3. Processing of the point cloud to create colored orthographic sections of the Chapter House

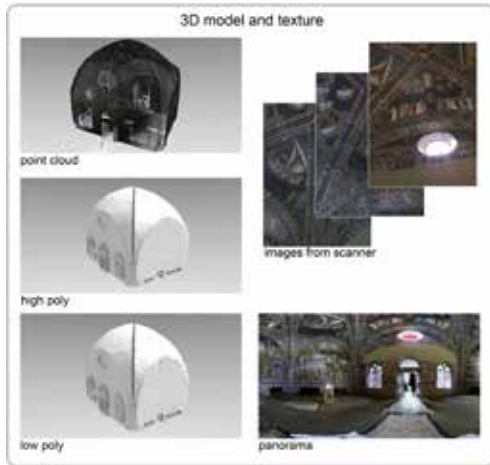


Fig. 4. Transformation of point cloud in high poly model; decimation and creation of low poly model; creation of the panoramic image and its application to the low poly model as textures of color.

The data, provided by measurements and from historical information, were the starting point for the creation of spatial geometry and content to be included in the application. The three-dimensional model, an essential support connecting the collection of spatial data and creating three-dimensional scenes, was carried out by processing the point cloud acquired by MeshLab; cleaning and creating meshes, and performing decimation to make results available for mobile devices. After re-projection of spherical panorama captured by the camera mounted on the head of the laser instrument, UV colour texture and normal maps, generated by the superposition of a low poly model with a high poly model were added to the model, creating a realistic rendering of the virtual scene (fig. 4).

The model, images and texts were subsequently resized and compressed to ensure smooth flow of the application, and imported into Unity and processed for display in HDM supports (fig. 5).

These data are essential for the description of points of interest enabling end user understanding and interaction. After positioning the digitally reconstructed room in three-dimensional space, GameObject layers were created containing the three-dimensional surfaces needed to highlight information available by using the magnet. User and application interaction is made possible by use of the Cardboard SDK for Unity development package, produced by Google and deployable within the Unity application. This utility contains critical programming codes, fundamental for functions related to the operation of the gyroscope and compass, as well as sending the correct optically distorted stereoscopic view to the screen, making the application fully immersive (fig. 6).



Fig. 5. Screenshot of Unity 3D software.



Fig. 6. The stereoscopic viewing of the application inside your smartphone for a vision properly with Google Cardboard.

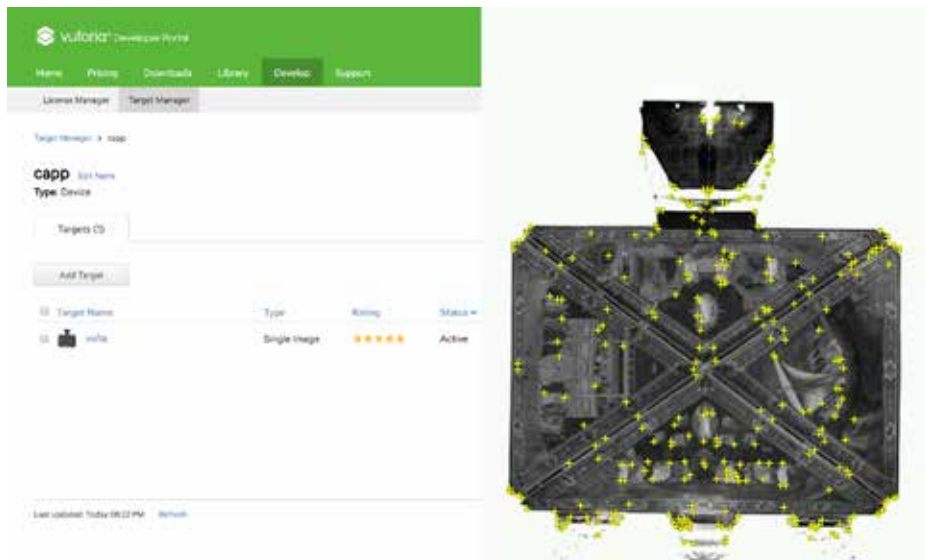


Fig. 7. Identification of features inside the image through the Target Manager of Vuforia.

End user and software interaction employs raycast, invisible rays projected along a given direction that identify objects and/or points of the scene. These lines originate at the centre of the screen show a viewfinder to facilitate user interaction. Ray contact with objects in the scene triggers scripts and programmed information to the screen.

