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Articles

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The current issue is the fourth of the sixth volume of the *Athens Journal of Architecture* (AJA), **published by the Architecture Unit of ATINER**

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President
ATINER

Athens Institute for Education and Research

A World Association of Academics and Researchers

11th Annual International Conference on Architecture
5-8 July 2021, Athens, Greece

The Architecture Unit of ATINER, will hold its **11th Annual International Conference on Architecture, 5-8 July 2021, Athens, Greece** sponsored by the Athens Journal of Architecture. The aim of the conference is to bring together academics and researchers from all areas of Architecture. You may participate as stream organizer, presenter of one paper, chair a session or observer. Please submit a proposal using the form available (https://www.atiner.gr/2021/FORM-ARC.doc).

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- Abstract Submission: **7 December 2020**
- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **7June 2021**

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- Athens Sightseeing: Old and New-An Educational Urban Walk
- Social Dinner
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The Architecture Unit in collaboration with the Social Sciences Division of the ATINER will organize its **11th Annual International Conference on Urban Studies & Planning, 31 May & 1-3 June 2021, Athens, Greece** sponsored by the Athens Journal of Architecture. The aim of the conference is to bring together academics and researchers from all areas of social sciences such as urban sociology, urban geography, urban design, urban planning, architecture, etc. You may participate as stream leader, presenter of one paper, chair of a session or observer. Please submit a proposal using the form available (https://www.atiner.gr/2021/FORM-PLA.doc).

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- Submission of Paper: **3 May 2021**

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Reinvigorating Life of Southern Italy Fortified Architecture in Ruin: From Knowledge to Conservation

By Federica Ribera[*] & Pasquale Cucco[†]

Southern Italy, the ancient Kingdom of Naples and Sicily, shows a rich heritage of fortified architecture, with towers, castles, boundary walls and any other defensive works, witnesses of historical seasons of sieges and enemy attacks. Over time, with the loss of their original function, many of them, in an advanced state of degradation and abandonment, survive only as ruin, tangible historical trace of ancient architectural artefacts. The ruin is the past that becomes present, by integrating with what now exists; at the same time, it arouses nostalgic and melancholic emotions. Through the ruin it is possible to appreciate particular constructive registers, some distribution systems, materials and any other element useful for technologically and historically reconstructing analysis. The ruins are the result of the "non-academic" skills of the local population. The aim of the research is to evaluate the state of the art of the fortifications in a well-defined geographical area, the Cilento coast, according to the so-called degree of ruderization which allows the restorer to objectively evaluate the state of conservation of the historical buildings and to orientate all the conservative and integrative interventions.

Introduction: The Poetic of Ruin

The fascination of the ruins had over time an ever-increasing attraction, fuelled by travels, archaeological discoveries and works by painters and engravers who have spread the knowledge of ancient monuments all around the Europe. This new passion has its irradiation centre in Rome, where an art market strongly influenced by the fashion of the *Grand Tour*[1] polarized the attention on the ancient remains, considered no longer as just elements in the urban landscape but as autonomous subjects with high evocative potential. The ruin, with its nostalgic and creative power, approaches a past with an emotional force that cannot be found in the finished buildings; through it, the past becomes present, actualized, integrated with what now exists.[2] Therefore, it does not represent only what has disappeared or lost, but through the ruin it is possible to grasp the presence of the past, the sedimentation of age, the grafting of today on a multitude of yesterday.

Already in the XVII century the landscapes paintings by Lorraine, Poussin, Dughet and many others inscribed the ruins within a moral reflection; monuments and nature are subordinated to a conception of deeper spiritual balance. However,

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1. This name indicates the educational journey by the aristocratic younger throughout Europe. The term Tour clarifies how this trip is specified in a 'tour' – with departure and arrival in the same place – which has Italy as a favorite destination.

2. See J. I. Linazasoro, "Rovine," in *Ricomporre la Rovina* (ed.) A. Ugolini (Roma: Alinea, 2010).

it is from the XVIII century that the ruins are no longer considered as what remains of the original work, but they begin to be considered in their autonomy, offering themselves as a new form, different to the surrounding universe. Testimony of the past time, they are no longer considered only as architectural "fragments" but as autonomous objects with a high evocative, decorative and, finally, historical value. For these reasons, all the products that the history has disseminated in Europe begin to acquire "monumental" quality, despite their non-finiteness, fragmentation and age.

The fortified works like fortresses, castles and towers, placed in inhabited centres, on the coasts, at the top of hills and mountains, today represent a rich heritage with characteristics of particular fragility for the antiquity of the structures, the difficult conditions of conservation, the often impervious location and the loss of the original function. Most of them is abandoned or in advanced degradation, waiting for works that can keep their historical content and pass it to the future generations as an "active memory". The castles in a state of ruin represent real palimpsests of construction techniques and styles now disappeared, traces of materials in order to understand the evolution over time of the historical artefacts and the surrounding context.

Research Aim

The aim of the research – in the current phase of historical-architectural investigation – is to evaluate the state of the art of the fortifications in a well-defined geographical area, the Cilento coast, in Southern Italy rich in historical-cultural events that over the centuries have led to the creation of numerous examples. These castles-ruins are evaluated according to the so-called *degree of ruderization* which allows the restorer to objectively evaluate the state of conservation of the historical buildings and to orientate all the conservative and integrative interventions, in order to identify, for example, new destinations of use and new possibilities for sustainable functionalization.

In conclusion, the results of the application of the indicator to the cases studied are reported and the good practices for the investigation and conservation of the ruins are traced.

The History of Fortified Architecture in Southern Italy

Southern Italy, the ancient Kingdom of Naples and Sicily, has a rich heritage of fortified architecture, with towers, castles, boundary walls and every other defensive works, evidence of centuries of history and vicissitudes more or less successful. The evolution of the southern fortification is here treated with

particular reference to the Cilentan area,[3] rich in fortified castles in a state of ruin (Figure 1).

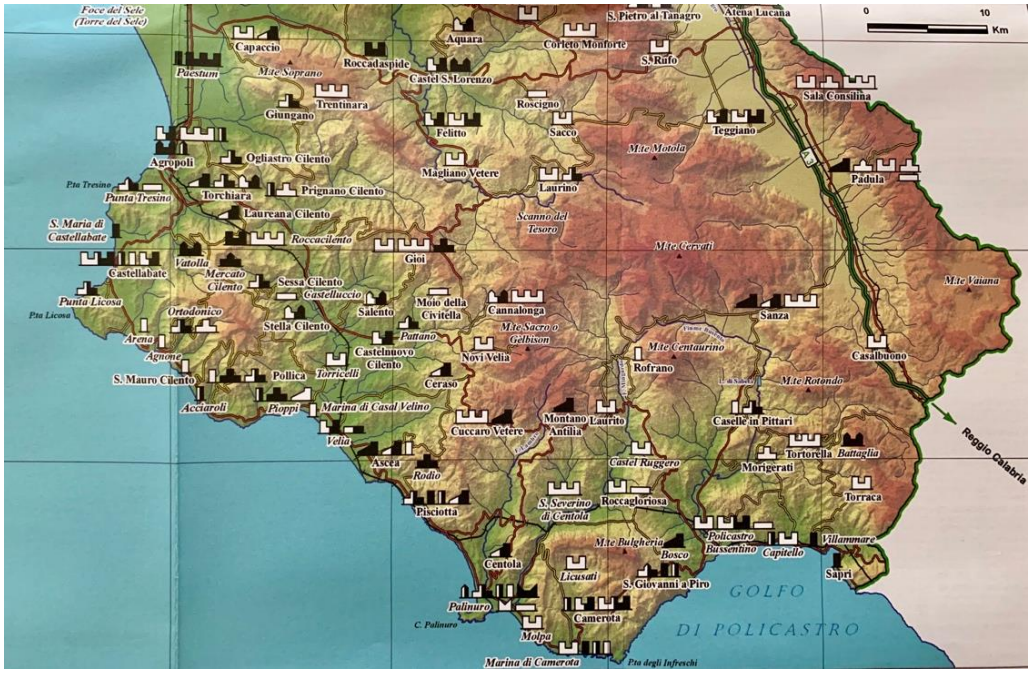

Figure 1. *The Cilento Coast in Southern Italy: Location of All the Castles*
Source: Istituto Italiano Castelli – Sezione Campania, II ed. 2007.

With the fall of the Western Roman Empire in the V century AD, Italy was exposed to numerous expansionist pressures from northern Europe.[4] The invading peoples (i.e. Huns and Goths) – had no interest in the construction of urban centres. The first approach to the construction of castles is due to the Byzantines who, after the war against the Goths in 535 A.D., had to protect the maritime areas, easy prey of the enemies.[5]

In the early Middle Ages, Cilento was included in the province "Lucania et Brittiorum,"[6] peripheral area of the principality of Salerno, vulnerable to the Saracen attacks.[7] In Cilento, because of the numerous enemy attacks, the population armed themselves with fortifications, towers, castles, and every other defensive device, built during the Lombard domination (VII-XI century) that, by

3. Cilento is a mountainous sub-region of Campania in the Province of Salerno, in the southern part of the region, declared a UNESCO World Heritage Site. Today it is extended to most of the coastal province of Salerno.

4. See R. Foltz, A. Guillot et al., *Origine e Formazione dell'Europa Medievale* (Bari: Laterza, 1975), 33-35.

5. See V. Von Falkenhausen, *La Dominazione Bizantina nell'Italia Meridionale dal IX all'XI Secolo* (Bari: Ecumenica Editrice, 1978).

6. The toponym 'Lucania' appears more frequently in the historical-geographical documentation starting from the second half of the X century and certainly corresponds to Cilento and perhaps to Paestum in particular.

7. See H. Taviani-Carozzi, *La Principauté Lombarde de Salerne* (Roma: Ecole Française de Rome, 1992), 502-508.

incorporating the uninhabited internal areas of the territory in the Benevento duchy, led to a repopulation of internal territories with the consequent formation of new residential areas. However, continuous fratricidal struggles between the influential Lombard families of Radelchi and Siconolfo in 849 A.D. led to the creation of two new autonomous states – Salerno and Benevento – event well known with the name of *Divisio Ducatus.*[8]

In this context, Cilentan territory has been at the centre of many historical events, because of its strategic geographical position near to the sea. This coast is dotted with numerous defence towers and sighting, built on rocky spikes and hills, in order to defend itself mainly from Saracen raids, in virtue of the fact that "Cilento constituted a sort of geographical enclave, an island, in which, apart from the easy maritime access, it was possible the settlement of those who wanted to take advantage of the natural disposition to exert their robberies."[9]

The first fortifications, rudimentary and private, were built with material from the ancient Greek and Roman factories. These were very irregular artefacts in the planimetric distribution and in the masonry equipment, built without particular technical devices. Nowadays, only a few examples remain, as they are often destroyed and rebuilt in the following seasons. In general, the rich scientific literature is unanimous in recognizing in these early Lombard settlements a prototype of a fortified city: The walls, the tower, a building for the recovery of food supplies, etc. The practice of building ditches, bridges, roads, often winding and inaccessible, is next.

In the Norman age (XII century) was started a process of improvement in the construction of new castles and modernization of the existing ones, with a more organized and technically advanced system. Typical elements of Norman fortified architecture are represented by the appearance of the so-called Donjon, the central defence tower also known as "mastio", and the drawbridges, of which there are only few examples in Cilento.

The next Swabian domination (XIII century), administration tending to centralize the fortified positions in the hands of the central power, gave a new impetus to the construction of castles and towers in this territory. In this way, more complex plans are introduced, as well as the construction of several towers, not perfectly vertical curtains, etc. It should be remembered that in Cilento there are not totally new Swabian settlements, but they are just pre-existing Norman and Lombard fortifications, restored and readjusted.[10]

It will be necessary to wait for the Angevin period (XIII-XV century) to have a renewing action of the feudal society, by starting from the decision to choose Naples as new capital of the kingdom, leaving Palermo in 1266. Not only Naples, but almost all the south of Italy was interested in a powerful renewal action. Great impulse to the construction of fortified systems was done in order to hinder the advance of the Sicilians towards the capital of the Kingdom. The castles of

8. See G. Nobile Mattei, "Il Problema della Riqualificazione Giuridica della Divisio Ducatus," *Historia et ius* 4 (2013).

9. G. Pane, "Architettura, Urbanistica ed Arte," *Il Cilento. Tesoro della Campania* 1 (1992): 38.

10. Frederick II of Swabia promulgates a list of castles to be restored and maintained throughout the kingdom; in Cilento only the castles of Policastro, Laurino and Capaccio appear.

Castellabate, Castelcivita, Padula and Castelnuovo Cilento belong to this historic season. In them it is possible to appreciate the evolution of construction techniques, certainly of French inspiration: Cylindrical towers with a truncated conical base, stairs inserted in the thickness of the wall, defence trenches, etc. Under the Angevin domination, the existing fortifications were reconstructed, by inevitably modifying the original face, with the consequence that many XIII century structures were incorporated in constructions different from the original system.

During the Aragonese age (XV century), numerous castles were modified according to the renewed needs; there were more regular planimetric layouts with powerful walls protected by bastions.[11] In particular, the new features introduced were the lowering of the curtains and towers, the increasing in the wall thickness, the introduction of large "merlons", new and better performing defence devices.[12]

With the fall of the previous domination and the establishment of the Spanish Viceroy (XVI-XVIII centuries), the situation in southern Italy changed considerably: All the administrative power was concentrated in Naples, leaving aside the more remote fiefdoms, which, over time, were turned into country houses. This, obviously, has led to an alteration of the architectural conformation of the artefacts, with the opening of new windows, more modern decorations and elements, etc. It is thanks to the work by Don Pedro of Toledo, urbanist viceroy, the implementation of a vast program of strengthening the whole kingdom, with a modernization of buildings and infrastructures. In this period, the frequent enemy attacks, especially by the Turks, forced the viceroy to issue an authoritative disposition for the construction of defensive works in order to enhance the most vulnerable sea cities. Then, the Duke of Alcalà, Don Pedro Alfan de Ribera, expanded the Toledan work, with constant attention to the control of the whole territory. Especially in Cilento, the duke of Ribera ordered the construction of seven coastal towers in 1566, first from Agropoli to Policastro, then until to Sapri. A general commission for the construction of the towers was set up, so that the Kingdom could have precise informations about the coastal state, the existing structures and the possibility of building new ones.[13] The result was the construction of 93 towers from Salerno to the borders of Calabria. Nowadays, many of the viceroy towers are in a state of ruin; many others used for new functions; others, in small numbers, are in good conditions.

It is useful to summarize the Cilento fortifications according to the chronological stratification shown below (Table 1).

11. See L. Santoro, "Presentazione," in *A Guardia del Territorio. Castelli e Opere Fortificate della Valle del Sarno* (ed.) F. Cordella (Napoli: Altrastampa, 1998), 7.

12. See F. Russo, *La Difesa Costiera nel Regno di Napoli dal XVI al XIX Secolo* (Roma: Laterza, 1989).

13. See C. Crova, "La Difesa Costiera in Età Vicereale nel Regno di Napoli. La Torre del Monte di Scauri: Quadro Storico," *Terra Laboris* 12 (2014), 8.

Table 1. *Chronological Summary of the Cilento Fortifications*

Lombard era	Novi Velia, Capaccio, Laurino, Rocca Cilento, Gioi Cilento, Felitto, Cuccaro Vetere, Agropoli, San Severino di Centola, Stio Cilento, Prignano, Vatolla.
Norman era	Policastro, Castellabate, Casalbuono
Swabian era (extensions and restorations)	Policastro, Laurino, Capaccio, Roccadaspide
Angevin era	Castelnuovo Cilento, Castelcivita, Capitello, S. Marina, Padula.
Aragonese era	Teggiano, Rocca Cilento, Sessa Cilento.
Viceroy age (coastal towers)	Agropoli, Castellabate, Agone, Policastro, Sapri.

Degree of Ruderization

There are many causes that can lead a monument to the deterioration typical of the state of ruin: Passing time, negligence, tampering, the evolution of economic, cultural and social cycles, the succession of earthquakes, landslides, floods, local wars, the abandonment of original settlements, changes in use, etc. The process of ruderization can be more or less fast and profoundly different may be the outcomes and degenerative pathologies in progress on the artefacts.

The levels of degradation are very different and require planning and intervention modalities studied case by case. For this reason, is being tested a new parametric indicator to support the professionals in the objective evaluation of the state of conservation of the historical artefact and to choose the best conservative and integrative intervention. The indicator is the so-called "Degree of ruderization", that is the percentage ratio of authentic material now conserved and the original state of the whole building. According to it, three levels are identified:

1) Level 1 - total loss of coverage.
2) Level 2 - progressive loss of portions of supporting structures.
3) Level 3 - hard ruderization, over 70%.

Once the roofing has been lost, the degree increases, with the progressive loss of vertical and horizontal structures, until the total loss of the building.

The definition of this parameter can be a valid help in defining the interventions to be carried out on the ruined buildings, operating first on more unfavourable parameters (absence of coverage, infesting vegetation, wall cracks, etc.). In it, many aspects can be merged and changed, added or subtracted, by adapting them, from time to time, to the cases in question.

By identifying the level of ruderization and the most favourable and unfavourable parameters of a building helps the technician and the decision maker (public administration, protection institutions, individuals, community) in the choice of priority actions to be carried out in the protection of buildings and in making future reflections on the ability to integrate the building with possible reuse and recovery programs, on an architectural, landscape, social and economic level.

It is evident that there are important differences in conservation between a building that become a ruin by following a slow process of aggression by environmental, chemical and physical factors, and one affected by a fast and violent event like a natural disaster or a war event. Studying the fortifications in Cilento, in addition to a historical-geographical characterization, we tried to identify the correct degree of ruderization, albeit with all the random variables that the theme involves.

Below is an analytical model, currently being tested and refined, proposed as a useful support to the restorer in verifying the degree of ruderization of a ruined historical building and, therefore, in defining the potential level of integration within a conservation and re-use project. It is particularly important to deepen the knowledge of the most current approaches to the theme of conservation and sustainable management of ruins, by helping the architect to know how to relate correctly to the project without compromising the heritage authenticity.

This model does not replace the professionalism and experience of scholars but intends to be a valid aid in the analysis of the ruins and in the proposal of optimal interventions, at a global or local level. Therefore, the goodness of the model is guaranteed by a process of continuous validation of experts in the sector, whose judgment (through historical investigation, photographs and inspections on site) is compared each time with that returned by the model.

This model is based on a multiple linear regression rule of the type:

$$Y = b_0 + b_1X_1 + b_2X_2 + \ldots + b_nX_n + e$$

where Y represents the dependent variable, each variable X_i indicates the value assigned to a parameter, each coefficient b_i represents the weight to be associated to each parameter and e allows to manage a possible estimation error.

The first phase consists of transforming the nominal values of each parameter (predefined classes) into numerical values. The consolidated rules of transformation from class to numerical value are used.

The parameters used in the model are those most frequently encountered in cases of ruined artefacts. They affect the final result to a different extent, so we distinguish 2 categories to which different weights are attributed:

1) High value parameters.
2) Medium-low value parameters.

All parameters that depend on others already present are excluded, since their presence could introduce noise into the model and, therefore, lower its degree of goodness.

High value parameters have the greatest influence on the degree of ruderization of a building and that are always present.

They are restricted to two main fixed parameters, excluding those in direct dependence (Table 2).

Table 2. *High Value Parameters*

Loss of coverage	$\mathbf{X_1}$
Expanded	1
Media	0.66
Partial	0.33

Loss of vertical structures	$\mathbf{X_1}$
Expanded	1
Media	0.66
Partial	0.33

Low-medium parameters have a minor influence on the degree of ruderization of a building compared to the previous ones. It should be noted that the low-medium parameters can be chosen at the discretion of the evaluator, considering case by case the artefacts to be ruined.

This possibility involves the definition of a flexible and updatable model based on real circumstances, avoiding rigidity and poor adaptability to always different cases. Only a few of the possible parameters included in this category are proposed below (Table 3).

Table 3. *Medium-Low Value Parameters*

Integrity of the wall crests	$\mathbf{X_1}$
Poor	1
Average	0.66
Good	0.33
Weed vegetation	$\mathbf{X_2}$
Expanded	1
Reduced	0.66
Minimum	0.33
Past restoration works	$\mathbf{X_3}$
absent	1
Partial	0.66
extended	0.33

The second phase consists in facing is to define the values of the coefficients $b_0 \ldots b_n$.

	Single Coeff.	No. of parameters	Total
High parameter	0.35	2	0.70
Medium-low parameter	X/n	0 a n	0.30

Once the data have been replaced by the unknowns and the final result obtained in the light of the parameters involved, it is possible to use a simple classification rule that allows to classify the value of the index based on the results previously obtained.

if Y<0.35	**Low – Level 1**
if Y>= 0.35 and Y<0.70	**Medium – Level 2**
if Y>=0.70	**High – Level 3**

In this research the documentation curated by the "Istituto Italiano Castelli – Campania Section" has been a very precious help. It developed an effective "Charter of the Castles" and related symbolism – here reported – was adopted by the Scientific Council of the Institute from 1965. It consists of sixteen typological symbols that identify the various types to which a fortified architecture can belong with particular reference to the state of consistency of the fortification that indicates how much of the original monument survives today (Figure 2).

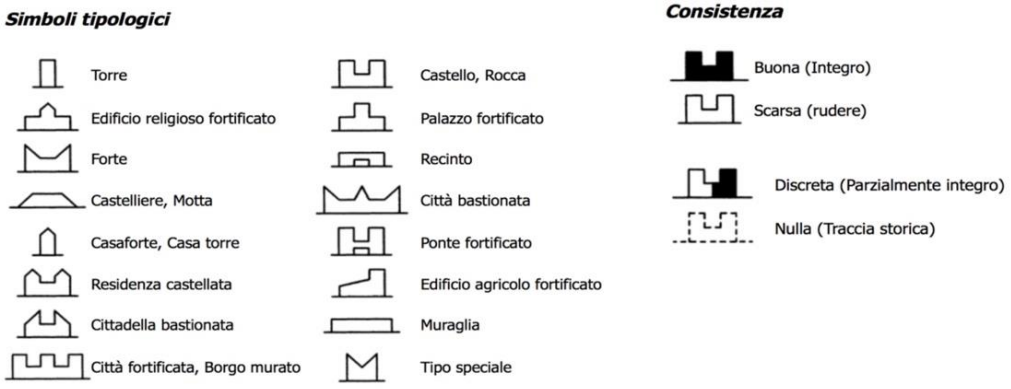

Figure 2. *Official Symbols of the Italian Castelli Institute. The Degree of Consistency Refers to how much of the Original Building is Visible Today*
Source: Istituto Italiano Castelli – Sezione Campania, II ed. 2007.

That following is the classification of the ruin castles (X-XII centuries) referred to the Cilento area, in chronological order, where it is possible to find the date, the geographic location, the degree of ruderization and brief historical notes. The degree of rudeness is evaluated according to the above proposed model, but the calculations are omitted here.