The second experimentation was the realisation of an AR app. Architecturally, AR systems include mechanisms to track information about user location and the position of real world objects; hardware and software to process information, and devices to show users the digital information integrated with the real environment (Azuma, 1995).

Also in this case the programming of the application was performed within Unity 3D with the plugin Vuforia produced by Qualcomm to realize the AR System. This is an Augmented Reality Software Development Kit (SDK) for mobile devices that enables the creation of Augmented Reality applications. It uses Computer Vision technology to recognize and track planar images (Image Targets) and simple 3D objects, such as boxes, in real-time. This image registration capability enables developers to position and orient virtual objects, such as 3D models and other media, in relation to real world images when these are viewed through the camera of a mobile device. The virtual object then tracks the position and orientation of the image in real-time so that the viewer's perspective on the object corresponds with their perspective on the Image Target, so that it appears that the virtual object is a part of the real world scene.

In fact, Vuforia has a "visual" approach that provides access to additional information and to start their own augmented reality experience from the recognition of specific images. Targets created can be stored in a database to which it connects cloud service, in order to save space for local storage.

In this project we used a photographic image of the monument as a target on which detect and record the features necessary to attach the 3D model. This picture was sent to the Device Database Portal Vuforia, who tracked down and stored the features in a database. The DB was downloaded and packaged to be inserted within the project of Unity (Fig. 7). Last step for the creation of the app has been to create a few lines of code in C # to define the buttons that should be displayed on the screen of the device and some scripts to switch on and off layers created.

## Conclusions

Computer systems now have interactive technologies that can make the difference when drafting a restoration project, or can be the key to success for enhancement and dissemination initiatives.

The spread of cultural heritage knowledge is the first step towards its conservation and, today, virtual reality appears to be an effective tool to achieve this purpose. The ability to experience countless possibilities of seeing and interpreting a wealth of small and seemingly insignificant details can only put an increasing number of people on the road to awareness. Knowledge and direct experience of a cultural resource is basic to the recognition of its worth and, consequently, to how it should be conserved. Conservation could become a real shared requirement, thus making the experience richer and more intense. In this way, immersive virtual reality suggests that knowledge processes may be implemented even without specific technical preparation. This means that the project creator can direct the experience at various levels, from general user to that of a specialist.

Virtual reality technologies can be valuable tools for various cultural tasks, from conservation to promotion, without forgetting education and awareness. These tasks may be carried out more effectively and immediately than would otherwise be possible with traditional media methods, although these do of course have a role to play. It appears obvious that achievements such as these, in addition to being valuable tools for study and analysis by experts, can improve the educational contribution of cultural heritage.

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## Visible representation of the invisible

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### Abstract

S.R.Ellis declares that a virtual reality system consists of a set of computer devices that could allow a new kind of human-computer interaction. “Virtual” is one of the keywords of these years, one of the most written but also more mistreated: confined for centuries in the dialects of philosophy and science, is now entering the common language. Its main application is still synonymous with “unreal” and “fake” though digital technologies are “technologies as possible” both in the sense that make possible events that until recently seemed impossible, both in the sense that they tend to pull out from traditional reality that aura of uniqueness.

The definition “multimodal” describes three-dimensional models with connections to different digital content; indicates the possibility to use virtual models as points of reference for implementing hypertext structures.

Multimodal models are presented as suitable tools to view and use contents emerged as a result of studies, that are integrated with the metrics to achieve a “representation” of the artifact. Particular attention should be paid to the access modes for the multimodal information content, whose structure and hierarchy must be designed with care in order to create an intelligible hyperlink structure; so a multimodal model acts as a “gateway” to the hyperlinks’ content.

One of the characteristics of the digital hypertext structures is the virtually unlimited expandability and elasticity of the structure that enables stakeholders to connect different products according to a cyclical and expandable structure.

These considerations encourage a vision according to which culture is identified with “infrastructures” that support the Smart City “organism” to a “new” vision that retrieves the role of the educational processes, through which, the relationships between people and territories are continually reshaped and memory-related at the same time.

### Introduction

*“When you can change the way you see the world, you can change the world you see”*

*Microsoft.*

In the last century the virtual reality filled fantasies of filmmakers, writers and passionate readers of fantasy. Today, the term virtual reality, seems to be closer to the understandable or even just to understand for those who have developed some degree of familiarity with interactive technologies. VR or AR applications, allow users to view digital content in an immersive or “increased” reality directly on the display of devices through experience of interaction with 3D subjects and scenarios, using the entire human beings’ perceptual system.

Using these solutions, you can experience a new approach for the fruition of scientific heritage and museums, not to replace or diminish the complexity and richness of experience, but rather to interact and expand the possibilities for experimentations, even in cases where the targets are not easily accessible, for their value, their fragility, or because there are particular types of users.



*Fig.1 Villa Ottolenghi Atelier in Acqui Terme: digital suggestion.*

In the didactics virtual applications allow the learner and the teacher to participate actively in the creation and development of knowledge; AR and VR reproduce the primary conditions of cognitive and perceptive work.

In other areas, these new technologies are implemented creation and dissemination processes and align perfectly with digitization trends, internationally and locally promoted. In museums, for example, the technological improvement of unavailable items, would allow unquestionably implementation for the users, defining new cultural approaches and making heritage the object of entertainment with which to interact and relate.

The cultural element, whether it be a museum or a didactic one, having to translate into social construction skills, should add a continuous acquisition of new knowledge, through dealing with new experiential accessible, transmitted mode, and supported by new technologies.

The researchers concentrate on testing new tool of interaction that will allow on one hand, the integration of new learning objects in teaching processes, on the other hand, experimenting with new technological prototypes, in order to increase a laboratory and Museum context.

## Methodology

This research focuses on techniques for three-dimensional model viewing led over the last decade to development of hardware and software tools that offer easy and engaging interfaces for a non-specialist audience.

The evolution of new visualization techniques offers new opportunities also to users and researchers of architecture.

Visualization techniques can be used for two different purposes: the first is the remote viewing that is the ability to visit distant places and architectures; the second relates to the ability to use digital templates such as temporary windows, through the proposition of conjectural reconstructions of lost artifacts, ruined or ever made. In both cases the digital display brings the point of view into inaccessible places o, or even to show parts of the building hidden from view. (fig. 2, fig. 3)



Fig. 2 Marcos Novak, *Data-Driven Forms*, 1997-1998. Fig. 3 *Experimental artificial environment developed around the Palladio's villa "La Rotonda."* View 3. Author: Daniela Sirbu, University of Lethbridge.

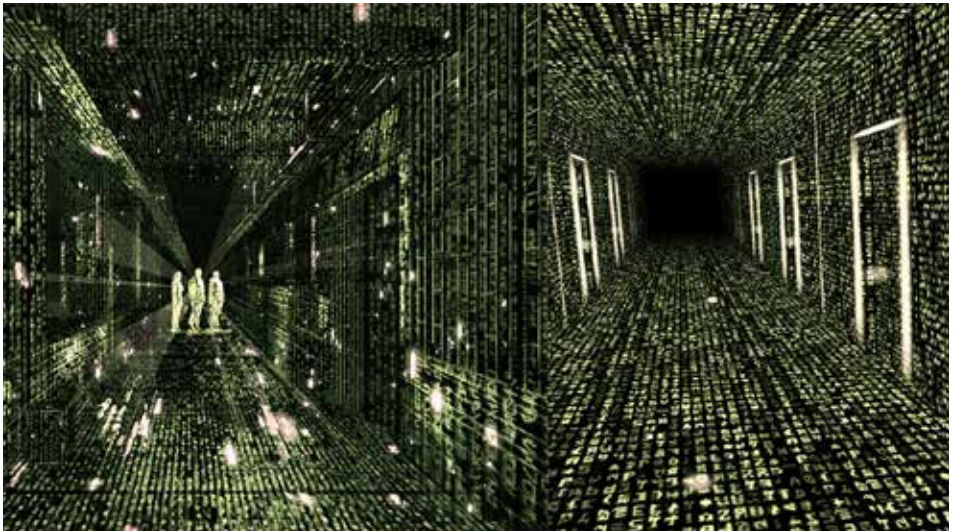


Fig.4 Images taken from the movie *The Matrix* (Andy e Larry Wachowsky, 1999): virtual life in virtual game

Virtual reality (VR) is scientifically recognized as a complex environment, determined by an immersive, interactive and three-dimensional graphical user interface that allows otherwise simulation operations and specific forms of communication and learning, offering the user the ability to perceive themselves physically present in a virtual world, so that to interact with it, through sensations, emotions, valuations and typical behaviors of everyday reality. The feeling of reality is the ability of that system, using specific technological devices, to process the information received and provide the user with a visual, sound and haptic real time perceptively return .