It is a study of the state of the art about the castles in ruins in a defined temporal interval. The research is still ongoing and aims to provide a complete mapping of all the ruined fortifications even in the following centuries.

X-XI Centuries

Laurino. The Castle of Laurino belongs to the X century, located on a hill at 531 mt. The structure is still partly legible even if the upper floors are almost all collapsed. The "Castello de lauri" is mentioned for the first time in a document dated 932 AD. Only in 1271 appears the Valdemonte family as the first feudatory of Laurino. At the end of the 16th century it was largely replaced by the majestic ducal palace of the Carafa noble family. Its definitive abandonment is when in 1734 Charles III obliged the various feudal lords to reside in Naples rewarding them with important court positions. Today survive only the ruins in a great spectacular environment. Degree of ruderization: LEVEL 3.

Novi Velia. The Castle of Novi Velia dates back to the XI century, later transformed and fortified by Tommaso Marzano, Duke of Sessa, in 1323, who provided it with powerful towers. At the end of the XIV century the castle was donated by Frederick of Aragon to Berlingiero Carafa, under whose dominion the castle knew its period of maximum splendor. Later it was bought and turned into a noble palace. Today there are still visible majestic remains of the towers, the curtains and the battlements. Degree of ruderization: LEVEL 3 (Figure 3).

Figure 3. *Castles of Laurino and Novi Velia (Sa)*

XII Century

Velia. The characteristics of the fortification of Velia, consisting of a castle and a high cylindrical tower on a truncated conical base, can be found in other fortifications built in the same period (in Castelnuovo Cilento, Castelcivita, Maddaloni and Amalfi). When the military war requirements failed, the tower was used as a private residence for the various wealthy families of the area. The castle of Velia today represents a very rare or perhaps the only example of a medieval tower inserted in a Greco-Roman context. Since 1994, the Salerno Superintendent of the Archaeological Heritage, in order to ensure the conservation of the tower, has undertaken the restoration of the outer walls of the ridges. The defensive system of Velia, in the territory of Ascea Marina, between the cities of Agropoli and Palinuro, was built to defend itself from the barbarian invasions, using the material coming from the ancient factories of Greek and Roman origin. The Tower, from the Angevin period, dates back to the XIII century and soon became an integral part of the castle, rebuilt in the Norman period and then destroyed by

Frederick II. Only the ruins remain on the edge of the promontory, a cylindrical turret and a sheer cliff. Degree of ruderization: LEVEL 3.

Camerota. The small town of Camerota is divided into a historical center made up of narrow streets, covered with arches, and originally protected by a medieval wall. Of the various access gates to the inhabited area, the only one visible today is Porta di Suso, decorated in the upper part by a marble head of one of the marquises who controlled Camerota in the mid-1100s. The highest part of the village is dominated by the medieval castle. The Marquisal castle of Camerota, consisting of a two-level building, was equipped with a main tower, useful to ensure the defense against enemy attacks. In 1552 a Turkish army attacked the castle and damaged it. Today only the boundary walls, the moat, the towers and a chapel inside remain. The castle, home of the various feudal families that have succeeded over the centuries, is currently open to visitors. Degree of ruderization: LEVEL 3 (Figure 4).

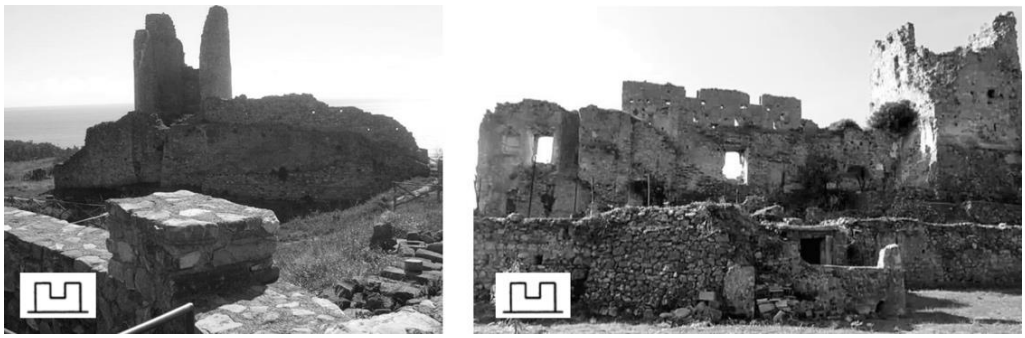

Figure 4. *Castles of Velia and Camerota (Sa)*

Capaccio. Very little remains of the ancient city walls of the city of the town of Capaccio. Precise data on the evolution of Capaccio Vecchia are provided by the ruins of cisterns and wells. Today, the entire planimetric conformation remains of the medieval urban settlement, which was subject to several levels of development. Traces of beautiful houses found near the top of Mount Calpazio, together with some fragments of ceramics, testify the presence of inhabited nuclei in the ancient village at least until the eighteenth century. The village extended on the northern slope of the hill with the castle placed in defence of the city. The ruins of the castle still dominate the plain. The castle was built to defend the city from the frequent raids of the Saracens; in 1246 it became the protagonist of the event remembered as the "Congiura di Capaccio", against Frederick II of Swabia: The conspirators, who took refuge in the castle, were killed and the fort was conquered after only three months. Then, the castle was renovated during the Angevin and Aragonese period and used as a prison. Disused until the end of XIX century, when it was used by the Military Engineers, now is into a state of complete abandonment. Degree of ruderization: LEVEL 3.

Gioi Cilento. At Gioi Cilento, almost nothing remains of the castle, located on a hill almost 700 mt above sea level, in the middle valley of the Alento. However, traces of the town walls still remain, with cylindrical turrets on the defensive curtain on the north side of its perimeter. The village is still dominated

by the remains of the ancient castle. «Essendo Gioi, circondata da massicce ed inespugnabili mura, si entrava in paese da sette Porte. Fra settentrione e levante ne esisteva una detta "Portanova". Era di forma architravata, ampia; e dai ruderi e dai diversi pezzi di considerevoli dimensioni, che ancora si conservano, è da credere che "Portanuova" sia stata maestosa, magnifica, ben lavorata e degna veramente, solo di un'Università agiata. Dalla base, su cui erano sdraiati due leoni ed un leoncino, si innalzavano alti, larghi e scanalati pilastri, di pietra compatta e tenace, e terminavano con un architrave, e con cornice finale, ben corrispondente.»[14] Degree of ruderization: LEVEL 3 (Figure 5).

Figure 5. *Castles of Capaccio and Gioi Cilento (Sa)*

Discussion and Results

The knowledge project offers valuable information about the nature of buildings and their condition. The model for the definition of the degree of ruderization gives back a good objectivity in the definition of the state of fact of the works and it is useful in the definition of the interventions to be carried out, operating first on the most unfavourable parameters. Moreover, the ability to adapt and modify the parameters, especially the medium-low ones, which can be varied, added or subtracted, adapting from time to time to the cases under examination, is appreciable.

Identifying the level of rudeness and the favourable and unfavourable parameters of an artefact helps the technician and the decision-maker (public administration, protection bodies, private) in the choice of the priority interventions to be carried out in safeguarding the buildings and in making future reflections on the integration capacity of the construction with possible programs of reuse and recovery, at architectural, landscape, social and economic level.

Certainly, the model is open to next implementations and improvements that can affect the classes, the numerical values and the number of classes (extended, average, partial), by following on-site experiences and expert validations.

Future scenarios also include the refinement of the coefficients *b*.

The cases assessed fall within the level 3, advanced ruin, and therefore need priority and urgent interventions for the safety of the walls and to avoid the

14. See G. Manna and A. Salati, *L'antica Gioi* (Napoli: Edizioni Scientifiche Italiane, 2003).

disappearance of goods with high material and immaterial value. The research is now moving towards the next phase, which consists of evaluating the levels of integration with the new functions.

The castle-ruin is almost familiar with the landscape in which it is inserted, drawing unusual profiles of hills and mountains. It tells of legends, stories of misery or fortune, destructive events and abandonment, representing an ineliminable element of the identity of the place, so that its loss would arouse in the community a sense of extraneousness and emptiness.

For this reason, any project must take due account of the testimony it bears for the whole territory and civil society, in terms of tangible and intangible signs, marked by the time that, like a "great sculptor", is able to engrave the statues, monuments, beauties in the open air and, by extension, even the entire human race. However, the approaches to safeguarding and managing ruins remain a very open problem, by virtue of searching for balance between the needs of the authenticity protection and the urgencies of the changed contemporary panorama.

The first phase is the "project of knowledge". Once this phase is completed, the expert can make a first critical evaluation by virtue of what has been found and of his own experience.

This evaluation is useful in the subsequent "description phase" in which the building is inspected in its decay and instability factors. In this stage it is useful to use the model for the definition of the degree of ruderization, whose parameters and results may be a valid turning point in the drafting of a more prudent project, by defining the priority of the interventions and the possible level of integration. This second phase ends with a new critical evaluation of the observer aimed at strengthening or, on the contrary, at modifying the first initial estimates.

The next "characterization phase" includes the evaluation of the causes and of the "diseases" that the building suffers from which, together with the previous investigations, allows the implementation of conservation, rehabilitation and consolidation interventions, after a careful diagnostic investigation. The latter is of fundamental importance, especially in the field of archaeological restoration, in order to determine present and future risks and define a project characterized by conservative actions based on the criteria of minimum intervention, non-invasiveness and reversibility.

Finally, it is necessary to envisage post-project activities that can guide towards the best enhancement of the work in the context in which it is located, with a view to global enjoyment by several types of users (overcoming physical architectural barriers or sensory, indoor or outdoor lighting, scheduled maintenance, effective communication of historical and architectural features, dissemination of symbolic and cultural values).

Conclusions

The castles-ruins represent the testimony of the past but, at the same time, they are dynamic works, available to integrations and new relationships. It is not a question of pure abandoned stones but of a new form and image that, despite its

fragmentary nature and incompleteness, is absolutely meaningful, full of historical values, like an artistic work to preserve, with the least possible alterations, in order to guarantee its future interpretation.[15]

It is necessary to make a new reflection on the problems related to the recovery and constant maintenance of castles and fortified works, according to new systematic approaches to seismic risk and to the behaviour of masonry structures that require a more careful evaluation of interventions in different aspects: historical-architectonic, security, functionality, potential for fruition in the future. A correct intervention in defence of this important heritage can guarantee the preservation of its aesthetic and historical identity and avoid the introduction of extraneous or invasive elements that can distort the historical-architectural configuration of the building complex.[16]

The lack of knowledge of this particular form of architecture has often led to abandonment, incautious interventions and even demolitions of fortifications and entire city walls. The diffusion of knowledge and culture for the protection can, however, lead to a correct "use" and "fruition" of ruins and fortifications, in order to respect the communities and to pass on the history, tradition and evolution of territories and their identity.

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15. See P. Torsello, "Il Rudere come Testo e Pretesto," in *Proceedings "Il Rudere tra Conservazione e Reintegrazione"* (Roma: Gangemi Editore, 2006).

16. See F. Ribera, "Presentazione," in *Testimoni di Storia. L'Architettura Molisana tra Conservazione e Riuso* (ed.) P. Cucco (Salerno: Officina Delle 11, 2018).

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Re-Conditioning: From Strategy to Project: Gabicce's (Italy) Waterfront Case Study

By Alessandro Gaiani[*]

The unlimited growth typical of the Modernism and Post-Modernism has left a disorderly and uncontrolled soil consumption along with an urban heritage mainly designed on functional organization, that the economic crisis, social changes and time have emptied of their primary sense and abandoned at a slow decline. The redefinition of meaning of this heritage takes place with a theoretical and methodological approach that includes memory, innovation and sustainability leading the mutation of spaces towards the assumption of new value by using tools of hybridization. The architectural theory underlying the proposal presented for the redefinition of the Gabicce waterfront, a city of the linear coastal system of Emilia-Romagna, is that of circular re-conditioning. The philosophy is based on the contamination between places and objects capable of reactivating the identity of "discarded" urban elements as seaside resorts, where the contemporary tourist fruition has led to physical and symbolic obsolescence. The main objectives are:

Redefining the limit by changing it in margin: the interface between the new and different social relations and spaces.
Involve the discarded urban elements, the traditional seaside resort, in a place that host events 365 days a year.

The methodological process uses the one proposed in 2003 by Haeckel, Adaptably loop, based on the multidisciplinary of knowledge. It is implemented whit one new point and declined in: sense, field of action in which it operates, the areas between the beach and the border of the built space; interpretation outlines the elements of the circular and adaptive process, with a re-elaboration of the concept of border in porous margin: band of overlapping of cultures and events linked to tourism; decision defines the intervention strategy: next clusters from the "discarded" built area and a different layout and form of the resorts in the new margin; action determines the operational implementation tool, the BEND, evolution of the traditional seaside resort with a concave form for winter use, or convex for the summer one; the outcome, a project that forms an urban archipelago between units heterogeneously arranged on the ground united by the denial of the "consumption" system.

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Introduction

The infinite growth, typical of the modern and post-modern linear system, has left as a legacy a chaotic and uncontrolled consumption of soil. It has led to a series of consequences to face today, like the environmental sustainability of the system or the social sustainability of uncontrolled dilatations. We are in a condition that presents at the same time a series of problems together with resources able to reverse the process from a linear structure to a circular one adaptable to the changing conditions of the context that would allow to activate a conscious "growth".

The most substantial legacy of the Modern Movement is having denied to architecture a linguistic ability based on the semantic value of its elements, favouring a research that focused on the syntactic structure of the project starting from its own function; a mechanics of composition, which represents the continuous search for a method of universal validity, in the paradigmatic logical vacuum of modernity.

The Modern modelled objects defined through their masses, the organization of solids and voids, the constructive system and the functional organization, founding on these design grammars the pride of permanence and the challenge to time. The Post Modern proposed single objects based on completely personal languages conceived nowadays as urban hybrids, social condensers in which the multiple stories and values are intertwined, both the ones of the place and of its pre-existences and the ones of the community that lives there. The need for minimum soil consumption leads to condense urban complexity into a maximum density within a place. Architecture abandons the dimension of immutability to evolve in a dynamic form. Expressions like temporality, transience, generic container, mutability in time, interchangeability of the parts are now identifying elements of many buildings, mostly abandoned or obsolete, in order to incorporate the rapid mutations of the fruitive modalities and of the social systems. Within these spaces the uses will be completely mixed, hybridized.

Within this historical-methodological framework, will be defined a new system of architecture of the project that has the characteristic of welcoming the memory of the collective history and the infinite set of individual multi-frames, in a never completed fluid progression; a scene for the polymorphic and metamorphic actors of today, the disused and obsolete spaces and their inhabitants, generative seed to re-propose and re-launch the architectural project.

The historical moment seems fertile to be able to transform the demands that emerge from this new sense of living, in a strategy of architecture that can no longer disregard the plurality of aspects of contemporaneity. It includes not only the aspects of the discipline, but also those of a social, economic and environmental nature.

Architecture must respond to the many forms of changing contemporary living, typical of a hybrid thought, through a renewed ability to integrate and contaminate its theories, methods and strategies in a new project method. It is an inclusive strategic approach of the mutated cultural, social and economic scenarios

in contrast to the thought of continuous growth, or perhaps "waste"[1] and closer to the circularity and the recovery of resources and existing spaces.

Unlike the linear system characterized by the continuous consumption of soil and resources, in architecture the circular system is a structure defined by the containment and arrest of such consumption, in which sustainability is not only a technical element but a *modus operandi*, immanent value, to collect and decline the multiple instances, regarding the environmental and social ones; a circular, adaptive process system that defines its operability through the architectural project.

Only the use of a methodology that allows a plurality of approaches can lead to the definition of an intervention strategy, i.e. the use of a system that allows to include the multiplicity of events of the contemporary and to collectively share a value space.

This approach establishes the temporary end of architecture as an autonomous thought. This has already happened in the past. Aldo Rossi believed architecture finds proofs in history. Robert Venturi conceived architecture as communication capable to recover the manifestation of latent cultural values within a specific social group and to translate them into an historical symbolism. According to Peter Eisenman architecture finds confirmation within a language endowed with a structure and syntax typical of semiological linguistic theory.

Because of this approach, architectural thinking in this continuous and amplified flow of "social types" and their multiple instances, cannot escape from the attempt to understand their needs, nor be limited to a realization of a single response to quantitative dynamics. It must be capable of activating qualitative processes, which can respond to the needs of a multiple and mutant contemporaneity. Through this only way will be possible to carry out interventions capable of satisfying the different and heterogeneous needs of society.

The replacement, in contemporary design, of the closed idea of the composition (the exact and precise establish of parts) with the one of "*system*" (an "open" mechanism or ideogram vector, capable to favour varied combinations and different formal manifestations), is one of the first examples of paradigm change.[2]

To the architectural thinking of a mechanistic function, or to the post-modern concept of exaltation of the concept/design originated from a personal approach, is opposed the systemic thinking of organization. The new architecture is defined and made understandable through non-Euclidean canons. A logic of the organization of relations with the different present elements, i.e. information, communication, temporality, spaces and their conditions, the topographical and morphological-type appearance, the historical one, the community values, the activities, the proximity and the reciprocity, elements belonging to the place (the pre-existences), to the cultural and social context, to the technological area of the digitization of information and those of the discipline itself.

1. Pippo Ciorra, presentation of Sara Marini, *Parasite Architecture. Recycling Strategies for the City* (Macerata: Quodlibet, 2008), 11.

2. N. John Habraken, *The Structure of the Ordinary: Form and Control in the Built Environment* (Cambridge and London: MIT Press, 1998).

The project will use the study of the relationships between the elements and their mutation in a process logic implemented with a circular method adaptable to the conditions of the context. It allows to create a new architectural philosophy sensitive to dynamism. While traditional reading was based on the static, the permanence of things and on architecture as a static element in space, contemporary design assumes a dynamic logic for everything that concerns the structure of interactions, of the open, of the complex and of our own time.

The new procedural method allows to enter a relational city characterized by a *''urban reality in which architecture is nothing but a weak connective system to a mass of human presences of relationships, interests, exchanges that completely fill the space.''*[3]

More and more frequently, the contemporary architecture becomes a *hybrid project*, open, a set of theories, laws and tools that define a structured set of actions with a common theoretical base. It is implemented through a multitude of different languages. It dialogues directly with the physical and social characteristics of the place. It is an interstitial project, of mediation and link between different contexts. It operates within an area already heavily anthropized by establishing close relations within disused structures, or spaces "discarded" by the city.

In this space of *circular and sustainable* consideration, it is necessary to update the *methods* and *tools* of the architectural project, thinking of a new design system that *inserts* and *supports* the elements of the discipline and those of the social, economic, cultural and physical context. The aim is to summarize up to metabolize in mechanisms of *"mutation of the existing"*, within a hybrid system suspended between a theoretical and physical context. It is not a re-starting; it is a work in progress on the existing one.

New disciplinary tools capable of implementing the *"game of rules and definitions, of techniques and tools"*[4] are defined within the obsolete and neglected heritage of our cities. They constitute the theoretical and disciplinary core of architecture and they allow to regenerate what is abandoned or discarded today, on its way towards functional, structural and aesthetic obsolescence. It will act within the contemporary space considered as a complex and multifaceted scenario, open to the potential catalyst of new ideas, to strategic proposals and project actions. They are capable to move on micro local points, using "soft" systems to re-propose interventions that find their cultural reference in the circularity and the intervention strategy in *reconditioning*.

Finally, will be outlined the application tools capable to investigate and work on the Existing, with attention to those able to change and enhance as it was done by Italian architecture from the period between the two wars of the last millennium.

> "[…] *to look at architecture as an achievement on the world of our life that translates and specifies through the project. Architecture asserts itself according to its own expressive means, affirms itself in the culture of its own*

3. Jeremy Rifkin, *The Civilization of Empathy (*Milan: Mondadori, 2009), 27.

4. Michel Foucault, *The Order of Things* (trans.) A. Fontana, M. Bertani, V. Zini (Torino: Einaudi, 2004), 24.

> *time: it is an expression of change, but jointly offers itself through the resistance of the place of its establishment and its necessity to relate to the context.*"[5]

Gabicce is the last village to the south of the coastal linear system of the "Riviera Romagnola" (east Adriatic coast, Italy) one of the most extensive tourist area in Italy that extends from the Lidi Ferraresi to Cattolica. The opportunity of the architectural competition for the redefinition of the Waterfront, offers the possibility to implement a circular methodological process of mutation of the existing, by redefining the relationship between the beach and the inhabited area through the transformation of the current boundary / border into a porous margin.

The urban structure is characterised by a grid of orthogonal streets starting from the channel-harbour placed orthogonally to the sea after the war. It includes hotels, houses, pensions, restaurants and pizzerias, amusement parks and discos part of a huge patchwork without empty spaces. The urbanization interventions have colonised the coast through fast and progressive "fills", transforming the original nucleus, ancient ports for fishing, in a complex hybrid and articulated landscape. An aggregative coagulum in which multiple layers of temporal velocities are superimposed endowed with peculiar characteristics. However, they only exist by their mutual and complex interrelation.

In the last fifty years, a density system has developed along the edge of the beach defined by the seaside resorts that wind linearly along the coast and define the boundary between the built environment and the beach.

The relationship between the beach and the sea shaped in the urban fabric a series of bands parallel to the coastline planned the space in a functional "zoning" articulated: sea, beach, bathing establishments, hotels, residences, entertainment. However, the character that distinguishes Gabicce from the other centers along the Adriatic coast is that a "waterfront" between the beach / beach establishments and hotels has not been formed, but only a small road that is functional for the access of the hotels, leaving the role of main road to the parallel street inside the hotel blocks. This has involved a reversal between the beach and the users and those that normally in the other centers are fronts here are backs (Figure 1).

This condition refers to a classic legacy of the modern where the linear growth is confronted with the functional obsolescence of the containers and of the sea tourism system which today is totally outdated. Nowadays tourists are looking for a set of more varied and different activities and experiences. Numerous destinations are gearing up to offer a wide range of resources, to diversify their offer, combining entertainment, sport, cultural and natural heritage, gastronomy and Welfare.

This leads to a certain decrease of tourist visits linked to the activity of the seaside resorts. The cities of the coast find in the new symbolic and communicative meaning of architecture the main tool to solicit a desirable economic rebirth.

5. Damiano Cantone and Luca Taddio, *The Affirmation of Architecture* (Milan: Mimesis, 2011), 16.

Figure 1. *Urban Structure and Linear System of Coast (Gabicce, Italy)*

Aims & Objectives

The characteristic of this portion of coastline, a 130-kilometer long beach, is the aggregation from north to south of small and medium urban centres without interruption in a limited width band. The linear density of the beach resorts hinged between the beach and the built environment is typical of this portion of coastline (Figure 2).

Arose in the post-war period and massively developed from the sixties onwards, these buildings do not have an architectural characterization. They originated by "functional" logics with respect to the tourism offer of those years. In 1964, at the Triennale di Milano (XIII Triennale) was held an exhibition on free time, an important topic for a civilization in which television was dominant and the automobile boom had produced the tourist boom. One of the most interesting aspects in that Triennale was the system to display ideas known nowadays as "multimedia". It allowed multiple choices, anticipating, in a real format, what is now called a hypertext, a virtual labyrinth. Besides that, another element was to unite all forms of art and wonder if the nascent society of the show could inspire a freer lifestyle, full of original experiences or create a new kind of conformism.

Figure 2. *Linear Density of the Beach Resorts (1958)*
Source: Photo Archive n. 174 arch. Galvani F.lli Marchi.

The new realism of those years can be found in today new realism. A similar condition is happening nowadays. At the time realism was the outcome of a physical war of borders. Today we are laboriously trying to get out of a war that is no longer physical, but economic and social. Ferraris[6] defined new realism as a condition where "*[…] real needs cannot be reduced to interpretations, they have asserted their rights, confirming the idea that realism (as well as its opposite) has implications that are not simply cognitive, but ethical and political."*[7] It is necessary to work on architecture through a new "realism" introducing a new figure, a new space, a place that contains and welcomes an infinite set of individual images and shared values. A space/place with its own social structure, identified in the waste of the current consumer society, where a series of rules give to each individual a spot in the space/place, which leads to create a new standard "public/sharing" to judge the surrounding.

The aim is to identify holistic revitalization strategies for urban areas that today lead separate lives. To change the space between the urban fabric and the beach in a place that can host the evolution of the "tourism" system, extended into the more ambiguous and postmodern *leasure* form.

This evolution must start with the existing spaces that must quickly change their configuration based on the quality and the type of the event.

This entails a different approach where the spaces for new socialites, gathered in community have to change their state from static to dynamic. They must become social capacitors, able to host different events for disparate communities limited not only to one single day or the summer, but the whole winter.

6. Maurizio Ferraris, *Manifesto of the New Realism* (Bari: Laterza, 2012).
7. Ibid, 5-6.

The recent scenarios mark the definitive sunset of the tourism system both linked to the bathing activities and to the consumption in large supermarkets for the instantaneous and multi-level exchange of emotional episodes. "Sociality" replaces the static model of holiday and free time typical of the modern.

It has been used a project system that supports the elements present in the social, economic, cultural and physical context. It synthesizes and endorses them through a metabolic mechanism of mutation of the existing. It doesn't originate from of continuous "incipit" or a tabula rasa, within a hybrid system always suspended between a theoretical and physical context.

The idea of a *sustainable mutation* is seen as a set of bodies in evolution. Mutations are the basic elements through which evolutionary processes can take place. The metamorphoses determine the genetic variability, a condition for which organisms differ from one another for one or more characters. On this variability, the natural selection operates through genetic recombination, promoting favourable mutations to the detriment of unfavourable or even lethal ones.

The redefinition of the boundary between the beach and the urban fabric of Gabicce becomes an opportunity to respond to the competition notice and to create spaces able to accommodate the new forms of tourism, through the following objectives:

- Apply a circular strategy based on the re-conditioning of the existing by recognizing a *value* to the existing *waste*.
- Involve in the project the opportunities (waste) present in the urban fabric by recovering them in a logic system and making them accessible to the community. The new polarities will be able to define a new dynamic in the waterfront area and will regenerate the fabric from inside.
- Redefine the *limit* so that it assumes the role of an interface between the new and different socialites and spaces that tourism offers.
- Expand the public space of the promenade along the seaside through an evolution of the traditional bathing resorts able to host the "events" required by the new forms of tourism.

Methodology

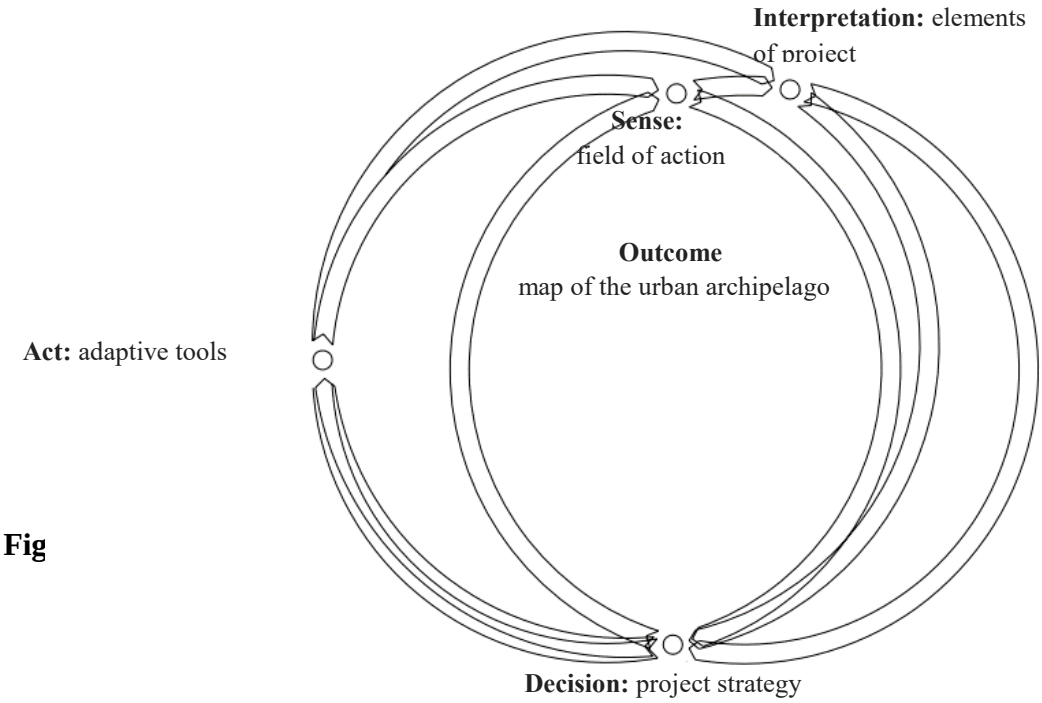
The concept of a procedure that can be declined through the strategy is assumed as a paradigmatic element for the contemporary project of architecture. A mechanism as a plan of actions conceived and designed to achieve an objective, identifying aims and direction of the project that is accomplished through a series of actions and tools. A strategic approach gives answers over time to the different and changing programs, increasingly accelerated, that the space of change will suffer over time.

The design process, proposed in 2003 by Stephan H. Haeckel, *Adaptably loop*,[8] is the methodological starting point of the procedure. It is based on the multidisciplinary of knowledge and content and on the synergistic interaction between all the components. Based on four points, the *Sense*, the *Interpretation*, the *Decision*, the *Act*, for Haeckel the process allows intersections and interactions between different knowledges.

The application of this design process evolves into a personal interpretation of the four points with a fifth one: The *Outcome* (Figure 3).

However, the Haeckel process applied to the various complexities of the phenomena typical of the contemporary leads to reconsider the original reading of the contaminations between the many and infinite stories of the social and architectural elements that define the design. They relate, intersect, hybridize, allowing a continuous "adaptation" to the fast and changing conditions of the project itself.

The *Sense* becomes a field of action to work and try "*to break the vicious circle that links the growth of empathy with the increase of entropy.*"[9] The *Interpretation* outlines the elements of the process. The *Decision* defines the intervention strategy through the elements of the circular and adaptive process. The *Act* determines the operational tools to implement the strategy. The fifth one, the *Outcome*, is the result of the application of the tools.



Fig

8. Hugh Dubberly, *How do you Design?* San Francisco (USA: Dubberly Design Office, 2004), 131.

9. Cfr. Rifkin, *The Civilization of Empathy*, 2011, 28.

Sense: Area of Intervention

The areas between the beach and the limit of the urban fabric, including the bathing resorts, are perfect to finding answers to the questions of today society (Figure 4).

On one side respect for the environment and on the other the ability to create new forms of sociality in meaningful places, with defined palimpsests and awaiting a change.

Figure 4. *Areas of Project between the Beach and the Limit of the Urban Fabric, including the Bathing Resorts*

This proposal arises from the need to practice a new vision of the operations of reconversion and mutation. A vision that arise awareness to the re-conditioning not as an outcome, but as a process, constant and continuous, in which the role of the architect changes from being a pure technical of the project to a strategist architect, skilled amanuensis of *urban overwriting.*

Re-condition part of the existing, starts with the mutation of the area between the beach and the first strip of the built fabric and its elements, the seaside resorts.

The application of the method refers to the concept of a *circular system*, a model that puts into circulation resources already used but not in total obsolescence.[10] This generates not only primary material (re-cycle) but a new device able to produce a result of *waste* = *value*[11] (Figure 5).

A tool of the integration between what exists and new insertions, implemented with the logic of the minimum intervention. It enhances the circular system in the

10. Michael Braungart and William Mcdonough, *Cradle to Cradle Remaking the Way we Make Things* (New York: North Point Press, 2003).

11. Beatrice Lamonica, Jakob Rutqyist and Peter Lacy, *Circular Economy, from Waste to Value* (trans.) M. Vegetti. Milano: Egea, 2016.

whole design process not only as mere "technological sustainability" or re-assembly components used in other contexts or uses.

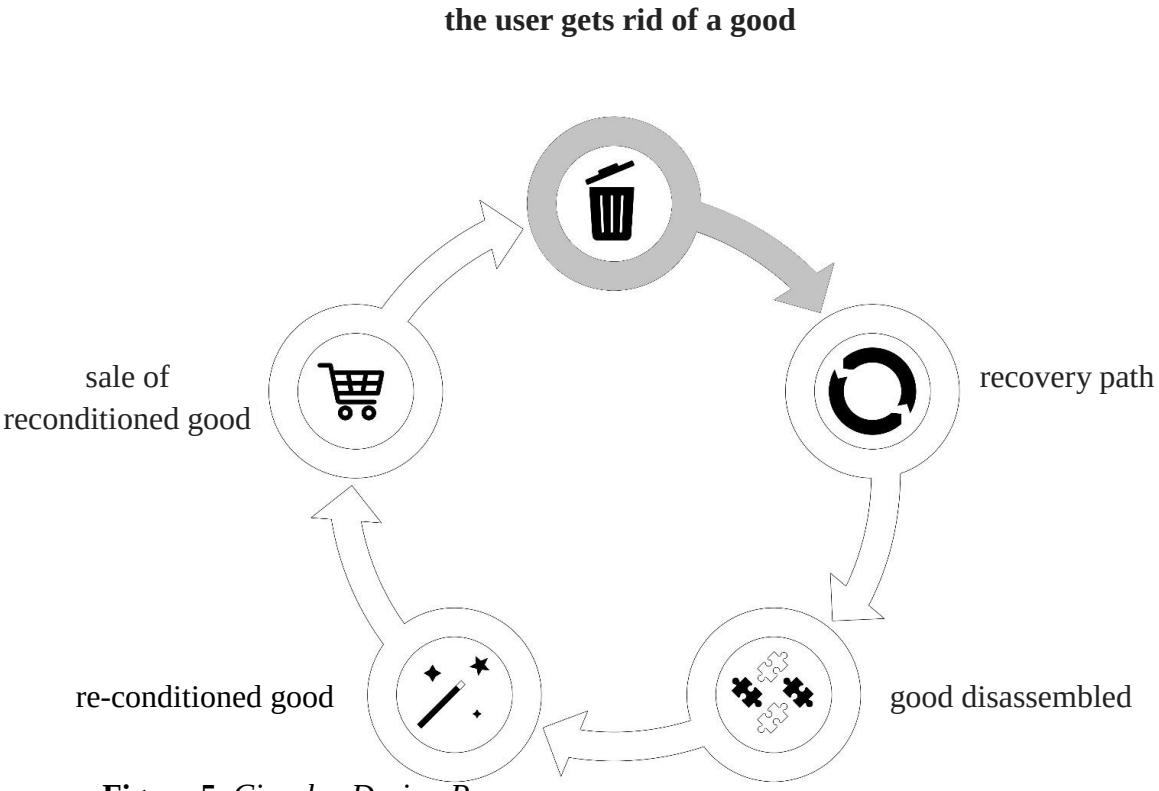


Figure 5. *Circular Design Process*

It is a project strategy based on precise urban insertions able to first revitalize the object and then the surrounding through an osmotic principle. This procedure can be implemented gradually, even temporally, step by step, area by area, through clusters. It can be created starting from a small space with simple interventions able to gradually transform and redesign the area.

Interpretation: Elements of the Process

The main element of the methodological process is the circular reinterpretation of the concept of *border* (Figure 6).

It is no longer a line of physical separation between the beach and the inhabited area, but the overlap of cultures, ethnic groups, events, different tourism systems, mobile margins always in continuous discussion and mutation.

The *margin* is an interface tool that is based on the concept of social and architectural proximity.[12]

12. Gian Luca Favetto, *If the Border is a Path of the Mind* (La Repubblica, 2016), 32-33.

Figure 6. *Current Linear Boundary between the Buildings and the Beach*

The social one is based on a new way of seeing the permanence of people within a group whose intentions are shared, and which include processes of integration. The architectural one is where the internal and external common spaces become an interesting complex of intents in the definition of a barrier. It is intended as a margin, threshold, which acquires thickness, and which is modulated to meet the different needs of use.

The *margin* is an element that refers to a variety of situations adjacent to something that is physically recognizable; areas of proximity, hybrid interfaces, in which the social and intergenerational encounter takes place. It is a tool that captures the elements of permanence and memory to be privileged and actualizes new ones through which the project will develop.

No more boundaries, i.e. lines that mark a separation between different entities, or limit, which reinforces the concept of separation; a porous space between the elements of the "relationship".

Working with this vision allows to design not simple objects but dynamic, temporary relational spaces that introduce a new concept of intervention tools.

Therefore, the recycling of the seaside resorts and the nearby discards of the area, the residual situations, "occasions" can enhance their value in an urban network, as they are widely spread within the fabric.

Building placed linearly along the margin can be considered *clusters.* For example, the Mississippi, an unorganized empty space, Piazza dei Martiri and Unità di Italia, the urban park located near the dock, the belvedere, the sports area and the private parking located at the high promenade adjacent to the San Bartolo park.

Other residual and unresolved spaces (urban voids, neglected buildings, etc.) are also available within the fabric. They can be recovered and made accessible to the community not only for commercial purposes linked to the bathing activities but as places of services and leisure to host the different activities.

Decision: Project Strategy

The change from border to margin happens through two steps:

- involving the *clusters* that the "discarded" building has left
- changing the current limit between the beach and built in the *margin*

As for the second action, the proposed structuring of the bathing system changes the system from linear to punctual, *grafting*[13] new *cluster* "polarities" arranged at different distances along the beach. This creates a margin space, with different thickness defining new public space, where is possible to create multiple situations (Figure 7).

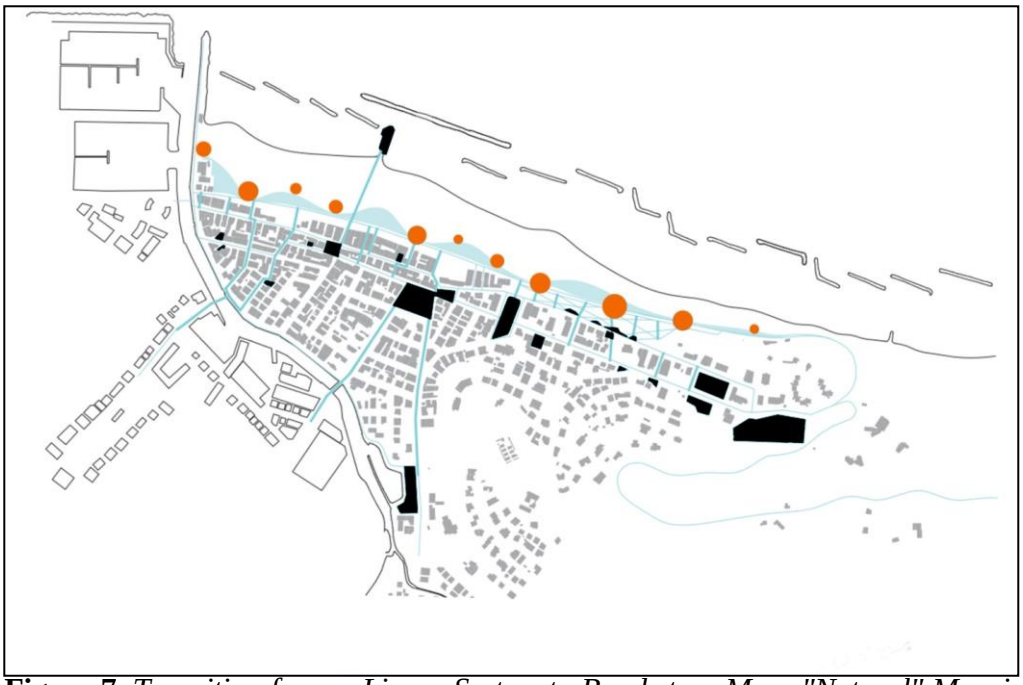


Figure 7. *Transition from a Linear System to Bands to a More "Natural" Margin System of Inclusion and Threshold between Built and Natural*

These *clusters* must be able to fulfil specific operational needs and grant a high degree of management freedom. This system must be widespread, so that it can radiate extensively in the urban fabric. A neural system approach is thus defined.

In addition to the inclusion of new clusters, this system redefines and underlines the routes of connection through new flooring and soil treatment. Moreover, it sets the points of grafting between the city and the sea.

Results

A fundamental step in this direction is to define a new nature of the activities on the waterfront.

13. Cino Zucchi, *Innesti-Grafting*. La Biennale Venezia, 14th International Exhibition of Architecture. Marsilio, Venezia, 2014.

The idea is to insert the Sand Park, bounded by an undulating longitudinal pedestrian cycle lane (to connect the park of Mount St. Bartolo to the promenade in a naturalistic way) a public portion of what remains of an eminently private experience. This is possible (especially in the lower part of the promenade) thanks to the depth of the beach that does not sacrifice the area for the resorts (Figure 8).

Act: Adaptive Tools for an Urban Overwriting

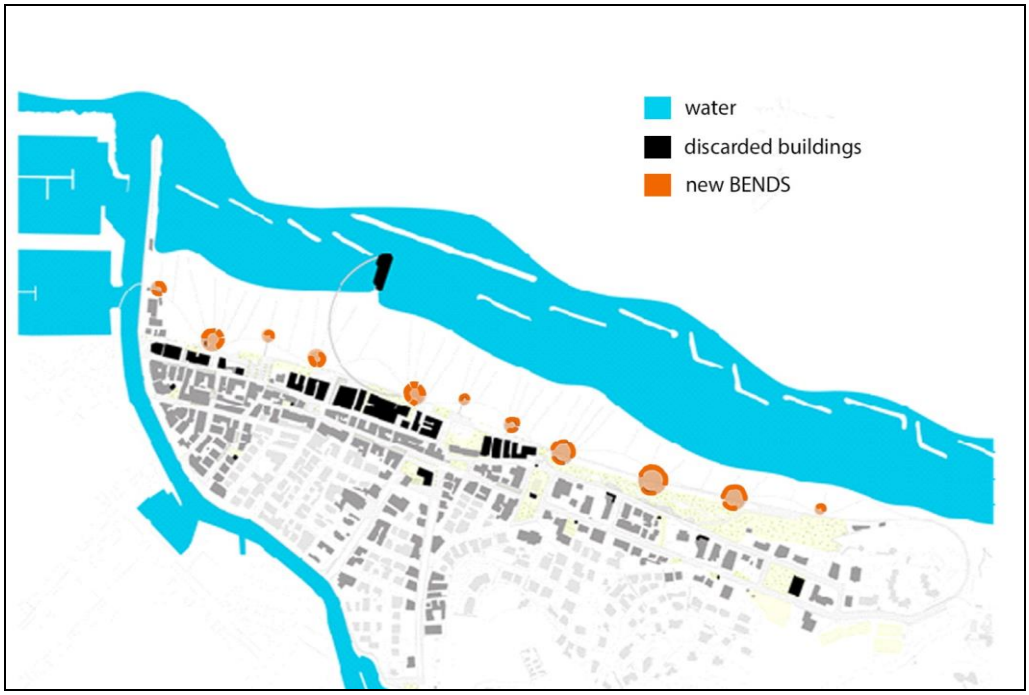


Figure 8. *Design of Proposal with All New Elements and Tools in a New System* (The main elements of the project strategy were highlighted: the new bathing establishments, the buildings rejected today for re-conditioning and the margin between buildings and the beach).

While from a naturalistic point of view the Sand Park allows the re-appropriation of the beach to a more public use, from the anthropic one the element that characterizes the proposal is the Bend system (Figure 9).

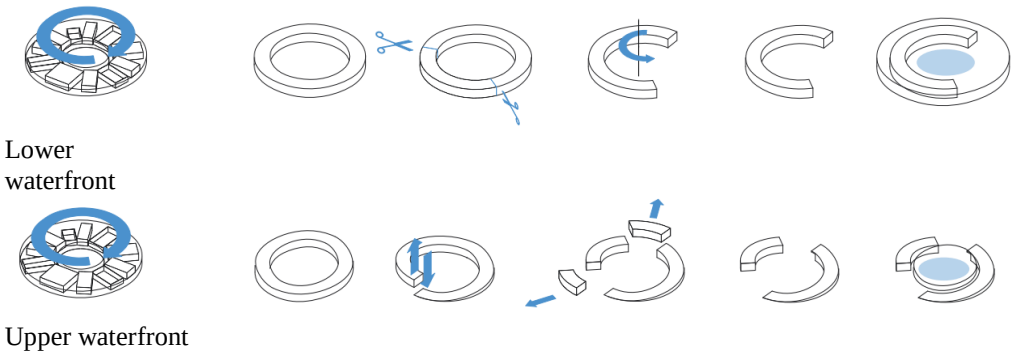


Figure 9. *Design of Bend with Concave and Convex Form*

The Bend is the evolution of the traditional bathing resort. Its name comes from the "bending" operation of the traditional linear construction (a barrier to the perception of the sea from the city) by collecting the necessary activities in curled shape.

The shape of the curvilinear Bend derives in part from the desire to formally explain the new strategic paradigm and, as Thomas Kuhn has masterfully taught us, a new paradigm can only be imposed through a break with the previous state of knowledge, on the other hand to make more. These buildings are "natural". Being included in the "natural" margin, the beach, it was thought that a language should be used that dialogues with the surrounding neighborhood. This form was used thinking that these constructions will be dedicated to leisure time and that neuroscience has defined that this formal system brings a sense of relief and freedom to the observer. The Bend is flexible by nature and can be configured to accommodate multiple seaside resorts without moving the basic facilities: services, deposits and restorations.