According to S.R.Ellis<sup>1</sup>, a virtual environment consists of three essential components that transversally, complement each other:

**Content:** It concerns the reproduction quality of virtual objects that must be as close as possible to real ones, having static and moving features, regardless of whether or not the user wants it. In this way, he has the ability to integrate himself with content, as an agent subject, but also as a simple explorer.

**Dynamics:** it concerns the rules of interaction between all the contents that a designer needs to keep in mind when creating a simulation. Reason why a virtual environment is credible, in fact, all the objects inside it will have to conform their own behavior to the normal laws of real-world physics. For example, physical objects should not be overcome and, if they are touched by the user, they must have a proper movement and acceleration to the force they have imposed on them. A virtual environment can therefore be continuously used and modified by one or more users through specific acquisition and usage technologies.

A Virtual reality system is the combination of hardware, which receive input from the user-controlled devices and transmit multi-sensory output with function to create the illusion of a real world, and software components that manage the hardware that makes up the VR system. In this case you have to deal with:

- output instruments (Visual, auditory and tactile) that immerse the user in the virtual environment;
- input tools (gloves, mouse or trackers) that allow to decrypt the user's location and movements;
- graphic interpretation system that reproduces a virtual environment through 20-30 frames per second;
- database and virtual object modeling software for the construction of detailed and realistic models that make up the virtual world. Specifically, the software handling the geometry, the physical modeling, the intelligent behavior, the inertia and the plasticity of any object that is included and reproduced in the virtual world.

In this regard it is useful to distinguish three categories of virtual reality, depending on the technological tools used to reproduce it:

- **not Immersive:** determined by monitor that acts as a "window" through which the user sees the world in 3D; interaction with the virtual world can be performed through the mouse, joystick, or other devices such as the data-glove.
- **Semi-Immersive:** determined by Cave 3D, rooms equipped with surround back-projection devices and screens that reproduce the stereoscopic images of the computer and projecting on the walls, with different shapes and degrees of convexity, adequate indexes of depth of the image, giving the so-called three-dimensional effect.

**Immersive:** on sound, visualization, movement and tactile devices (sensory, haptic gloves and helmet 3D trackers) that isolate the subject's perceptual channels immersing it in a sensory level, in the virtual experience.

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<sup>1</sup> S.R. Ellis, *Origin and elements of virtual environments*, in W. Barfield & T. Furness, *Virtual environments and advanced interface design*, Oxford University Press, New York, 1995

The expression “Augmented Reality”, usually abbreviated as AR, refers to emerging technology that blends digital information processed by a computer with information from the real world through appropriate computerized interfaces, in real time. Augmented Reality has to do with explicitly rendering the information implicitly associated with a context, making possible the relationship between the real world and the digital world visible.

The AR is a technology closely linked to VR.

In fact, in 1965 Ivan Sutherland<sup>2</sup> theorized the possibility to build computer-generated synthetic environments and laid the theoretical foundation for the development of VR systems with the following definition of interactive display:

*"... The ultimate display would, of course, be a room within which the computer can control the existence of matter. A chair displayed in such a room would be good enough to sit in. Hand cuffs displayed in such a room would be confining, and a bullet displayed in such a room would be fatal. With appropriate programming, such a display could literally be the Wonderland into which Alice walked."*

In other words he highlighted the goal of creating a system capable of generating artificial stimuli generating in the viewer the illusion of real experience.

Three years later (1968) Sutherland built, with the help of his student Bob Sproull<sup>3</sup>, what is universally recognized as the first Augmented Reality system of the story. That is, a helmet HMD (head mounted display) able to project, using silver lenses, virtual images on the visual field of the observer. (fig. 4)

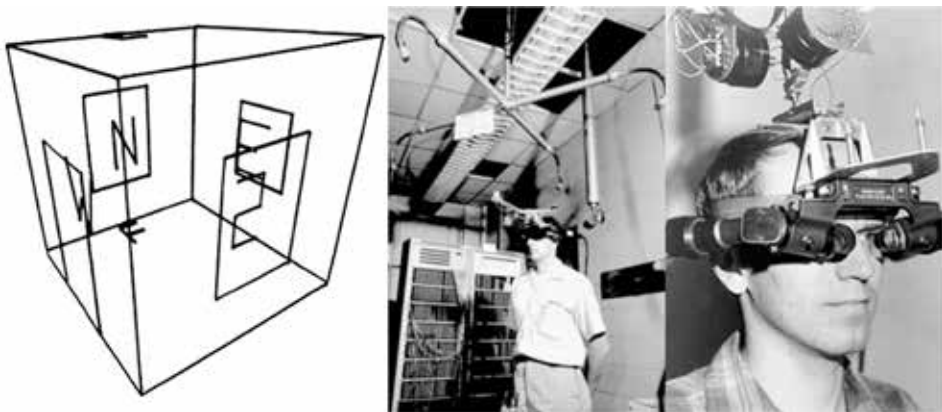


Fig. 4 The first Head Mounted Display developed by Ivan Sutherland and Bob Sproull