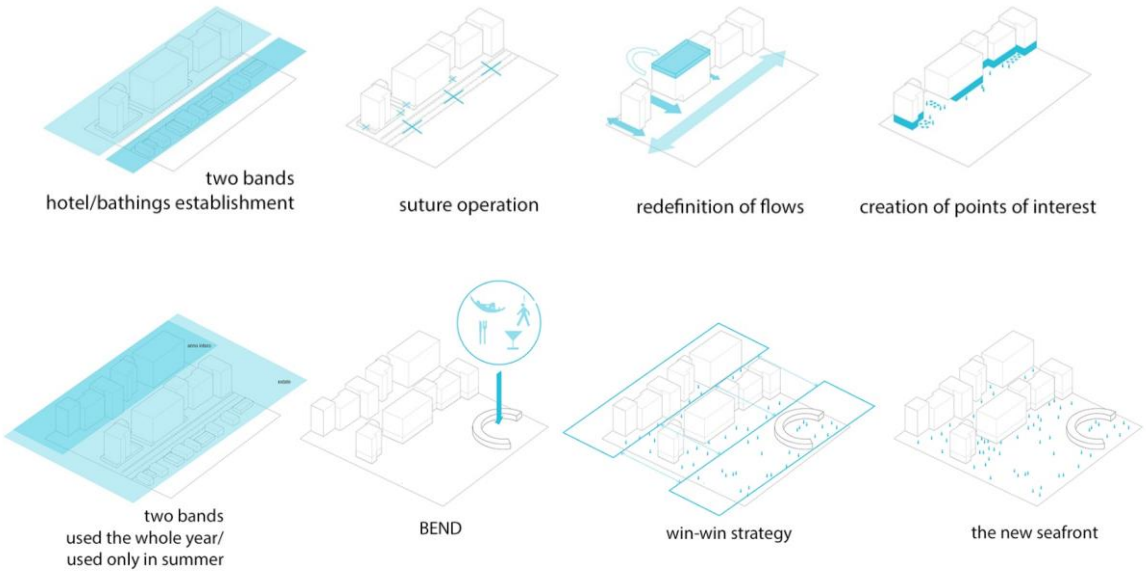


Figure 10. *Design Strategy which Highlights the Desire to Change the Current Space between the Building and the Beach from a Linear System to a More Natural, Punctual System in which the Relationship Space is Differentiated.*

The Bend is constituted by a light metal structure working as a support for diaphanous draperies. They grant different opacity levels during summer and winter. They define the internal curled space and a clear architectural recognisability (Figure 10).

Within the Bend it is possible to identify indeterminate spaces as well. Areas characterized by free occupation and function, following specific logics of use and programming of the public administration or other associations in charge of the management.

In its dual concave/convex configuration, the Bend defines two space-use strategies. The convex shape is suitable for summer use, aiming for the largest possible opening to the exterior, linked with the management activities of the bathing resort. The internal side allows more intimate experiences like refreshment, relaxation and leisure. On the other hand, the concave shape is suitable for a winter use, since it is possible to hermetically close the external side, ensuring a more protected space (Figure 10).

The Bend, as a flexible, detachable, recyclable and recoverable organism, can be used 365 days a year.

The project envisages 4 different types of Bends designed to host beach support services.

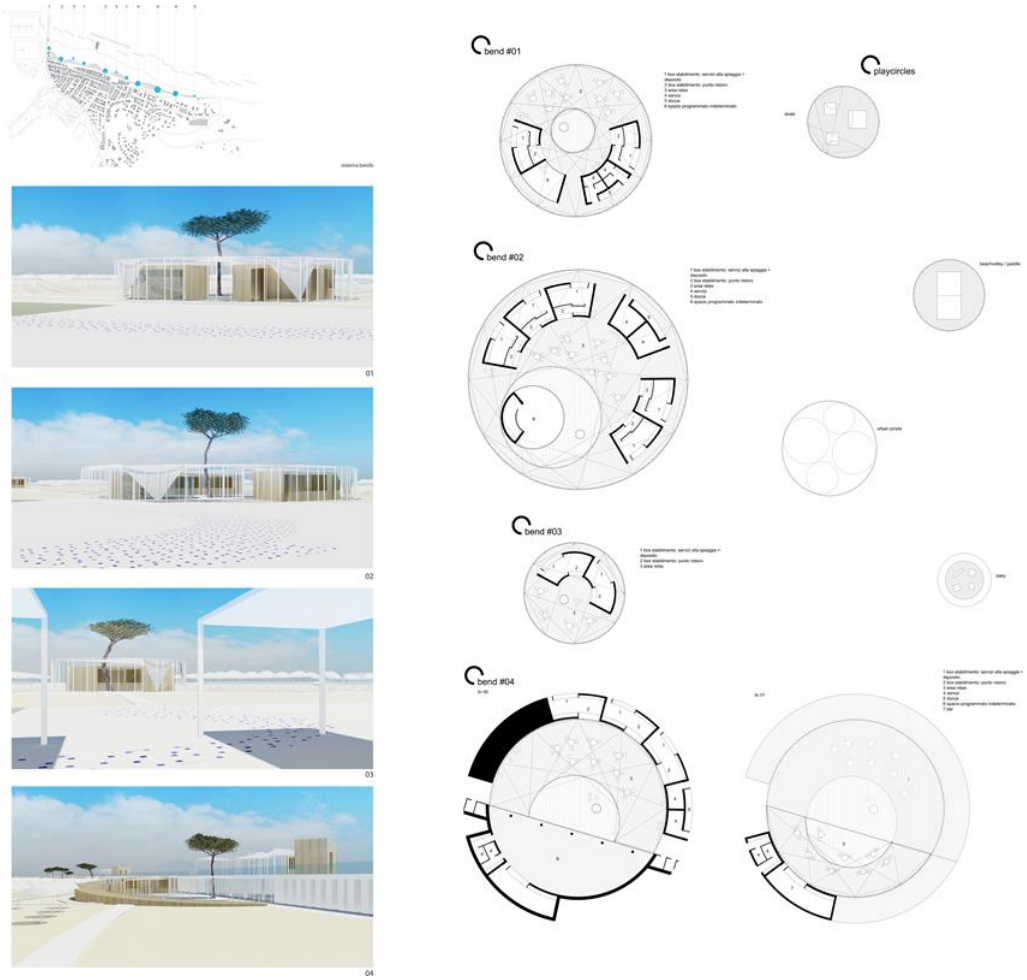


Figure 11. *Design of Bend and Organization for Different Functions*

Providing undefined programmed spaces within the containers *cluster* is an essential element to support the waterfront re-conditioning strategies. This data aims to underline the dual nature of these spaces, the need for their prediction as "triggers" of events and the completely free and flexible nature of their function and use.

Each cluster has its own autonomy and the *archipelago* created is connected through an open public space of paths and services that acts as a unitary background and community gathering of the whole complex. This approach allows to structure projects through different design grammars with interventions at different scales and on different spaces; a new urban metabolism.

The project progression through harmonic steps between spaces and people allows to keep the temporal progress of the construction of the containers adaptive, up-to-date and responsive to the new relations born in these reconditioned places.

The adaptive tools used to operate on existing clusters are conformed at the different scales and concern both the urban and architectural project and the communities related. They are the triggering of the mutation systems of spaces currently without identity, suspended between their physicality and obsolescence. These tools will define the urban re-conditioning by making a real social exchange platform possible again. It changes the attractive elements of social communities making them real, current and experientable in a physical relationship between people that permeate places of interaction.

The pre-existing heritage, the field of identity, becomes the field of action of the social and architectural project. Their relations and the selection on the existing elements trace new hierarchies and allow the introduction of new tools for a sustainable mutation. The tools are designed as lightly, minimal interventions giving new meaning to places and relationships.

The tools related to the urban *clusters* are "adaptive" to the project, i.e. able to satisfy possible reconfigurations over time. That is because they derive from a strategy and not a language. Therefore, the work proceeds through a series of juxtaposed and hybridized figures, that interpret the previous layers, while introducing new ones.

The strategy uses adaptive tools that include interventions at different scales and on different real and digital spaces:

- **Grafting** with the tactics of *Landmark, Density, Urban Markers* and *Box in the Box.*
- **Parasite** with the tactics of *Adaptive Prostheses.*
- **Edge** in its meaning of *Limit / Border / Inhabited Margin.*
- **Level 0** *Open spaces* as a connection system, a *platform ground* in the form of a vacuum or a fabric, and a *social capacitor.*
- **In-between** with *Infill* and *Pocket Park.*

The design tools derive partly from an interpretation of the typological classification system as an evolutionary and dynamic principle applied to spaces and situations not yet codified.[14] Partly from adaptive logics used by a circular structure that changes and configures according to the conditions of the context.

The 365 effect is extended through the activation of these tools to the hotels buildings on the waterfront as well.

14. Cfr Franco Purini, "From Post Modernism to the New Realism. Notes on Italian Architecture in the Last 30 Years," *Magazine of Estetic*, no. 61 (2016): 152-170.

There are therefore different types of intervention that could lead to urban subtractions. The recovery of a structural span of some hotels for public use, through the *level 0* tool or the *In-between* improve specific accesses to the beach through the grafts. The recovery of the subtracted volume will be granted with a new volume on the roof, a *parasite*[15] (Figure 11).

The possibility of reconfiguration with *grafts* or *parasites* of the ground floor of the hotels facing the sea according to a balanced logic between the public acquisition of private appurtenances and the possibility of change of use of the ground floor.

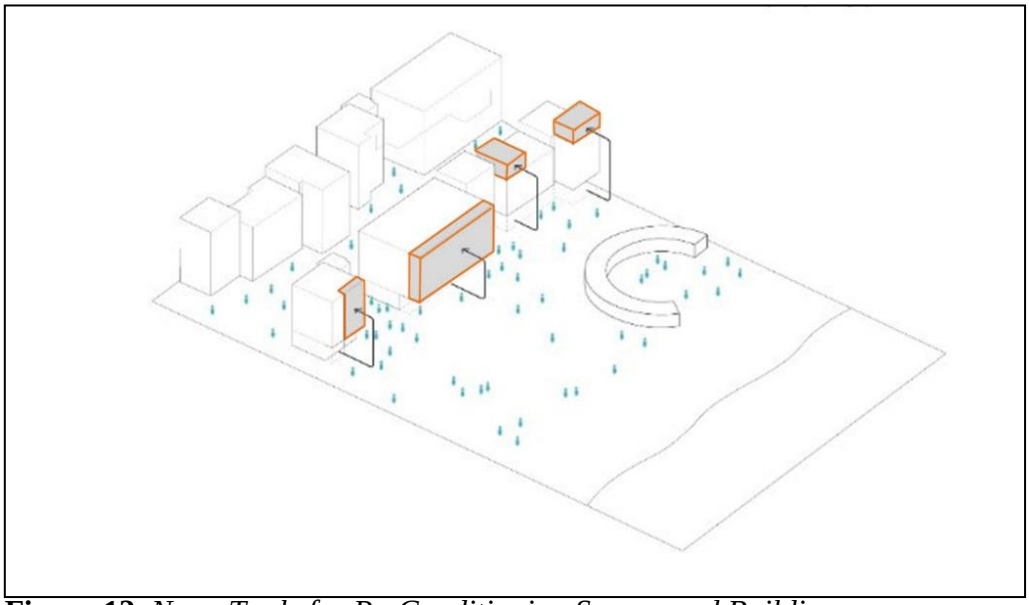


Figure 12. *News Tools for Re-Conditioning Spaces and Buildings*

In this representation the tool of the parasitization of buildings was used to create even on the buildings themselves a new margin intended as a threshold space between the building itself and the beach. This operation allows the inversion of the spaces of the buildings that from the back become fronts (Figure 12).

Conclusions

Outcome: Map of the Urban Archipelago

The result of this design method is to propose a regenerative intervention project, able to promote a solution of re-conditioning of the existing; an ever-changing configuration as fast as possible, attentive to the times of the city to make the project adaptive to the flow of time, in harmony with the changes in the real, cultural and immaterial context, working in and with time.

15. Cfr. Marini, *Parasite Architecture. Recycling Strategies for the City*, 2008.

An operation managed with this methodological design approach, would immediately lead to first, partial, results. It would make the *starting point* immediately visible to focus in the short-term outcomes with operations *in* and *around* the area. Above all it would reactivate in *real time* the connection between the area and its interior. It would allow over time the continuous overwriting of space and relationships between people that would fix the existing gap between the urban development speed of the city and the community.

Within the design process is envisaged a continuous system of monitoring and interdisciplinary management of the results able to guide future choices.

In this way, the actualization of the time factor would be inserted into a design system, allowing for a continuous updating of the project *tools*. Time is an element of the digital system, such as of contemporaneity,

The right balance between a forward-looking approach to the symptom and one of specific care, form an *urban archipelago*, aimed at healing and modifying those that currently constitute the greatest obstacles to a strategic alliance between city users and spaces.

The urban archipelago expresses a plurality of different discontinuous relationships between the elements. They are heterogeneously arranged on the ground but united by the denial to the "consumption" system (from small shops, shopping centres, hypermarkets, cinema multiplexes, outlets, etc.) and by the value approach expressed through a juxtaposed contamination.

Within the city the re-conditioning strategy determines a map of the urban archipelago, organized with minimal interventions and adaptive tools, random cluster in the urban scene.

It is no longer the outcome of transformations planned by urban design. It is a fragmentary and solitary insertions generated by the relation between the strategic project and the continuous verification/mutation of the needs expressed by the local community and the multiple and different requests of that large community linked to tourism (Figure 13).

Figure 13. *New Configurations of Space between the Beach and the Urban Fabric, Including the Bathing Resorts*

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Heritage Replacements: From Convent to Square and to Contemporary Architecture - Conventual Urban Transformations in Andalusian Cities

By F. Javier Ostos-Prieto[*], *Javier Navarro-de Pablos*[±], *Mercedes Molina-Liñán*[‡], *Juan-Andrés Rodríguez-Lora*[+], *José-Manuel Aladro-Prieto*[♦] *& M. Teresa Pérez-Cano*[°]

In Andalusia (Spain), the conventual typology has shaped the urban centers of its cities following a process of implementation, which affects the traffic and internal organization of the city. In the mid-19th century, the confiscations led to the expropriation, demolition, and disappearance of a large part of their monastic spaces. The starting situations (size of cities, socioeconomic state in the 19th century or characteristics of the conventual foundations) gave rise to diverse urban responses. The bourgeoisie's need to "modernize" the cities led to the appearance of squares and the opening of new roads. On other occasions, the old factories were reused for the installation of new uses (prisons, barracks, markets, etc.), or their plots were used for new construction. The case of Plaza Nueva in Seville from the demolition of the San Francisco Convent is studied. Also, together with other Andalusian examples, such as the San Antonio de Padua Convent in El Puerto, the current Plaza Isaac Peral and Los Descalzos Convent in Écija. The case of this last city constitutes the counterpoint in the convent reuse, without generating relevant urban spaces. Once again, the Plaza Nueva, due to its condition of the centrality of the Andalusian capital, constitutes the maximum exponent of this urban and symbolic revision. The economic power put into practice its urban capacity, again through architecture. It will finance new buildings as representative images of their brands, companies, and institutions. The testimonies of the convent activity, the new spaces emerged from the disentailment actions and their new contemporary symbols constitute sequential fragments of urban history. They are necessary for the cities for their valuation and heritage understanding. The study of these Andalusian cases can serve as a reference for the detection of similar processes in the European Mediterranean frame.

Introduction

In the process of sacralizing the urban space experienced in most European cities, Andalusian cities will enjoy a special idiosyncrasy. Due to their chronology and the intensity of conventual occupation, they had a main role in its urban development. The arrival of the conventual orders has not taken place, logically,

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until the progressive conquest of the Islamic territory by the Catholic kingdoms between the 13th and 15th centuries. From that moment, the progressive establishment of the conventual system was decisively defining the urban area and the landscape of Andalusian cities. The demolition of this structure in the 19th century was determining the transformation of the cities. Then appeared the construction of the new bourgeois city and subsequent new socio-economic symbols of urban capitalism during the following 20th century.

The main objective of this communication is to deepen the understanding of the heritage dimension of the spaces in historic Andalusian cities; deepening in the knowledge of the consequences, topographical and symbolic, always triggered by one of the key events in the urban history of the populations of Andalusia: the disentailment, destruction, and reuse of the conventual building structures.

With the main objective of understanding the processes mentioned, this contribution focuses on the analysis of various case studies. These arise from the demolition of an important convent building. From this point, two divergent situations are analyzed, the emergence of new urban space and the filling of the convent block. In a second moment is taken into account the subsequent contemporary transformation of both situations. As the main case of study, the Convent of San Francisco in Seville has been considered, on whose site the current Plaza Nueva would emerge. On a second level, the Convent of San Antonio de Padua, in El Puerto de Santa María (today Isaac Peral Square), is incorporated as a similar and divergent starting point, as well as the case of the Convent of Los Descalzos in the city of Ecija, a marked counterpoint in the conventual reuse.

Methodologically, this research is the result of a mixed approach; something frequent, and essential, in analytical works of urban nature. The main bases of the study are based on the analysis and revision of a high number of secondary documentary sources. Here it has been used generic references to monasticism and how they are in Andalusian cities. At the same time, historiographical knowledge of the case studies is complemented by the consultation of primary archival sources. Secondly, urban analysis techniques have been used, supported by the comparative study of historical. Lastly, it has been studied current cartography and planimetry, as well as the interference of both with the real urban situation.

The Conventual Establishment

After the appearance of the Christian religion, the monastic phenomenon linked to a spiritual and individual retreat arose. Little by little, individuality was replaced by community, grouped together in buildings designed for this type of life. The first monastic orders,[1] were born here, which, unlike the traditional temple, generated a new type of building that supported the needs of community

1. There are two types of religious orders: monastic and mendicant. The monastics followed the initial schemes by developing a contemplative and isolated lifestyle in the monastery. Mendicant orders are characterized by active living, preaching, and alms living. While the first will be located usually in rural areas, the second will look for cities and villages. M. Cantera Montenegro, *Los monjes y la cristianización de Europa* (Madrid: Arco, 1996), 61-63.

life. Mendicant orders began their greatest rise from the 10th and 11th centuries in the Middle Ages. Their scope of expansion will be mainly Western Europe, since they are under the influence of Catholic Christianity. Although the east is also Christian, its orthodox branch will develop another conventual typology, similar, but without any relation to the west[2] (Figure 1).

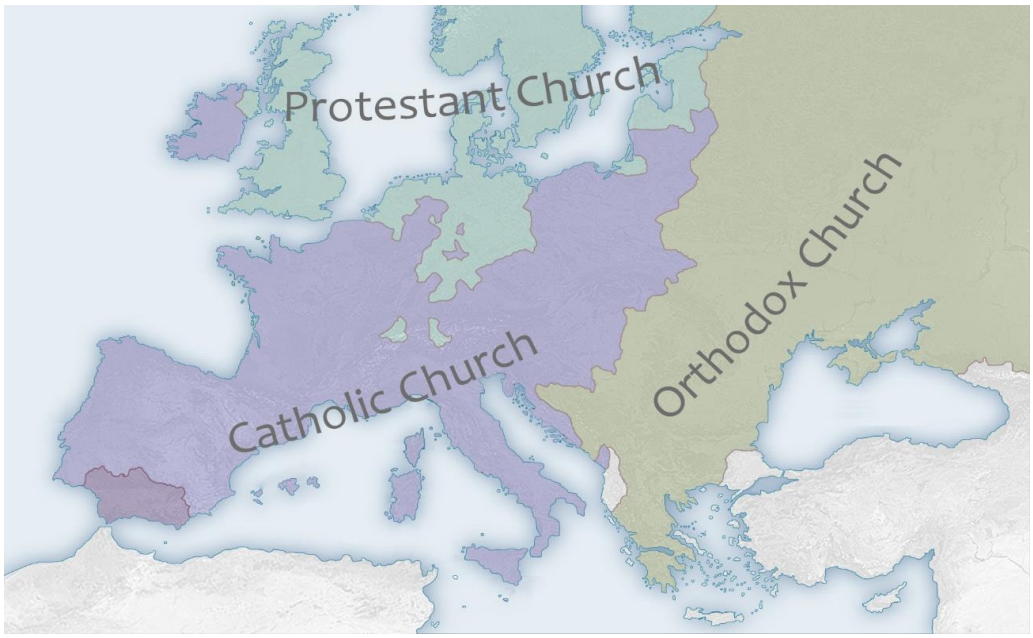

Figure 1. *Christian Churches in the XXI Century in Europe, together with the Andalusian Location in the South of the Iberian Peninsula*
Source: Data for the location obtained from Pardo Torregrosa, 2018.

The monastic complexes will constitute authentic buildings such importance that they will sometimes surpass the temples of the cities in which they are located.[3] They are not only buildings dedicated to worship and prayer. They configure a true sign of union and identity from the European perspective. In spite of the many differences between people, the power struggles of kings or geographical borders, monasticism has saved each of these difficulties by spreading throughout the continent. In this way, religious orders will make their appearance on the urban scene taking a leading role in many cities. So *[…] mendicants configure the urban context to the point that their greater or lesser presence will mean the greater or lesser economic and cultural splendour of cities. Depending on the category of a city, there will be in it one, two, three or the four most important mendicant orders: Preachers, Minors, Carmelites and*

2. J. Orlandis Rovira, *Historia de la Iglesia. La Iglesia antigua y medieval* (Madrid: Palabra, 2017), 187-200.

3. Buildings such as the Royal Monastery of San Lorenzo de El Escorial stand out in Spain. It was ordered to be built by Philip II in the 16th century. Although it was occupied by the order of Saint Jerome, it was the residence and burial basilica of the kings of Spain since then. A. Bonet Correa, *El Real Monasterio de El Escorial* (Madrid: Patrimonio Nacional, 2005), 20-26.

Augustinians.[4] The conventual enclosure is not just a piece dedicated to prayer, without relation between it and its environment. It is the opposite thing. It has a high level of importance articulating the territory through its situation in the different ways of communication between cities.

In a changing and growing world, convents will play the main role in building the city of the middle and modern ages. Although the phenomenon is repeated in the different countries of Europe, it will be decisive in a region located to the south of the Iberian Peninsula: Andalusia. It will be here where the religious orders will find a suitable place for their expansion and settlement. However, it was not until the 14th century that the first convent foundations were established. In the Iberian south there will be an impediment that will avoid the previous appearance of the monastic orders, another religion that from the 8th century occupies most of the entire Iberian Peninsula: Islam.

Conventual Foundations in Andalusia

The medieval panorama of the Iberian Peninsula was very different from the rest of Europe. The Islamic faith dominated the territory known as Al-Andalus from the 8th century. However, its influence will decrease in favor of the Christian kingdoms that from north to south will expel the Muslims.[5] After the Christian conquest of Andalusia between the 13th and 15th centuries, the town planning of the Andalusian region experimented with big changes with the arrival of religious communities. The communities with foundations in the peninsula will look for the urban nucleus of greater relevance and geographical strategy.[6] The oldest, Franciscans and Dominicans, were the first to make their foundations when they were present, along with the Christian troops, in the reconquest of Andalusia.[7] The kings of Castile favored its implantation to the rhythm of the war campaign itself .[8] Houses, fortresses, lands... were indeed distributed among the noble Castilians, but the orders were also benefactors of this distribution. They also received houses, plots, and lands where they could settle in the newly occupied enclaves. In the case of Seville, the military orders were initially accommodated, as they were the main collaborators in the war against Islam. After the occupation of the city in the 13th century, it gradually began to be established until it became the largest convent city

4. Cited in J. Álvarez Gómez, *Historia de la vida religiosa II* (Madrid: Publicaciones Claretianas, 1998), 278-282.

5. The conquest of Muslim territories by Christians will not be fast. It is a slow and long process that will last seven centuries. E. González Ferrín, *Historia general de Al Ándalus* (Córdoba: Almuzara, 2016), 10-15.

6. A. Atienza López, *Tiempo de conventos, una historia social de las fundaciones de la España moderna* (La Rioja: Marcial Pons, 2008), 71-79.

7. During the war many clerics and friars accompanied the Christian armies. Not only in prayer but also for military help. Many of the religious communities were also soldiers, such as the Order of Mercedarians M.C. García Torralbo, *M. C. Baeza Conventual* (Úbeda: Gráficas Minerva, 1998), 33-35.

8. J. Miura Andrades, "La presencia mendicante en la Andalucía de Fernando III," in *Fernando III y su época. Actas de las IV Jornadas Nacionales de Historia Militar* (Seville: Diputación de Sevilla, 1995), 509-519.

in Andalusia.[9]

The appearance of monasticism led deep urban changes in the cities. The 13th and 17th centuries will have the greatest conventual production spread throughout the kingdom of Seville. Of the 367 convents were located in 81 of the 155 municipalities in the region, which means an average of 2.4 convents per municipality of the kingdom and 4.6 per municipality in which there is a convent.[10] In this sense, López Martínez analyses only the ancient region of the kingdom of Seville. However, if we transfer the data to the whole community, interesting relationships can be observed. The number of convents during the 18th century has been selected from those cities that have the heritage protection of a Historic Complex and are medium-sized cities. As shown in the table (Table 1), an order is established by the province, convents, and city which, divided, gives us the relation quotient. Among the factors obtained, as a result, we can observe the great concentration and influence of monasticism in provinces such as Seville, Malaga or Jaén, unlike the rest. Regions such as Cadiz, Cordoba or Granada maintain a similar level concerning the number of convents per city, Huelva being in the last place.

Table 1. *Andalusian Convents and Medium-Size Cities*[11]

	Convents	**Cities**	**Convents/Cities**
Cadiz	32	11	2.91
Cordoba	6	2	3.00
Granada	12	4	3.00
Huelva	2	2	1.00
Jaen	45	6	7.50
Malaga	38	4	9.50
Sevilla	71	8	8.88

Source: Number of medium-size cities from the Andalusian Territorial Landing Plan (POTA) and number of convents from Madoz, 1847.

The conquest of Andalusia not only attracted the mendicant orders because of the new distributions but also because of the need to spread the faith and Christianize the ancient Islamic lands. In this first foundational stage, the kings of Castile will propitiate the appearance of the conventual orders using donations of lands that allow them to settle. In the city of Ronda (Málaga) can be seen how the convents of Santo Domingo and San Francisco are directly financed by the kings.[12] This fact was crucial in the conquest stage, as it gradually configures the

9. M. T. Pérez Cano, *Patrimonio y Ciudad. El sistema de los conventos de clausura en el centro histórico de Sevilla* (Seville: University of Seville, 1996), 92-103.

10. A. L. López Martínez, *La economía de las órdenes religiosas en el antiguo régimen* (Seville: Dip. Prov. De Sevilla, 1992), 35-36.

11. In Table 1, the province of Almería is not included, because there are no cities with this condition: it must appear a medium-size city and it must be a historic complex.

12. The allusion to kings refers to the Catholic Kings: Isabel of Castile and Fernando of Aragón.

medieval model of the city.[13] The task of occupying the cities and transmitting the Christian religion among its settlers became necessary. Now, the convent buildings became part of the urban landscape of the Andalusian towns and cities. In addition to the large capitals, due to economic or conventual strength such as Seville, the medium-sized cities acquired notable importance in the Andalusian panorama. The settlements of the nobility generated the development of small villages. Examples of this fact are the town of Osuna, belonging to the lordship of the dukes of Osuna, the town of Marchena, head of the duchy of Arcos or Sanlúcar, belonging to the Medina-Sidonia family.[14] Their lords enlarged their cities endowing them with new palatine or ecclesiastical constructions using the appearance of new conventual buildings. Osuna stands out among the medium-sized cities mentioned, as it obtained university and collegiate schools, which are still active today. In these previous cases, such as the Marquises of Estepa or those of Alcalá la Real, the nobility obtained part of the independence from episcopal control, so they were in charge of cover costs and attract orders to their cities.

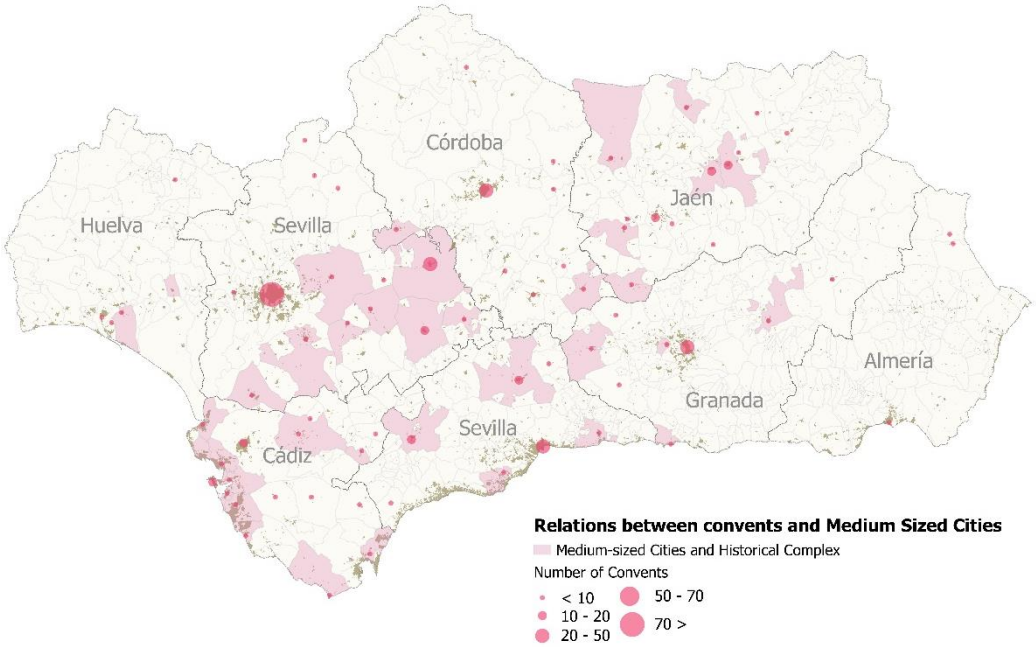

Figure 2. *The Relation between Convents and Medium-Size Cities*
Source: Medium-size cities from Andalusian Territorial Plan (POTA) and convents from Madoz, P.: 1847.

In the conventual map generated in the first decades of the Christianization of Andalusia (Figure 2), the orders of San Francisco and Dominicans stand out mainly in big cities like Seville and Cordoba. Afterward, they did not take long to find settlements in smaller towns but with strong political, economic and territorial

13. M. A. Ladero Quesada and J. Sánchez Herrero, "Iglesia y ciudades," in *Actas del VI Coloquio Internacional de Historia Medieval de Andalucía y las Ciudades Andaluzas* (siglos XIII-XVI) (Malaga: University of Malaga, 1991), 232-233.

14. S. Rodríguez Becerra and S. Hernández González, "Los conventos en la conformación de las ciudades medias andaluzas," in *Zainak. Cuadernos de Antropología-Etnografía* 31 (2009): 467-501.

importance such as Antequera, Carmona, Écija, Marchena, Ronda or Osuna, without forgetting the strong conventual presence in the cities of Eastern Andalusia such as Jaén, Baeza, and Úbeda.[15]

Urban Transformations

The architectural convent heritage inherited in the cities of Andalusia is not eternal and unalterable. Since the conventual foundations during the Middle Ages in the 14th century, in the next centuries the monastic buildings were not changed until the 19th century. One of the determining events for monasticism and the Spanish church, with an enormous repercussion, will be the different disentailments carried out during the 19th century. Liberal political ideals initiated the first disentailment processes. Between 1834 and 1855, the disentailments of Mendizábal[16] and Madoz[17] will take control of the process. It would be a determining process for the urban history of the cities. There was a massive sale of an enormous number of properties belonging to the Church, in favor of the new bourgeoisie, linked to the urban development of the cities.[18] Most of the convents disappeared or suffered great transformations, leaving only very few without intervention.

It is very frequent to find reuses of these conventual spaces for new needs and social uses: housing, quartering, education centers, industry...highlighting the case of Seville with various actions that have partially or transformed the conventual buildings.[19] The convents are large surfaces inside the cities; the new times conceived new transformations to the cities as squares and avenues. Consequently, new streets were opened or renovated in old conventual blocks. The new developer operations have before them a large area that they must lot to be able to obtain greater profitability. At the same time, its profitability produces an architecture of low quality that favors the generation of a new road, giving rise to

15. M. J. Parejo Delgado, "Conventos, monasterios y hospitales en Baeza y Úbeda durante la Baja Edad Media," in *Actas del VIII Congreso de Profesores Investigadores de Hespérides* (Baeza, 1989), 196-198; Miura Andrades, *Frailes, monjas y conventos. Las Órdenes Mendicantes y la sociedad sevillana bajo-medieval* (Seville: Diputación Provincial de Sevilla, 1998).

16. The disentailments in Spain took the names of their main authors. Two Spanish politicians named Juan de Dios Álvarez Mendizábal and Pascual Madoz e Ibáñez. F. Simón Segura, *La desamortización Española del siglo XIX* (Madrid: Instituto de Estudios Fiscales, 1973), 50.

17. Previous to the disentailments, data of the existing buildings can be known through the dictionary made by Madoz. All the buildings are shown here with details, belonging to all the municipalities in Spain, before the start of the disentailments. The exhaustive inventory carried out by Madoz together with cartographic and iconographic information of the conventual spaces generates clues and keys to understand the transformations suffered in an urban space.

18. A. Lazo Díaz, *La desamortización de las tierras de la Iglesia en la provincia de Sevilla (1835-1845)* (Seville: Diputación Provincial de Sevilla e Instituto de Estudios Sevillanos, 1970), 115-127.

19. M. Molina-Liñán, C. López-Bravo, and E. Mosquera Adell, "El Convento en una nueva sociedad: Transformaciones y nuevos usos. El caso de los conventos sevillanos," in *Actas del XI International Congress AR&PA: El papel del Patrimonio Cultural en la construcción de la Europa de los Ciudadanos* (Valladolid, 2018), 47-56.

an urban fragmentation.[20] But the complete transformation that takes place in some cases in a square, in a public space for the city, is striking. Therefore, it is very recurrent to eliminate the old conventual pieces and replace them with modern squares, a meeting place in the city and the opening of a new access road to the urban center. The cases of the convent of San Francisco in Seville or the barefoot Franciscan convent of El Puerto de Santa María, in Cadiz, remain important references in the historical memory.

The first generated the square called Plaza Nueva, the first example of public *Haussmannian* space in southern Spain. The "Decree on the opening of new public spaces" issued by José Bonaparte in 1810[21] had meant in the city of Seville the definitive legal support for the conversion of conventual structures into public spaces;[22] these architectures, which had been the functional muscle of the capital of the Spanish Golden Age[23] (Figure 3). The conservation state was already weakened by the war against the French occupation and the decrease in the number of clerics. This was the prelude to the aforementioned disentailments that would follow throughout the 19th century. This strategy of transforming the urban scene would be executed in three paradigmatic cases: the convent of Santa Cruz, of La Encarnacion and of San Francisco.[24] The first of the spaces mimic the urban scene of the Santa Cruz neighborhood, although the convent of La Encarnación will give rise to a market. The city needed a market after the replacement of the Casa Lonja by the Archivo de Indias. The last of the extinct convents would be transformed by a square of orthogonal geometry -characterized by the civil power represented in the Town Halls- that would end up capitalizing on the 19th century the bourgeois emulsion and the definition of the space-symbol of a new Seville: the Plaza Nueva.

20. M. T. Pérez Cano and E. Mosquera Adell, "Sevilla ciudad conventual, urbanismo y patrimonio," in *Cescontexto. Debates* 6 (2014): 180.

21. José Bonaparte, brother of Napoleón Bonaparte, was king of Spain between 1808 and 1813 after being conquered by French troops. M. Lara Martínez and L. Lara Martínez, *Breviario de historia de España: desde Atapuerca hasta la era de la globalización* (Madrid: Edaf, 2018), 369-374.

22. J. A. Piqueres, "José I, El Rey Regenerador. El discurso josefino sobre la regeneración de España," in *Cuadernos de Historia Moderna* 11 (2012): 135.

23. The period of splendour of the arts, literature, politics and economy of the Spanish Empire between the 16th and 17th centuries is called the Spanish Golden Century. Lara Martínez and Lara Martínez, *Breviario de historia de España: desde Atapuerca hasta la era de la globalización*, 2018, 237-239.

24. Ollero Lobato, "De convento a espacio público," 2018, 6-29.

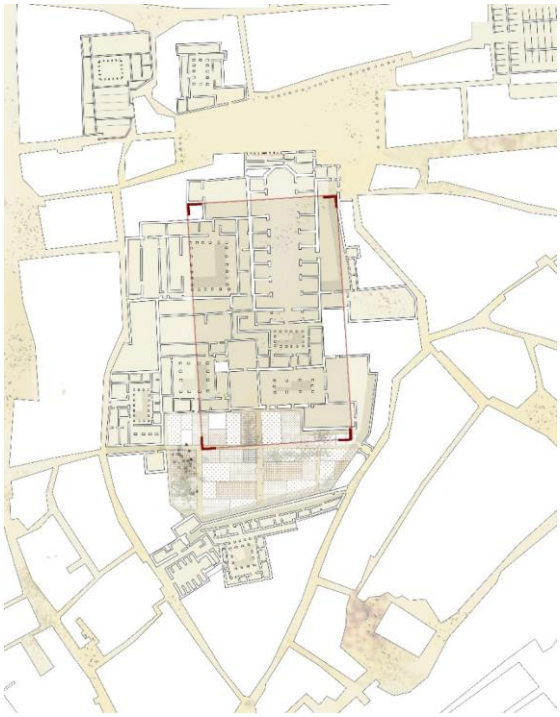

Figure 3. *Planimetry of the Convent of San Francisco De Seville, 17th Century (The red perimeter determines the position that the New Square would acquire).*
Source: Planimetry based on the hypothesis of the Collación of Santa María around 1600. In Moreno Pérez, 1993: 243.

Cayetano Vélez and Ángel de Ayala, consecutive municipal architects, will unsuccessfully design two projects without finishing them. Either project was not ended due to a lack of resources during the French presence or due to internal discrepancies between the promoters in charge of their execution.[25] The definitive project, executed in 1856 by Balbino Marrón,[26] would provide a suggestive radical matrix, capable of executing the symbolic exchange between ecclesiastical power - defined in the definitive demolition of the convent, maintaining only the town hall rooms and a side chapel- and the res publica civitas. The Plaza Nueva in Seville introduces a new open space, completely unusual in the city. It is inserted in a context that is still strange to alignments, openings and expansions in which the Islamic urban scene continues making the city (Figure 4).

25. J. M. S. Garmendia, "En torno a la arquitectura doméstica sevillana del siglo XIX: el paso del neoclasicismo a la arquitectura isabelina," in *Laboratorio de Arte: Revista del Departamento de Historia del Arte* 27 (2015): 323.

26. The work of the architect from Bilbao has been extensively treated in M. Linares Gómez del Pulgar, *Balbino Marrón y Ranero, Arquitecto municipal y provincial de Sevilla* (Seville: Diputación de Sevilla, 2016).

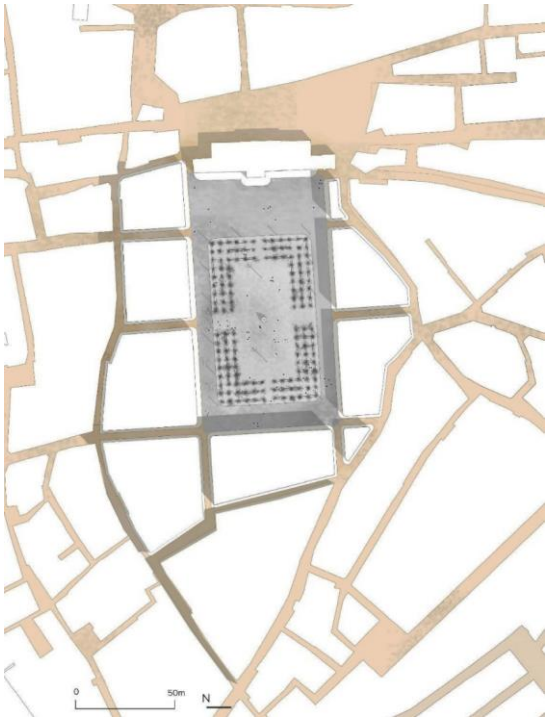

Figure 4. *Reconstruction of the Project for the Plaza Nueva Proposed by Balbino Marrón in 1854*
Source: Own elaboration.

The story of the construction of the square begins, in an urban context full of conventual complexes that, after the disentailment and exclaustration, begin his disintegration.[27] The demystification of the State during the 19th century[28] is highly permeable. It permeated the current social opinions and the way of approaching urbanism from a State that is recovering competences historically granted to the Church.[29] The change in the paradigm of power, catalyzed in architecture as a symbol, forces us to look for new milestones or architectural references; typologies capable of introducing a hierarchy in which civil power presides over the spatial and functional narrative.

The construction of a "Plaza Mayor" emerges, consequently, as a collective and primordial objective. It was a question of leaving a mark on the historical chronology, showing how ecclesiastical power gives control to civil power. Seville's Plaza Nueva is, therefore, a choral work that is born and matures as a

27. The dense conventual structure begins his expand through particular and singular performances. Although fragmentation is recognisable as a common factor, the urban transformations that lead to the mutation of corridors into streets and compasses into squares are carried out through a process of "morphological renovation": the conventual spatial units change from private to public function without changing their form. The "interior reform", an instrumental strategy developed in other Spanish cities during the 19th century, did not reach Seville until the fourth decade of the 20th century. Pérez Cano, *Patrimonio y Ciudad. El sistema de los conventos de clausura en el centro histórico de Sevilla*, 1996, 97-99.

28. Reference is made to the previously commented Spanish disentailment by Madoz and Mendizabal.

29. F. M. Gilabert, *La desamortización española* (Madrid: Ediciones Rialp, 2003), 42-44.

matter of common interest, with the collective conviction that it is a key opportunity for the development and improvement of public space.[30] In the instances exchanged between the City Council, the promoter entity "Empresa de la Nueva Plaza", the Archbishopric, the Academy of Fine Arts and the owners, an urgent need is detected. It is necessary to bring a successful conclusion to the construction of a 'hygienic' space, 'at the height' of a 'great city.'[31]

The period of six decades in which the square conserves its original characteristics, is consolidated as the only space in the urban scene. The architectural regularity and illustrated perspective are juxtaposed: the bourgeoisie obtains its space for leisure, recreation and leisure in what is considered, over and above historical architectures and monuments, the most 'modern' icon of the city at the end of the century. When the social and political context revolves towards the liberalisation of the rental market at the beginning of the 20th century - rent prices having been liberalised with the Tenancy Law of 1842-,[32] the recommendations written by Balbino Marrón in the matter of protection of facades are relegated to a second plane wielding reasons of style and decorum; the partial performances in key milestones of its perimeter end up blurring due to the irruption of capitalism in the real estate market of the city, impelled by the celebration of the Ibero-American Exposition of 1929.

As in the case of Seville, the convent of San Antonio de Padua suffered too from a new urbanization project in the city. The consequence was a square called Isaac Peral, over the primitive convent (Figure 5). It will be in this square where the town hall is also located, forming the nerve center and administrative power of the city today. The opening of this square meant the demolition of the convent, installed on the land since 1684 and active until 1835. However, it was in 1868 when its demolition order was issued due to the scarcity of public spaces in the city center.[33] The disappearance of the convent not only affected the total integrity of the building, but also all the properties contained inside; from altarpieces to devotional images or canvases. The convent demolition project was commissioned to the architect Adolfo del Castillo, who also carried out the first square project. The project was executed with rectangular features occupying the old landscaped area and cemetery of the convent. The square acquires value as an element of urban planning of its surroundings, imposing its geometry on the new farmhouse and road. At the same time, it becomes the center of activity and social life of the city where, after its appearance, a building is built that will be used as a courthouse. However, years later, the building will occupy the city council due to its central location in the urban nucleus, until today.[34]

30. J. Navarro de Pablos, *La plaza nueva de Sevilla*, Final Master Thesis (Seville: University of Seville, 2017), 158-159.

31. This has been verified after reading the letters collected in the Municipal Historical Archive of Seville (A.H.M.S.), belonging to the file "Plaza Nueva o de San Fernando 1851-1917", consulted between 07/07/2017 and 23/11/2017.

32. C. A. Comelles, "La evolución histórica del arrendamiento forzoso de vivienda: de la imposición a la expropiación," in *e-SLegal History Review* 25 (2017): 8.

33. J. R. Barros Caneda, *Arquitectura y urbanismo en el Puerto de Santa María durante el siglo XIX*, Doctoral Thesis (Seville: University of Seville, 1995), 79-85.