<sup>2</sup> Ivan Edward Sutherland (Hastings, May 16, 1938) is a US-based computer scientist and computer scientist, the winner of the 1988 Turing Award for Software Invention, and Sketchpad, the predecessor of the most commonly used computer graphics interfaces. He also has to design eyewear for virtual reality.

<sup>3</sup> Robert Fletcher “Bob” Sproull (born c. 1945) is an American computer scientist, who worked for Oracle Corporation where he was director of Oracle Labs in Burlington, Massachusetts. He is currently an adjunct professor at the College of Information and Computer Sciences, at the University of Massachusetts Amherst

The relationship between virtual reality and augmented reality is still a matter of debate.

While in Virtual Reality a user is immersed in a completely rebuilt virtual environment, in the case of Augmented Reality, the virtual elements are overlapped and integrated into real physical space. This is essentially a reverse process compared to Virtual Reality.

In fact, Augmented Reality allows to access and to use relevant information directly in their use's contexts by overlapped digital information levels to the physical space and allowing to interact as if they were indissoluble, by means of appropriate visualization and interaction devices.

reality apps made its entry on the market. Through AR applications for mobile devices, in fact, users can see images immediately "augmented" directly on the display of the mobile phones. Using the video captured with the camera, AR applications put informative contents and relative positions, about the user's location. These devices also provide contextual and almost ubiquitous access to information.

After presenting the concepts of augmented reality and virtual reality, and having analysed the main differences, this section highlights mixed reality's concept. P.Milgram<sup>4</sup> defines the mixed reality as "anywhere between the extrema of the virtuality continuum". The virtuality continuum is a range that places at opposite ends on the real world and the virtual world, then indicates the steps from one world to another, which include augmented reality, until you get to virtual reality.

Mixed reality is a collection of these concepts, in fact an application of mixed reality combines virtual items, augmented reality, information and real objects, causing them to coexist in one world, and putting them in a position to react in real time. Mixed reality is therefore the generation of a new world, different from a totally real, and different from a wholly virtual, but a world that contains a part of one and a part of the other, perfectly combined with each other.

A technique to display objects in augmented reality and mixed reality, is to produce holograms. Hologram is nothing more than an intersection of sheafs of light that reproduces an image or an object in three dimensions, observable from any perspective. This technique than simply displaying three-dimensional images, making it less fatigued the eye and is increasingly expanding. The representation of objects under holographic form is growing among the head-mounted devices, with light projectors, which render objects before the eyes of the user, or in the part of the world where you want to insert the information, increasing its reality or combining it with virtual elements.

## Conclusions

Technological innovation, if placed at the service of scientific research, can provide useful tools for deepening and disseminating the knowledge of cultural heritage.

The strong point of this research is the ability to integrate these tools into organic valorisation projects through the putting in place of multidisciplinary skills ranging from the project of the mission to the media communication and awareness to a more conscious use of the cultural heritage. Thanks to the interaction between artificial vision systems, three-dimensional representation tools have the potential to develop and apply this resource.

Semiotics<sup>5</sup> teaches us that whenever we communicate, we use a system of codes through which, conventionally, a "meaning" on the content level is related to a "sign" that represents it, for example, we are accustomed to expressing ideas and thoughts through a language, to use numbers to mean quantities and graphic signs for the operations we carry with them.

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4 Milgram P., Takemura A., Utsumi A., and Kishino F., "Augmented Reality: A Class of Displays on the Reality-Virtuality Continuum", SPIE Vol. 2351, Proceedings of Telem Manipulator and Telepresence

5 In semiotics, the sign is defined as "something that stands for something else, a someone in some way". Is considered to be a discrete unit of meaning: a system, consisting of a signal, a reference and a referent, which refers to a content.

This research has wanted to highlight what may be the implications that the context of virtual reality, augmented reality and mixed reality can have on the representation of information and user-interface design, especially as they can be complex data visualization systems designed for use in virtual reality, superimposed over the natural world.

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