34. Ibid, 88-89.

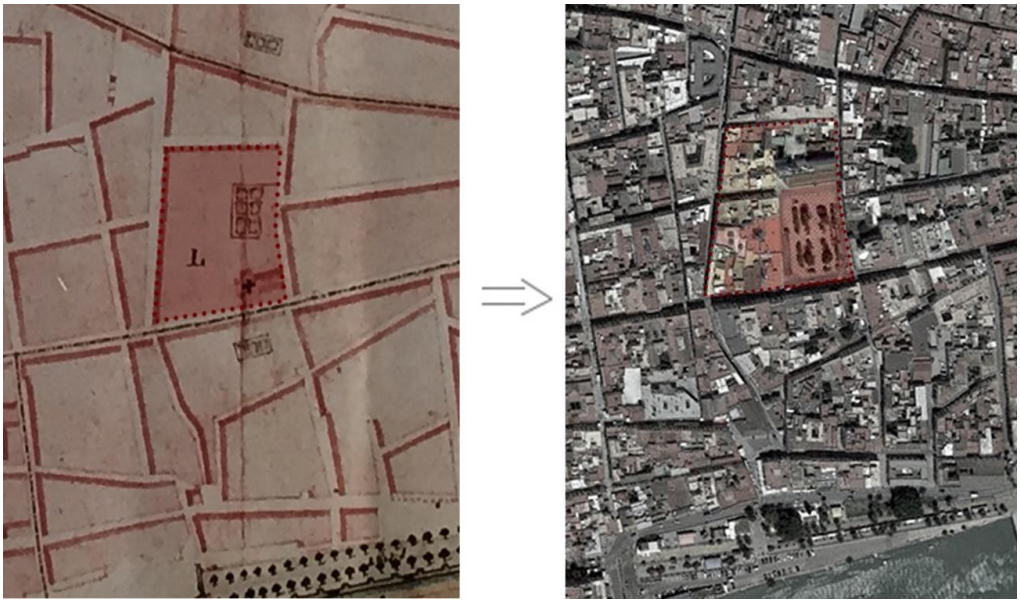

Figure 5. *Transformation of the Convent of San Antonio, Puerto de Santa María*
Source: (Left) Anonymous Plan from Provincial Tourism Delegation, 1730 (Right) Air Flight from National Geographic Institute of Spain, 2018.

As we see, it is common to find in urban positions with a high convent density, different types of urban transformations. Conventual cities have their historical centers very crowded. Therefore, when new large surfaces appear from demolitions, it is normal that the existing blocks have been transformed. Most of them have been transformed into squares or streets over time. However, it is worth mentioning the conventual city of Écija as a counterpoint to this usual practice. In the municipality, known as "city of towers" for its many conventual temples and parishes, there are no transformations towards squares or big avenues. This city is a very singular and striking case among the medium-sized cities of Andalusia. The Medium-sized cities are the main backbone of the Andalusian region. Unlike other communities in Spain, the potential here gives them an enviable system of their own and identity. In its definition there are multiple meanings related to the same. Among them, quantitative criteria can be highlighted, where a range between 20,000 and 50,000 inhabitants is established.[35] However, the identification of a city of average character and even more so in Andalusia, does not answer only numerical data. Its most accurate definition would pass through the institution of an urban entity, which on the way between large capitals and rural areas, constitutes a secondary center with a function serving a good number of smaller nuclei or similar category, although it lacks the infrastructures of a central or metropolitan area.[36]

Between this net of medium-sized cities stands out Écija as a conventual city. Its maximum convent exponent was a total of 21 monastic buildings, which

35. A. Rojas, "Las ciudades medias y la expansión territorial," in *La Ciudad Viva* (2009). Retrieved from: http://www.laciudadviva.org/blogs/?p=2895. [Accessed 20 April 2019], 2895.

36. B. Del Espino Hidalgo, *Las ciudades medias del centro de Andalucía. Análisis territorial y evaluación de su sostenibilidad* (Seville: Editorial Universidad de Sevilla, 2018), 31-36.

represented 11% of the urban area.[37] It is a city with very few public spaces in its historical center due to the large blocks and building occupation. Its opportunity could have come in the 19th century with the disentailments. In the city, it was a very important phenomenon because of the 21 buildings, 72% were affected by expropriations,[38] which brought new opportunities and perspectives to the city. As it happens in cities such as Seville or El Puerto de Santa Maria, Écija needed new squares and avenues. However, this never happened. Conventual spaces were always preoccupied with another building typology. When the convent was demolished and left a large surface area free, it was automatically occupied by new buildings, with mainly residential use (Figure 6).

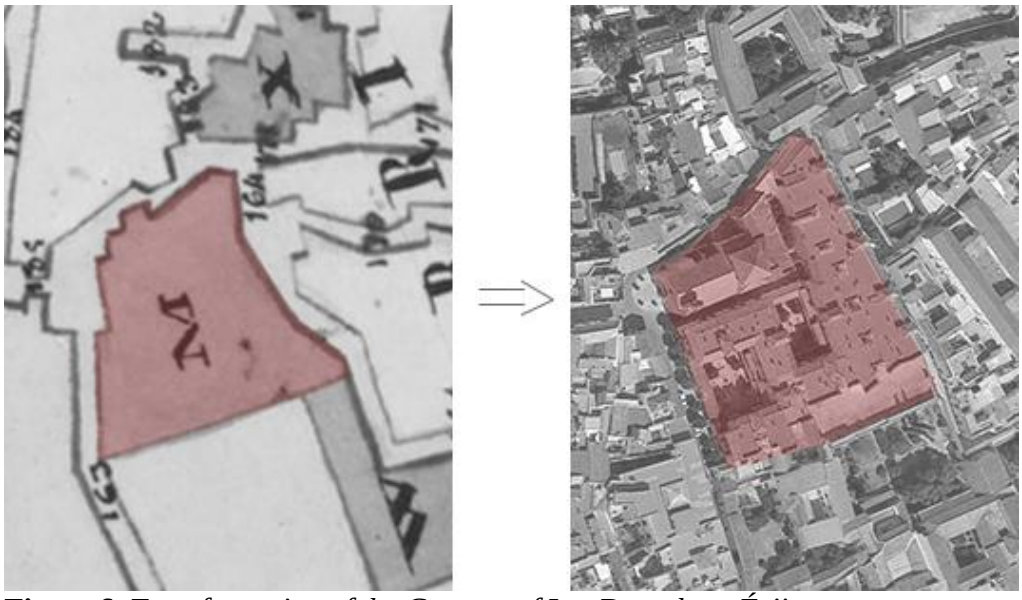

Figure 6. *Transformation of the Convent of Los Descalzos, Écija*
Source: (Left) Spínola Plan of 1826 from © Royal Academy of History, Spain (Right) Air Flight from National Geographic Institute of Spain, 2018.

The case of the convent of Los Descalzos led to the construction of residential blocks.[39] Another example is the use of changes in a convent plot is the monastic building of San Francisco. Next to the main square of the city, the plot was occupied after the demolition by a cinema and houses.[40] Like this convent, in Écija happened the same to all those who were disentailed and sold at public auction. Possible speculation of the newly available lands might prevail against their transformation into public use. The paradigm in Écija supposes the non-use of the conventual spaces for their transformation into public space, because in the 20th

37. F. J. Ostos Prieto, *La estructura conventual en Écija. Génesis, influencias, transformaciones y continuidades en ciudades medias*, Final Master Thesis (Seville: University of Seville, 2018), 29.

38. Ostos Prieto, A. Costa Rosado, J. M. Aladro Prieto and M. T. Pérez Cano, "Identity construction of the European medium sized city through the monasticism repercussions in Écija," in *IOP Conference Series: Materials Science and Engineering* 603, no. 022053 (2019): 8.

39. Ostos Prieto, *La estructura conventual en Écija. Génesis, influencias, transformaciones y continuidades en ciudades medias*, 2018, 143.

40. Ibid, 88-93.

century a new great avenue was built, the so-called "Miguel de Cervantes"[41] (Figure 7). It was one of the largest urban operations in the city that would connect the urban center with one of the main territorial communication routes. Curiously, in one of the high conventual cities with new transformations in the last centuries, the conventual spaces are always reoccupied with another building typology.

Figure 7. *Plan for the Construction of the Avenue "Miguel de Cervantes", Écija*
Source: Plan made by Francisco Torres, in 1881. Currently, it is saved in the Municipal Archive of Écija.

New Symbols in the City: The Contemporary Heritage

As a result of the transformations experienced after the disentailment processes, the cities were modernized. This would produce changes in their urbanism, so that other similar types of architecture would be generated. Just as the conventual phenomenon appeared during the Middle Ages as a response to the demands of the society of the time, financial architecture is born from these new events. The economy is gradually changing from being productive and international

41. J. Méndez Varo, *La avenida Miguel de Cervantes. La calle "Nueva". Cien años en la memoria, 1912-2012* (Écija: Asociación Amigos de Écija, 2012), 25-26.

to financial and global. The rise of new governmental, fiscal and international relations systems demand new buildings.[42] Banks and companies are beginning to form the basis of a new power that will seek to establish itself in cities.

Like the conventual spaces, once symbols of power, which sought to be located in the most important cities, the new financial power will act in the same way. It will seek a position in front of public spaces, squares and avenues in which they can be easily visible and recognizable. It is inevitable to find a bank or any other entity in the square or main road of each of the capitals and medium-sized cities of Andalusia. Today it is a social system on which the citizen depends. At first, the population went to the conventual centers with prayers and alms. Now they go to the same spaces only suppressing the convent and the prayers. It is interesting to see how the transformation of space serves to accommodate various representative powers in the city it occupies from the large scale to the small.

It should be noted that these buildings, constructed in the middle of the 20th century, are a new heritage, called contemporary heritage, which would be added to the older buildings. These buildings do not have widespread heritage recognition.[43] There are several handicaps that these buildings encounter to be recognized as a cultural legacy to be preserved: temporal proximity, a language without ornamentation or for having been built during the period of the Europe of totalitarian regimes.[44]

In this sense, and abundant to a greater extent in the mentioned Plaza Nueva in Seville (Figure 8), the financial power begins to become obvious. In its surroundings would appear the construction of the Bank of Spain building, redefining the image of the Plaza de San Francisco in its contact with the *Avenida de la Constitución*. This building was built at the beginning of the 20th century between 1918 and 1928 under the project of Antonio Illanes del Río.[45] It would be only the prelude to what would happen around the city's representative public spaces. Later years the banking power would build buildings erected as symbols of the power settled in the historic center of the city. These buildings could emerge once the openings of squares or avenues in the inherited plot advanced towards its consolidation.

But these buildings, which are now becoming contemporary heritage, are not only inserted on urban transformations of previous centuries or already consolidated sites. Heritage cities such as Seville would not cease to transform their historical fabric during the 20th century. Thus, in the Andalusian city, we can

42. O. Ugarteche Galarza, *Arquitectura financiera internacional. Una genealogía (1850-2015)* Colección Inter Pares (Madrid: Akal, 2015), 10-22.

43. D. Navas-Carrillo, "Más allá de la connotación franquista. Una reflexión sobre la patrimonialización de las barriadas promovidas por el Instituto Nacional de Viviendas," in *Revista PH. Boletín del Instituto Andaluz del Patrimonio Histórico* (Sevilla: Instituto Andaluz del Patrimonio Histórico, 2019), 246.

44. J. A. Rodríguez-Lora, "El patrimonio contemporáneo en la construcción de la memoria democrática. La arquitectura que pervivió a los cambios de régimen del siglo XX," In *Revista PH. Boletín del Instituto Andaluz del Patrimonio Histórico* (Sevilla: Instituto Andaluz del Patrimonio Histórico, 2019), 243.

45. Instituto Andaluz del Patrimonio Histórico, *Banco de España*. Guía Digital. Retrieved from: https://guiadigital.iaph.es/bien/inmueble/21900/sevilla/sevilla/banco-de-espana. [Accessed 4 May 2019].

find cases of openings such as *Calle Imagen* in the mid-20th century, or the current *Avenida de la Constitución* -which ends in Plaza Nueva- in the first third of the 20th century. This last intervention modifies the historical urban physiognomy and would mean the disappearance of some heritage buildings.[46] These great urban interventions could be considered as a similar entity to the opening of squares in the old city.

Other cases could be added to the Bank of Spain, such as the Central Bank - on *Avenida de la Constitución*, just next to the first one - built in 1952 and designed by Vicente Traver Tomás,[47] or the Bank of Bilbao in 1950 building, in this case, a facade towards *Plaza Nueva*, proposed by the architect José Galnares Sagastizábal.[48]

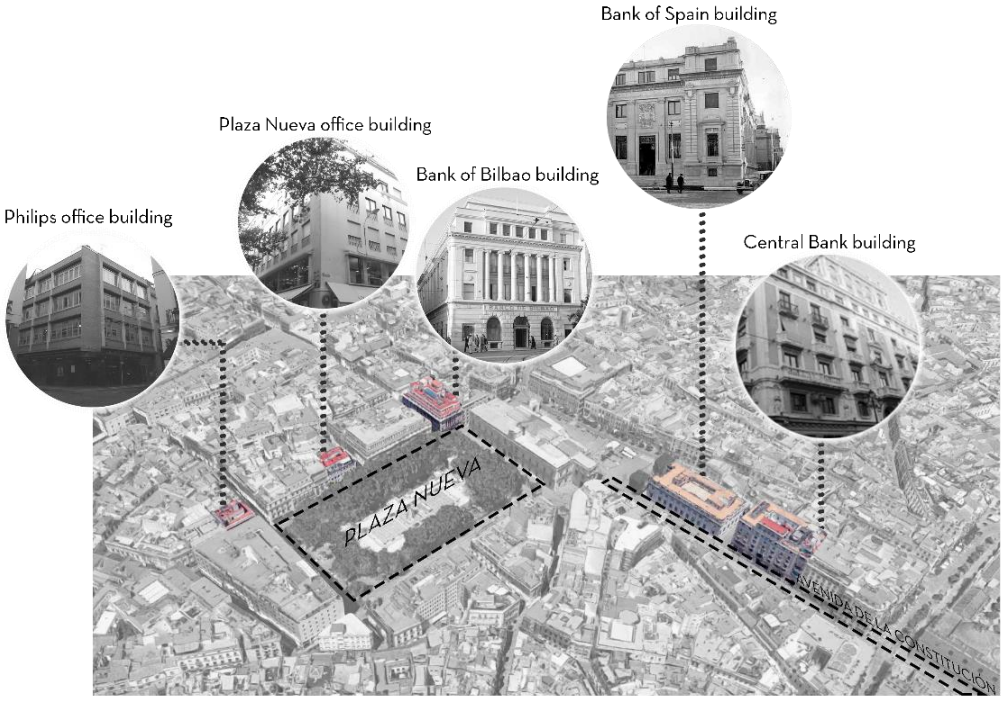

Figure 8. *Buildings in Plaza Nueva and Avenida de la Constitución (Seville)*
Source: Own elaboration with air flight from National Geographic Institute of Spain, 2018.

46. J. Tejido Jiménez, "La demolición a gran escala como técnica de intervención urbana. La apertura de la Avenida de la Constitución de Sevilla (1906-1927)" *Informes de la Construcción* 68, no. 541 (2016): e137.

47. V. Pérez Escolano, M. T. Pérez Cano, E. Mosquera Adell and J. R. Moreno Pérez, *50 años de arquitectura en Andalucía 1936-1986* (Sevilla: Consejería de Obras Públicas y Transportes, 1986), 283.

48. J. M. Aladro-Prieto, "Siglo XX: monumentalidad urbana y renovación arquitectónica," in *El Ayuntamiento y la Plaza Nueva de Sevilla* (Seville: Fundación Cajasol, 2018), 79-80.

Figure 9. *Philips Office Building in the Northwest Corner of Plaza Nueva (Seville)*
Source: Own elaboration.

Figure 10. *Philips Office Building in the Northwest Corner of Plaza Nueva (Seville)*
Source: Own elaboration.

The appearance of the financial power in this heritage field will propitiate in later stages the come of other buildings to become a tertiary zone. Against the historicist style existing in these buildings until the middle of the century, the new office buildings installed in the Plaza Nueva would choose a new language. This new one was closer to modernity dispensing with ornamentation and purifying the compositions of facades. Among other buildings accommodated on the ancient convent of San Francisco will highlight the Philips office building (Figure 9) by

Alfonso Toro Buiza in 1960[49] or the known as office building in Plaza Nueva (Figure 10) by Ricardo Abaurre y Herreros de Tejada and Luis Díaz del Río, built in 1961.[50] Both buildings are currently included in the Iberian DOCOMOMO[51] register, so they are erected as contemporary heritage elements that would come to add to so many others of a greater historical journey.

Conclusions

As a consequence of the evangelizing policy of the Church, the use of the monastic buildings created in Andalusia huge convent cities. The current city is the result of the urban construction generated by the convents and monasteries founded by religious orders; a phenomenon that has come to give them a true identity.

In the results of our research, we can notice that the replacement of the convent by new public spaces is a consequence of the need to generate new areas in the medieval urban area of cities. These facts took place mainly in those cities where the convent production has been greater and a high percentage of disentailed buildings existed. For this reason, Seville and Cordoba are clear examples of this urbanization process, which also takes place in the aforementioned city of El Puerto de Santa María.

As representative examples of these transformations, we have seen the cases of the Plaza Nueva in Seville or the Plaza de Isaac Peral, in El Puerto de Santa María. We have analyzed their evolution and transformation, in which their conversion from private to public spaces has allowed us to understand the heritage that conventual cities have transmitted us in the current urban planning. Nevertheless, being rigorous in our analysis of the average Andalusian convent cities, we wanted to point out that the substitution of the convent for the square has not always happened in all of them. That is why we have highlighted the city of Écija as a representative example of this situation. The convents disappeared and they were occupied quickly by other constructions, having Écija as an exceptional case.

The passing of the years means a change of power that materializes in the city. Religious power, represented by the convent buildings, disappears after the 19th century disentailments. A new power appeared in the city, the financial one. The new squares and avenues were the new scenario for the development of banks and offices. Exchanges and transformations took place from the convent to the square and financial buildings. The achievement of new spaces of opportunity in the city generated an architecture of the 19th and 20th centuries with a high architectural and heritage interest.

49. Instituto Andaluz del Patrimonio Histórico, *Edificio de Oficinas Philips*. Guía Digital. Retrieved from: https://guiadigital.iaph.es/bien/inmueble/21942. [Accessed 4 May 2019].

50. Aladro-Prieto, "Siglo XX: monumentalidad urbana y renovación arquitectónica," 2018, 80.

51. DOCOMOMO is the acronym for Documentation and Conservation of buildings, sites, and neighborhoods of the Modern Movement and is a non-profit organization initiated in 1988 in the Netherlands. Iberian DOCOMOMO is a subsidiary organization that focuses on the Iberian Peninsula (Spain and Portugal) (Foundation Iberian DOCOMOMO)

All this exchange produced in the urban plots superimposes layers of power materialized in buildings and spaces: convent, square and contemporary architecture. In this way, the current city is a witness of history and transfer of power, where the mixture of all these factors leaves an undeniable heritage trace.

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The Consolidation of a Practice: The Case of Packard Motor Car Factory in Detroit

By Pedro Belo Ravara[*]

This paper will discuss the impact of one of the first factory buildings as a functional and transitory paradigm in the modern era. The Proto-modern model I shall be referring to is the Packard Motor Car Company of Detroit, Michigan. It is still in remarkable running order and it is hoped that new use will be made of it.

Introduction

The History of Modern Architecture has focused on theoretical and historical matters by studying model or paradigmatic buildings which represent it in some way. Nevertheless, the theoretical and practical dimension has been side-stepped – not deliberately, perhaps - but owing to the particular academic training of the specialists. As a matter of fact, the tradition of teaching Fine Arts was based on singling out models as a way of sustaining theory and criticism, thus down-playing the pragmatic role social and economic conditioning factors affecting the practical outcomes, the "modus facienti", of people in the profession, such as builders or entrepreneurs.

Be that as it may, the relationship between practice and theory or modern-history theory is neither evident nor clear. The iconic models representing the history of architecture have always been very special cases that convey neither the "ordinariness" nor the anonymity of building practices, nor indeed, the outcomes which Hitchcock and Johnson, seconded by Alfred Barr, reckoned were the International Modern Style interpreting the revolutionary social spirit affecting the whole of Europe during the 1920s.[1]

The iconographic buildings of the Moderns living in the 1920s celebrated the individualistic traits of their architects. Owing to the fact that they were modern, and as such, were concerned with regulating architectural practices through their projects and buildings, they gained their autonomy as masters/authors by making a break with at least one of the three defining principles of the *International Style*. The principle of "regularity as against symmetry"[2] was denied by the extraordinary qualitative irregularity of their work as well as the unlikelihood of obtaining any sort of constructive standardization. The classical understanding of a mirrored or reflected symmetry was now replaced by a modern concept of symmetry in which translation and repetition acquired its own degrees of symmetry. Regularity thus allowed the construction system to be increased by simple repetition in translating

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1. See H. R. Hitchcock and P. Johnson, *The International Style* (New York and London: W. W., 1995).

2. Idem, 37.

a structural module. The building was now viewed as an architectural representation from beginning to end and from top to bottom, in this way refuting classical architectural representational values, which had already been held up for questioning throughout the 19th century.

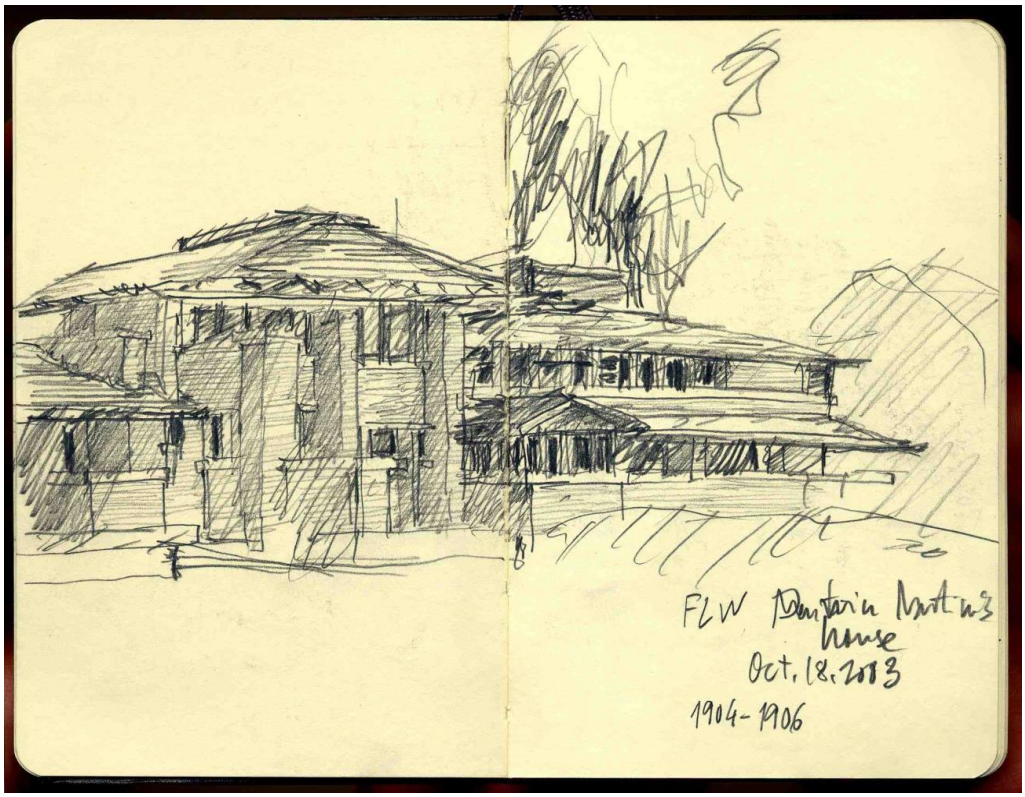

Figure 1. *Martin Darwin House, Frank Lloyd Wright*
Source: Drawing by the Author.

Buildings in the iconography of modern architecture thus tended to reject this compositional/constructive regularity. They were therefore buildings which stood out against what was the "regular" architectural currency of the day, at least the buildings which have been most commonly applauded. For example, it is arguable whether Frank Lloyd Wright's *Martin Darwin House*, 1904 (Figure 1), conforms to the other two principles put forward by Hitchcock and Johnson in 1932: "volume as against mass" and "absence or refusal of decoration."[3]

3. Idem, 37.

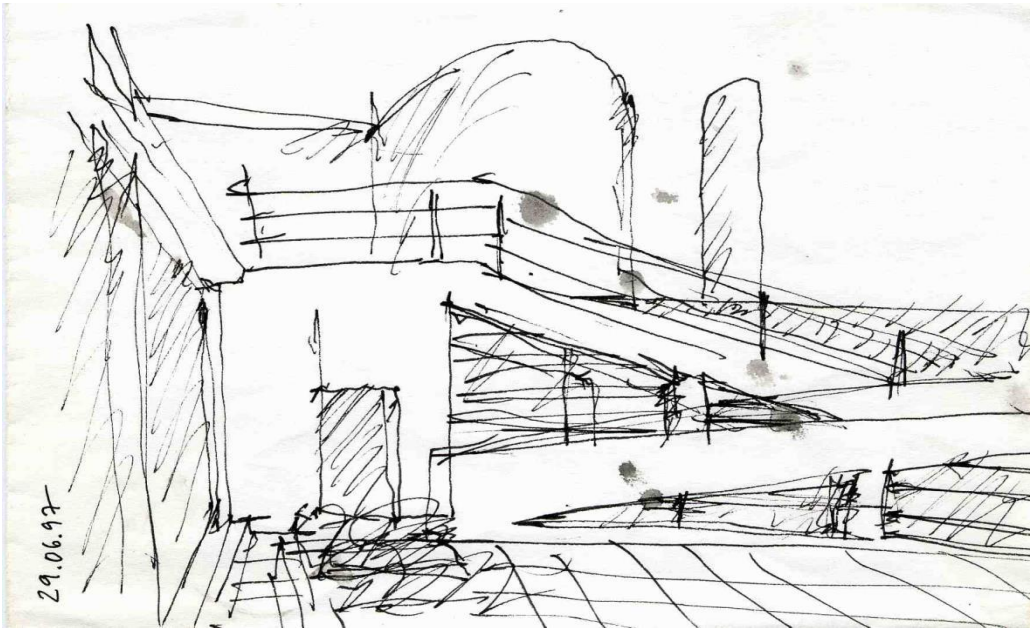

Figure 2. *Ville Savoie, Le Corbusier*
Source: Drawing by the Author.

Or could it be that *Ville Savoie*, built in 1929 (Figure 2), was the result of the designer's effort to really standardize building processes and practices, thus helping to readdress the social question about regular non-skilled manpower because democracy had opened the door to jobs-for-all?

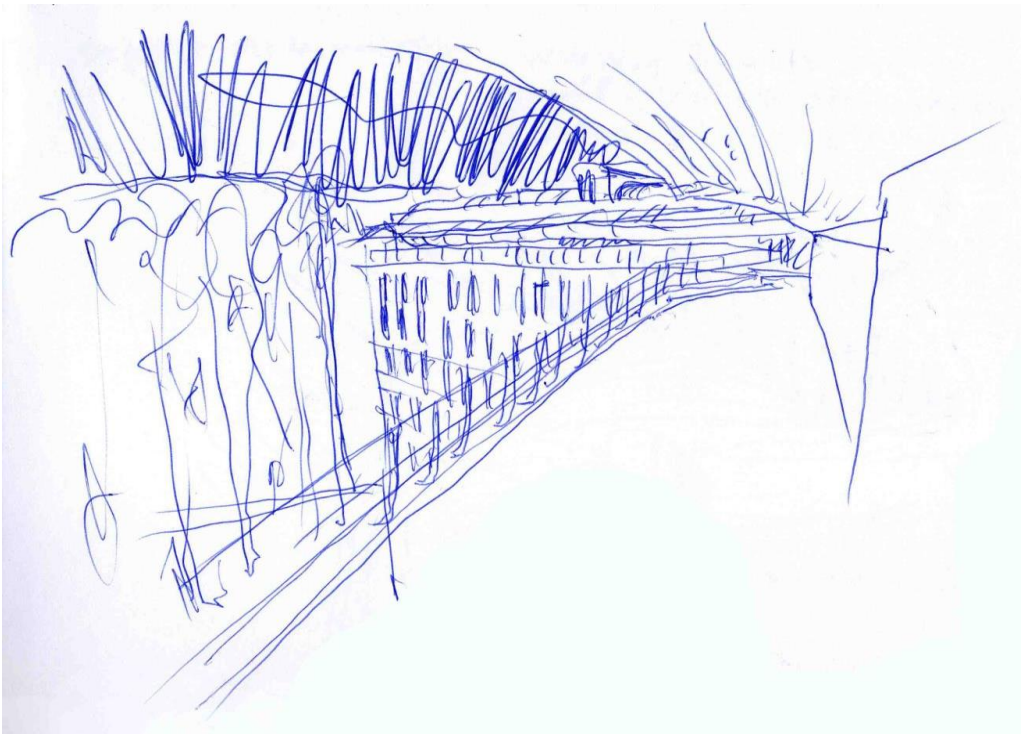

Figure 3. *Paimio Sanatorium, Alvar Aalto*
Source: Drawing by the Author.

Take the *Paimio* sanitarium, built in 1929-33 (Figure 3). The fact that it was built to integrate into and respect the surrounding landscape and environment takes on particular importance and is of unquestionable iconographical value on the drawing boards and blocks of students and architects in Northern Europe.

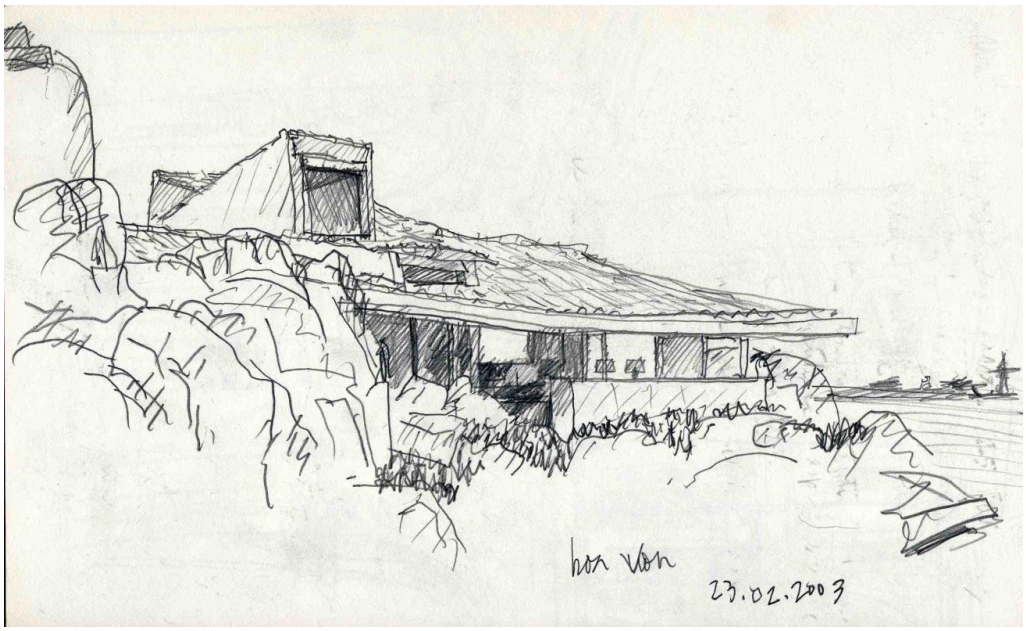

Figure 4. *Boa Nova Tea House, Siza Vieira*
Source: Drawing by the Author.

The teahouse in Matosinhos, designed and built between 1958 and 1963 (Figure 4), was designed by Álvaro Siza Vieira who went back to his Altean lessons as a way of closing the door in his work, on a modernism that was both critical and aware of the on-going conflict with his basic principles.

How may we clearly understand, therefore, the Modern Movement as an answer to the modern spirit that emanated from the social revolution in which jobs, the division and scientifically-qualified methods of management and production, the standardization and industrialization of products and landscapes under construction all made part of unstoppable processes that would decisively influence our cities and buildings? Probably we have to look back to the proto-modern "functionalist" models.

Car Factories as the "Functional" Proto-Modern Architectural Buldings

The question of functionality in architecture became a central issue in the Modern Movement and in defining modern life throughout the 20th century. Apart from spatial issues proper to the Modern Movement, such as a free plan and spatial fluidity functionality in architecture has also been understood through the simple essential expression of materials, building processes and the immediate need for space, light, insulation, etc. This architectural truth has to do with the idea of

function while constructive functionalities may be represented and understood in a pedagogical way.

Connected with the factory's activity and performance is the building process itself, its material and expressive qualities being the representative languages of the powerful, growing industrialization which modernized the USA. Added to these factors is the anonymous nature of the shapes and processes promising to populate the horizon, or the infinite, where methodological standardization, repetition, homogenization and regularity become *functional terms*.

Figure 5. *Concrete Central Silo, Buffalo, NY*

It is precisely with these models in mind that Gropius or Le Corbusier were to refer to building on a monumental scale. In his book, *Entwicklung der moderner industriebaukunst*, published in 1913, Gropius considered such buildings "pharaonic."[4] In 1923, Le Corbusier recognized the added value of using reinforced concrete material in them.[5] Contrary to what Le Corbusier suggested in *Vers une Architecture*,[6] these proto-modern buildings were not designed by engineers but by multidisciplinary teams where the architect coordinated various kinds of knowledge involved in the process of professional know-how (Figure 5). Similar to Gropius and Le Corbusier and many other so-called masters of the Modern Movement, these professionals did not have an academic training but only

4. W. Gropius, "The Development of Modern Industrial Architecture," in *Form and Function* (London: The Open University; 1975), 53-55.

5. See Le Corbusier, *Vers une Architecture* (Paris: Flammarion, 1995).

6. Idem, 29.

the practical experience gained in the studio or workshop as apprentices to architects/builders.

The advent of US protomodernity was the advent of the country's industrialization, where manufacturing as the basis of *inventing* American society was developed. It interpreted the functionalist spirit which Horatio Greenough wrote about in 1852 in a study called *Form and Function.*[7] The truthfulness of the material and the building itself, responded directly to the functionalist architectural vision pictured by Horatio Greenough as being the future building expression particular to the USA.[8]

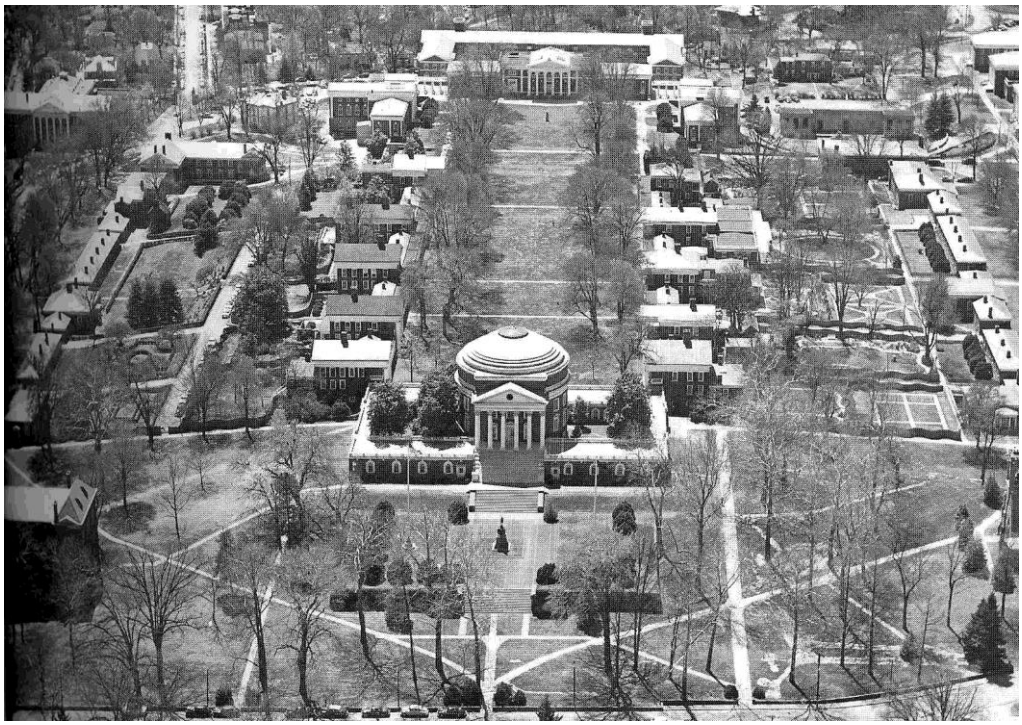

Figure 6. *University of Virginia, Charllote Ville*

Upon settling in virgin territory in the USA, a new organizational order was made possible. It was open to the territory itself, establishing its outmost boundary on the infinite, on the horizon, wiping the slate clean at the point of departure and moving (in topical and not utopian fashion) towards a new urban order (Figure 6).

7. See H. Greenough, *Form and Function* (Berkeley and Los Angeles: University of California Press, 1947).

8. Idem, 51-58.

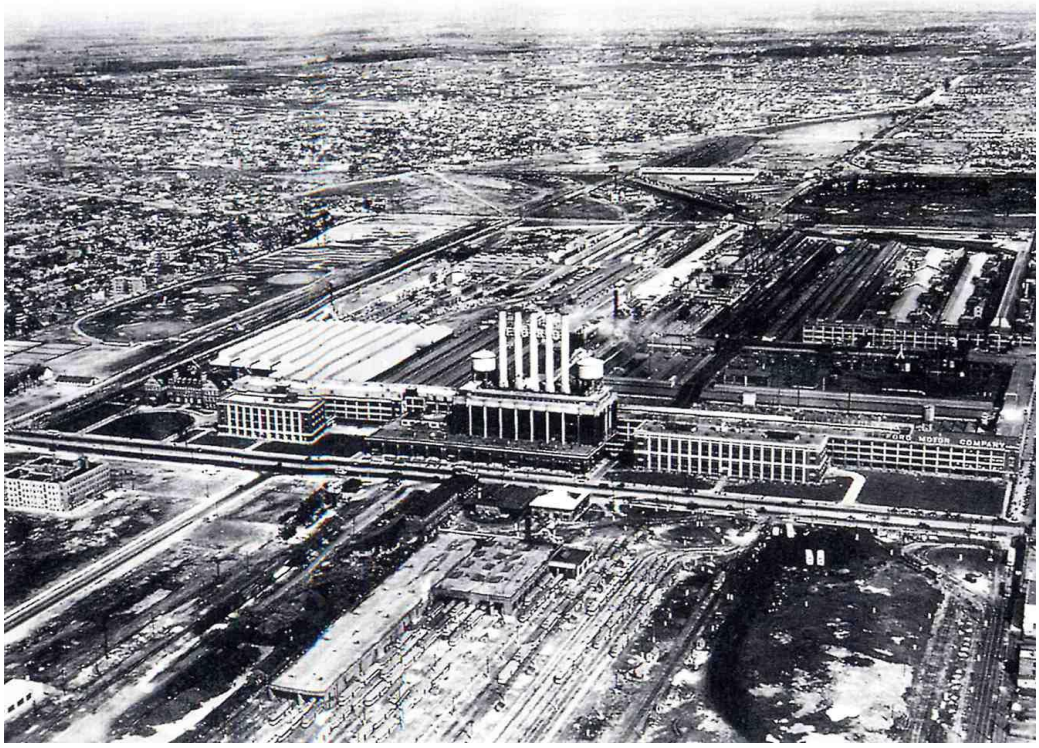

Figure 7. *Highland Park, Ford Industries, Detroit*

The *ideal factory* building in reinforced concrete took on this same peculiarity in the rule of limitless growth (Figure 7).

As such, it became the standard principle of design and building which gave it license to grow physically larger. The architect designing the factory building understood the factory in the light of its flexibility, growth, adaptability, functionality, economy and rationality.

Figure 8. *River Rouge Ford Compound, Detroit*

These notions were held dear in the modernist manifestos by the European vanguards. They were concepts formalizing the architectural models chosen by men such as Siegfried Giedion or Henry Russel-Hitchcock, although in the American's case, there was the pragmatic need to provide the new territory with the infrastructures heralding progress and the urgent build-up of a fully industrialized nation (Figure 8). Turning the USA into an industrialized country was a nation-wide aim seeking to organize society transversally and reach the American Dream on which the whole working-class structure was based.

The reinforced concrete factory became a protomodern architectural representation of this kind of society, not only in the way the building was organized and operated, but also in the explicit architectural choices underpinning its sections and/or divisions. The factory size and its multiple modules were celebrations of a certain formal anonymity which molded the entire country by means of a dimensional rule.

The Packard

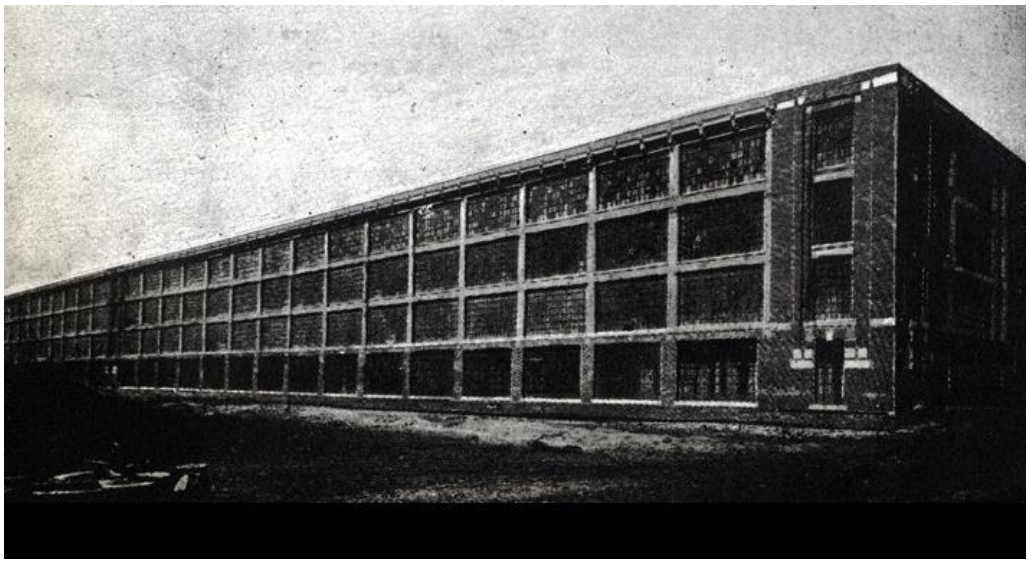

Figure 9. *Highland Park Factory building, in Vers une Architecture, 1923, Le Corbusier*

The architect made part and parcel of this expanding, producing enterprise that was as unrestricted in size as the prairie, although subject to the corporative structure of the industrial era. In this sense, architecture was one of the parts that fitted into gear. And if we are referring to the gear, it is because this idea portrays the notion of a special component of the machine working together with all the other parts to make it move. Moreover, any gear may be improved and redesigned so as to enhance the binary operational/performance aspects of the whole by the sum of its parts. The architect is only one of the parts that puts into practice the project organizing the physical, systemic environment of the factory. The ideal factory in reinforced concrete is in itself emblematic of the serial evolution in

factory design. It is therefore a model which is open to change although closed to formal or intentional idiosyncrasies.

The Packard Motor Car Company factory in Detroit is, in itself, the distillation of Hitchcock and Johnson's theories despite the fact that it was built twenty years earlier. It bears none of the exceptions consistently introduced into buildings/ monuments that later made their way into the pages of modern architectural compendia. As a matter of fact, protomodernity represents the pure state of modernity by establishing a direct link between practice and the final result without leaving any trace of resistance in the global endeavor to regulate the working world.

Figure 10. *Packard Motor Cars Factory building, in Vers une Architecture, 1923, Le Corbusier*

The new kind of program which the factory embodied gained enormous importance and significance in the first twenty years of the 20th century in the USA. Due to its impressive size, it helped to define a new typology particularly in the heavy industrial complexes. It excited the admiration and "symbolic fascination" of some of the forerunners to the Modern Movement. For Behrens and Gropius, however, US factory models meant "aesthetic models" according to which architects had to undertake their work using the "traditional artistic disguise" that was characteristic of European architecture, in order to consciously "interpret the spirit of an age."[9]

Perhaps this is where the European masters, including Le Corbusier (Figures 9 and 10), made their mistake. They only took into account the metric scale of something that was much more complicated and that, professionally speaking, "put aside traditional aesthetic concerns" in order to focus on a new type of building by exclusively studying its practicability and its "operational and economic needs."[10] This position gave rise to new models giving new organizational solutions that always had to do with innovating urban occupations and situations.

Drawing up the plans of over 2,000 factories during his career,[11] Albert Kahn worked at a time in which the machine exerted the greatest impact on daily life in all its history. He saw the advent of the motor car, the airplane, the lifting devices

9. G. Hildebrand, *Designing for Industry, The Architecture of Albert Kahn* (Cambridge, Massachusetts: The MIT Press, 1974), 2.

10. Idem.

11. Idem.

in high-rise buildings and the urban elevator, and he noted the way in which they made part of modern 20th century life. Kahn not only witnessed, through his professional and civil life, but actively took part in the modernization movement. He was highly pragmatic and despite the fact that he had little formal and theoretical education in the field of architecture and in the arts as a whole, Kahn became interested in working out a new type of building by making a combination of "program, structure and economy", relegating aesthetics and composition to the sphere of formalist or symbolic rules.

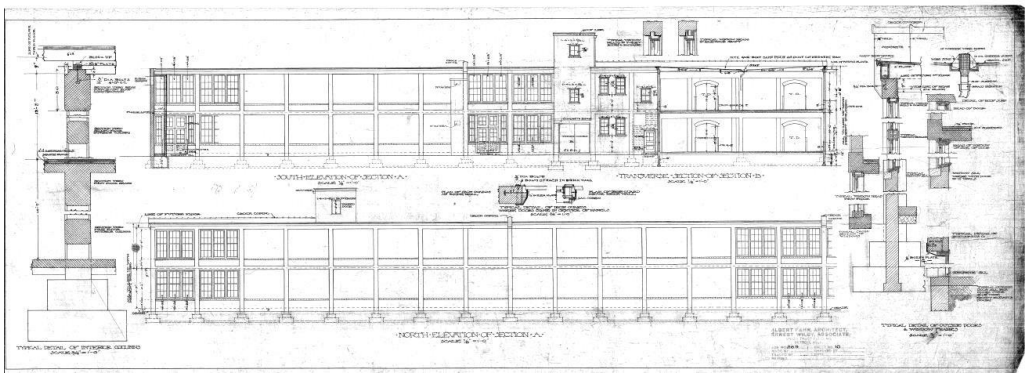

Figure 11. *Technical Drawings for Packard Motor Car Factory, in Bentley Historical Library, University of Michigan, Anne Arbor*

In this way, his "factual performance" was formalized into a building solution.[12] Upon recognizing that his cultural pragmatism was devoid of erudite or traditional culture, Kahn sought the service of experts working in areas outside architecture and very often, outside the building industry. Factory buildings offered new types challenges due their operational complexities and new integrated systems demanding specialized engineering. These new building sciences became integrated into architecture thereby playing their part in forming much needed pluridisciplinary teams capable of coming up with new kinds of programs.[13] They also responded directly to questions about safety and comfort at work, structural robustness and durability, malleable and flexible functional solutions as well as the inclusion of mechanical, hydraulic and electrical systems in buildings.

In 1902, Kahn was introduced to Henry B. Joy, the managing director of the Packard Motor Car Company's new Detroit-based factory. The Packard industrial complex underwent various stages of significant growth until about 1913. Although the factory continued to grow after this date, it did so based on models that had been put to the test in previous stages of growth. The first factory was built between 1903 and 1905 according to traditional masonry constructions in brick with wooden floors.

12. Idem, 3.
13. Idem, 2.

In 1905, Albert Kahn designed building number 10 (Figure 11) together with his brother, Julius, who was working on his new reinforced concrete system, and constructed the first reinforced-concrete building in Greater Detroit.[14]

The need to reduce fire hazards and increase the span between the pillars, were reasons enough for the Kahn brothers to choose reinforced concrete for building the rest of the factory units in the complex.[15]

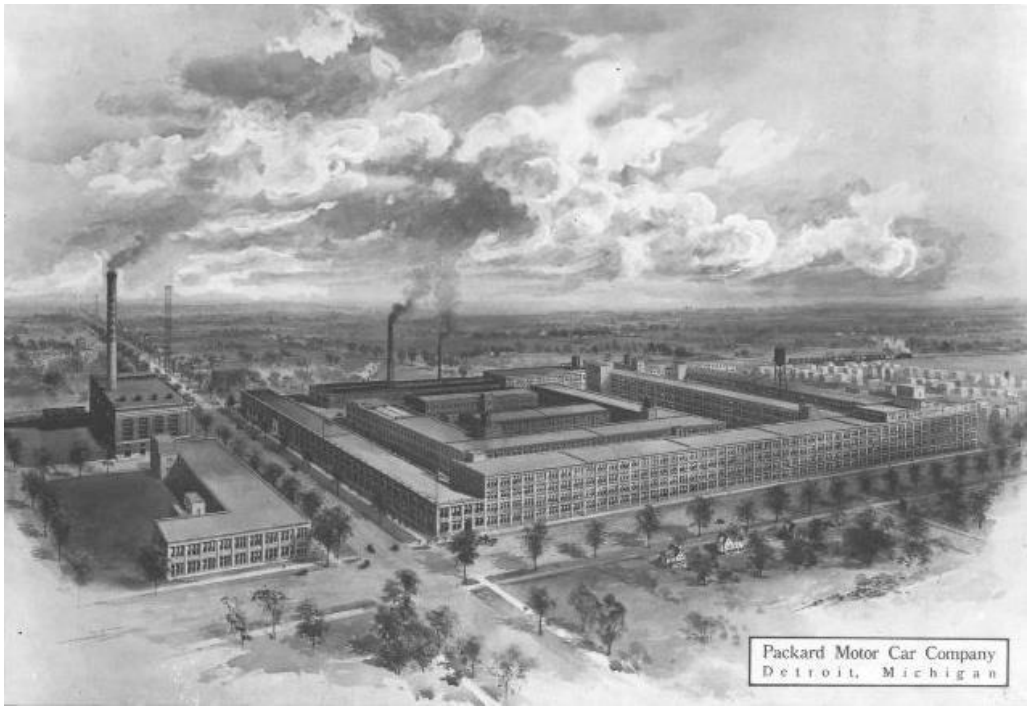

Figure 12. *Packard Motors Car Company, circa 1910 in The American Architect and Buiding News, Vol XCIX June 14; New York: Hearst Magazines, Inc.*

Reinforced concrete had another advantage in that it offered enormous possibilities in arranging and rearranging different kinds of layouts as well as extending work space, hitherto cluttered with metallic pillars about 3m apart, by lengthening the span between the pillars to about 9m.[16]

The 1910 building campaign (Figure 12) in which new factory units and two extra floors were added to some of the existing office blocks, saw the definite replacement of the traditional brick or stone masonry with reinforced concrete. It was around this time that the power-house located south of the Grand Boulevard was also extended. There was further building work carried out on the factory until it finally closed down in 1956.

14. W. H. Ferry, *The Legacy of Albert Kahn* (Detroit: Wayne State University Press, 1987); Hildebrand, *Grand, Designing for Industry, The Architecture of Albert Kahn*, 1974, 28.

15. Ferry, *The Legacy of Albert Kahn*, 1987, 11.

16. F. Bucci, F. and A. Kahn, *Architect of Ford* (trans.) Carmen DiCinque (New York: Princeton Architectural Press, 2001), 31.

Figure 13. *Packard Motor Car Company Factory, Rending Dated from 1913*

Building experience at this time showed that the three basic demands of a modern factory were that it should be run economically, be free of combustible material and be well-lit, as well as have everything connected to as efficient a ventilation system as possible.[17] Satisfying such demands would be as important to the factory managers and directors as it would be to its workers. Writing at the time, Charles Moore made a study of a factory suitable for the automobile industry, and more in particular of the Packard factory where he was the production manager. If a model could be drawn up for manufacturing buildings – and in this case, for manufacturing automobiles – it would have to follow criteria based on the proximity and arrangement of the various parts and sections which, in turn, would need to obey the proximity between the sub-functions. To do this, Moore explained, it would be convenient to group several buildings and/or parts of the factory around a common warehouse. Therefore, around this central warehouse would be the various manufacturing sections of the factory while located behind them, would be the assembly plants where the manufactured object was put together.

This model would thus allow parts and materials to be moved between sections along the shortest possible route, thus facilitating communication among the different parts of the factory. The product would also be dispatched more efficiently because finished automobiles would leave the factory complex by way of the outer buildings.[18]

The Packard factory was organized into independent production modules (Figure 13). In each module, the heaviest materials were stored and brought into the building at ground-floor level. Car assembly worked as from the first floor and went up through the floors until reaching the top-floor where the automobiles were taken outside on goods-elevators. Each building housed the entire assembly process and after the whole factory complex had been given two extra floors,

17. C. J. Moore, "Some Essentials of the Modern Manufacturing Building: with Special Reference to the Packard Motor Car Company's Plant at Detroit," In *The American Architect and Building News* XCIX June 14 (New York: Hearst Magazines, Inc, 1911), 219.

18. Idem, 219-220.

specialized automobile assembly was then carried out in them. We may speculate about whether the chassis was assembled to the motor on the ground floor, car interiors assembled on the floors above, the remaining parts of the car bodywork assembled on the third floor and finally, on the fourth floor, painting and car fixtures. After adding the two extra floors, it was likely that specialized activity was pursued and this is what Kahn would have been exploring mainly after he joined Henry Ford and built the Ford Motor Company factories.

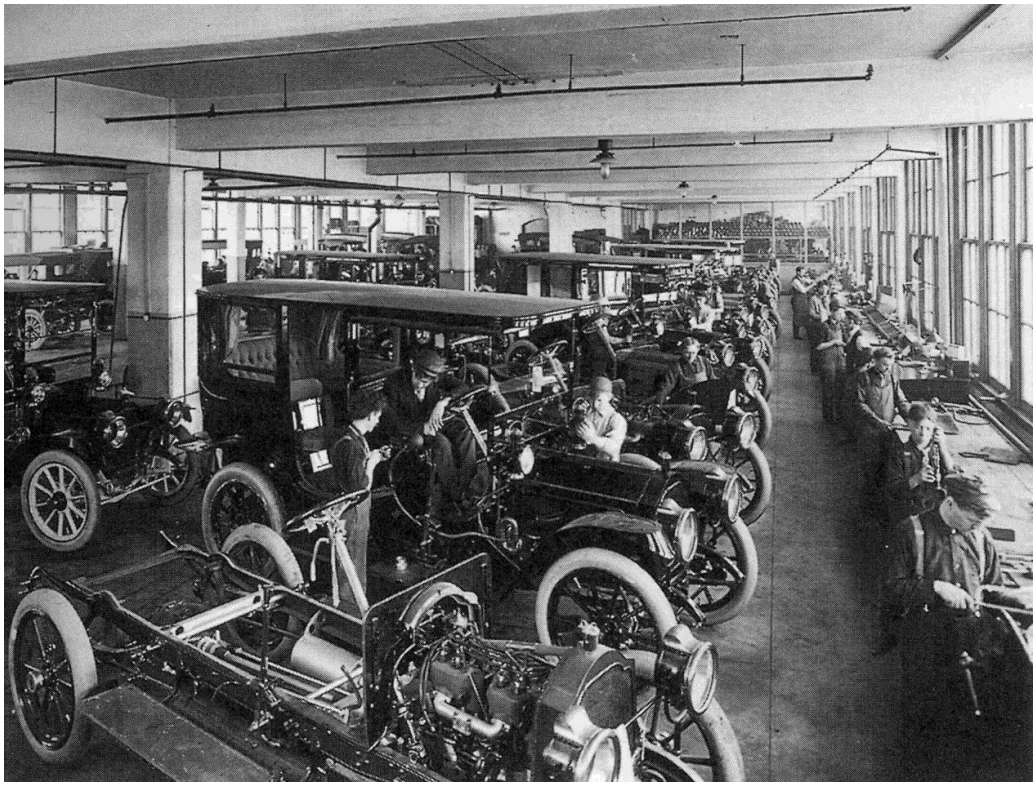

Figure 14. *Interior View of the Car Shop, Image in the Albert Kahn Associates Detroit Office Archives*

Nevertheless, at the Packard factory, the assembly buildings predominated because they were complete production units in themselves and each building produced as many finished automobiles as this full-cycle assembly method yielded (Figure 14). The system was geared to producing top quality or luxury automobiles in series, as Packard vehicles were, contrary to Ford's Model T aimed at all Americans and going into production in its new factory in Highland Park. At Packard's, the more assembly buildings there were, the more car production there was, because each building was supplied by the workshops backing up manufacture; each plant was totally independent in terms of production, thus assuring quality assembly and maximum production per unit. The spiraling growth of the original building center located to the north of the Grand Boulevard, was similarly based on the incremental growth witnessed in the southern section where there were many more new buildings being added on the original structures owing to the type of growth and expansion in progress. Buildings to the south revealed

the principle of incremental growth much more clearly. Each of the bits added on was completely independent not only from the operational point of view, as the buildings in the northern part were, but also from the formal and organizational point of view of the buildings as a whole.

The functional connection through the top of the buildings in the north was temporarily abandoned by simply relocating the production plant in a module that had been added on. Probably encouraged by Frederick Taylor's theories, this new module resembled a model of growth directly connecting architecture and growth phenomena, based as it was on adding more buildings to full-cycle production plants. This kind of development model was to be drastically changed when Kahn designed the Highland Park building in which Henry Ford's assembly lines revolutionized factory modes of organization. In all appearances it seemed a return to the model of growth linking the tops of buildings, although in this case running factors were clearly connected to the growth of assembly-line manufacturing.

Mention should also be made about the railroad branching off from Michigan Central as it brought with it nation-wide connections. The railroad ran alongside the factory complex and was used to send the automobiles to other areas in the USA as well as ensure the connection with the Forge Shop and the truck-manufacturing plant situated to the north of the automobile plant. The organizational model of the factory at this stage did not wholly depend upon horizontal connection, as it did in later factories, so the railroad only had relative importance here.

All these building or parts of buildings were made of reinforced concrete. There were walls and fire- proof doors between each production plant. The doors were periodically inspected to test their working order and resistance in the event of fire.[19] When designing and planning the factory complex, every attention was paid to the position of these protective devices, curettes, equipment and machinery together with the ventilation and extraction systems that were essential for the smooth running of the plants. An entire reinforced-concrete factory building demanded that such systems and equipment had to be carefully studied right from the very beginning of the project owing to the building's contained shape and difficulties in correcting structural errors later on.[20]

Nevertheless, the fact that a structure in reinforced concrete (Figure 15) tended to offer flexibility in usage consequently affecting its formal organization, was such that in this complex – despite the fact that certain sections had to bear different weights as for instance, the warehouse supplying the manufacturing and assembly plants where even if the weight was lighter, the vibrations in these plants caused considerable stress on the structure – this kind of building was chosen precisely because it could be made to adapt to all the specific requirements of each section or plant.[21]

19. Idem, 220.
20. Idem.
21. Idem.

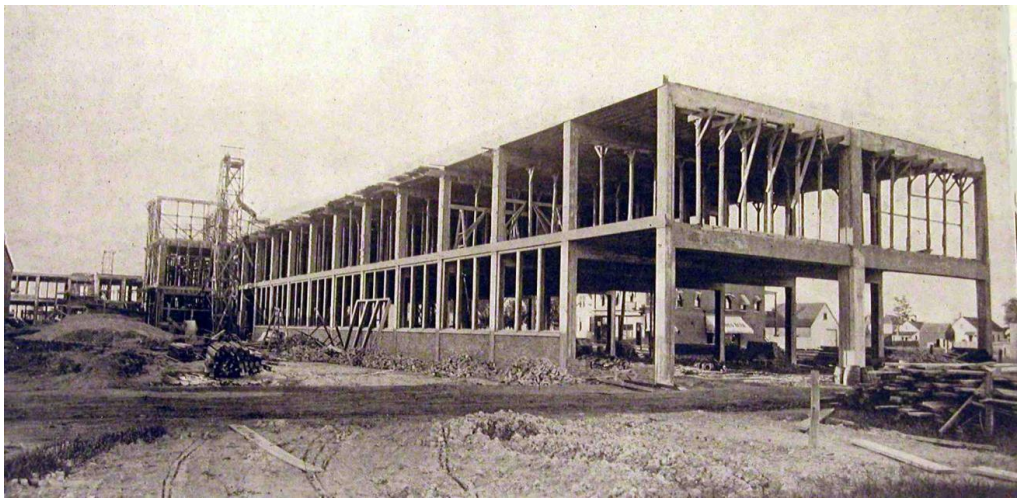

Figure 15. *Packard Motor Car Company Factory Building no 11, The Atlas Portland Cement Company, Reinforced Concrete in Factory Construction; New York, 1907, 144*

This being the case, the larger spaces were reserved for areas that needed more light and less weight; more vertical piers were put in stock or warehouse buildings; there were different kinds of floor paving which could be in cement, or in wood if it was in the daily work place; more attention was paid to noise levels, etc. All these measures were applied in Packard's factory although, in some cases they were considered to be finishing touches and incidental wooden fixtures (e.g. some of the wooden floors), so that over time, they tended to be phased out due to safety measures and protection against fire hazards.

Packard's was completely outfitted with electricity where the wiring was apparent, running through beams where necessary and going along the floor boards so as not to interfere with daily factory routines.[22] There was also a ventilation and heating system where tubes and conduits ran along the outer walls of the building, reaching all floors. The equipment needing extraction or forced air were located on the lowest floor.[23] Although it was usual to have a central block reserved for lockers and washrooms accommodating all the workers in the factory, Packard chose to build small sanitary blocks in each work place to ensure better hygiene and allow the worker to change into his street clothes before leaving the job.[24]

Under the factory complex, were the engineering vaults where the steam and water pipes and wiring for all the buildings composing the different sections of the factory ran to the powerhouse.[25]

This arrangement not only ensured the smooth running and link up between all parts of the factory, which meant economizing on the daily running costs in the car manufacturing process, but it also meant a significant improvement in the

22. Idem, 221.
23. Idem.
24. Idem.
25. Idem.

environmental quality of the work place, and as such, played an important role in the workers' mental health.

Figure 16. *Packard Motor Car Company Building no 10, Image in the Albert Kahn Associates Detroit Office Archives*

Building number 10 (Figure 16) has normally been referred to as a cornerstone in the history of reinforced concrete in the USA as well as in the rest of the world, due to the fact that it used reinforced concrete as a building method and knew the value of concrete. In fact, the novelty of Building No. 10 may be summarized in its material nature and construction that were open to technical and stylistic innovations introduced in this particular field of architectural history.

Nonetheless, Kahn's contribution in these projects, together with Building numbers 1 to 9 in traditional masonry and wood, helped to contextualize the value of architecture in a new way when it came to dealing with industrial production. The several kinds of factories in the industrial site represented ways of organizing activity undergoing constant change as it kept abreast of the progress industrial technology was making which, in turn, affected organizational modes. The factories had multiple flexibility: they were added on to vertically and horizontally or parts of them were demolished and rehabilitated. As a whole, the value of the factory was limited to the duration of production so that when production stopped or changed, the building could be demolished, replaced or altered. These structures were not meant to last forever, unlike the architecture of the past. One of the key factors for the successful growth and possible redesigning of the Packard factory building complex, lay in its structural modules that allowed for flexibility in the organizational composition of the modules.

The program was like playing a game based on spatial needs according to the roles the different activities had in the manufacturing process in abstract terms. In other words, if they had no occupation or were not integrated into a precise functional scheme, the modules failed to exist in themselves. When the scheme changed, the layout also changed in the way it accommodated the new mode of functioning.

Bucci referred to this building as the first to conjugate its entrails with its outer skin.[26] Harmonizing this conjugation was an inherent concern in all the utilitarian projects Kahn was to subsequently draw up, mainly for factory buildings. In spite of his departure point with Packard No. 10, he improved and changed quite markedly throughout his architectural career that lasted more than 40 years. The first daylight factory appeared in all its "shamelessly naked purity."[27]

But it is this "null value condition, the zero term of architecture"[28] that places this building twenty years ahead of its time as far as the progressive values of the architecture of the Modern Movement go - values that were patent in the MoMA Exhibition of 1932.

Conclusions

The importance of Packard factory numbers 10, 11 and 12 resides not only in the truthfulness of the material and the building system as a new functional language in architecture, but in its ability to adapt and grow due to the regularity of its bays spanning the spaces between pillars and structural systems. The pragmatic attitude used by Kahn's office when designing Packard's factories allowed architecture to be approached from a scientific, objective angle. Making architecture more objective became an important, systematic way of working when Kahn's office drew up projects. Slight changes were introduced with the idea of enhancing the future factory's performance and its layout was constantly being reevaluated. It was essential to turn this incremental, pragmatic and empirical knowledge into practical know-how and by doing so, Kahn gained recognition as an architect specializing in building factories or industrial structures. It gave him the sort of experience needed to trace out his eventual future success amid the industrialists who were the final promoters of industrial architecture.

Finally, we need to mention the incorporation of infra-structures into reinforced concrete structures. Security systems, heating and electrical installations were incorporated into the building by means of drawing up particularities in the project. What may seem banal today, meant a true revolution in architectural practices at that time. The architect was no longer the enlightened author in charge of all the building steps; he now had to coordinate his work with other specialists and other kinds of knowledge that were located outside the sphere of architecture.

26. Bucci and Kahn, *Architect of Ford*, 2001, 31.

27. R. A. Banham, *Concrete Atlantis: U.S. Industrial Building and European Modern Architecture 1900-1925* (London: The MIT Press, 1986), 84.

28. Idem, 86.

If, in a certain way, a clear separation of the fields of knowledge and building skills was implied with the structure, then with all the new technological phenomena that had to be integrated into the building for the sake of its safety, comfort, workability and performance, the building had to comply with Taylor's theories finally published in 1911, and stating that maximum prosperity placed at the worker's disposal generated the worker's maximum efficiency.[29] Prosperity was understood to mean prosperous working conditions, or rather healthy working conditions (that were well-lit, clean, ventilated, heated and safe) with decent pay (Figure 17).

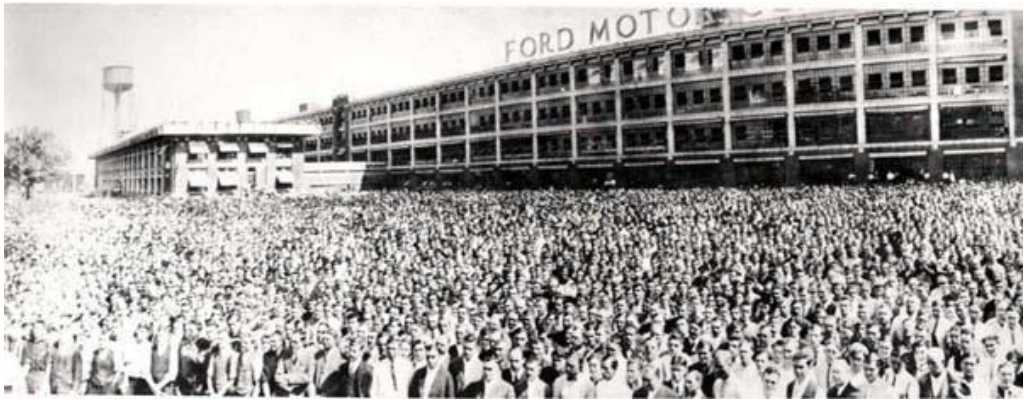

Figure 17. *Highland Park Factory Building, Launching Day for the 5US$ Campaign, Detroit*

The specific importance of the *Packard Motor Car Company* lies precisely in the historical lesson it teaches about current practice exerted on modern architecture. The Protomodern here is shown to be a model of the Modern, while the Modern following it consisted of possible variations on the qualitative regularity of a building, so as to make it unusual. But the series, the regular building, the anonymous work and its territorial setting should be understood in the same way that the Mannerists knew more about the Renaissance treaties than their predecessors, thus making them better equipped to criticize them and reinvent their characteristics in architecture.

29. F. W. Taylor, *The Principles of Scientific Management* (Mineola, New York: Dover Publications, Inc, 1911), 1.

Figure 18. *Packard Motor Car Company Factory Present State*

The Packard factory finds itself suspended in time, a ruin standing over a large suburban tract (Figure 18), although it has been preserved and may yet be integrated into the somewhat rarefied urban tissue on the outskirts of Detroit. There are few industrial complexes dating from the first ten years of the 20th century that show the structural and functional plenitude as is shown by the Packard factory. In the same way, there are even fewer buildings which, in themselves, express the functionalist notion that changed the way of building and understanding architecture with the Modern Movement.

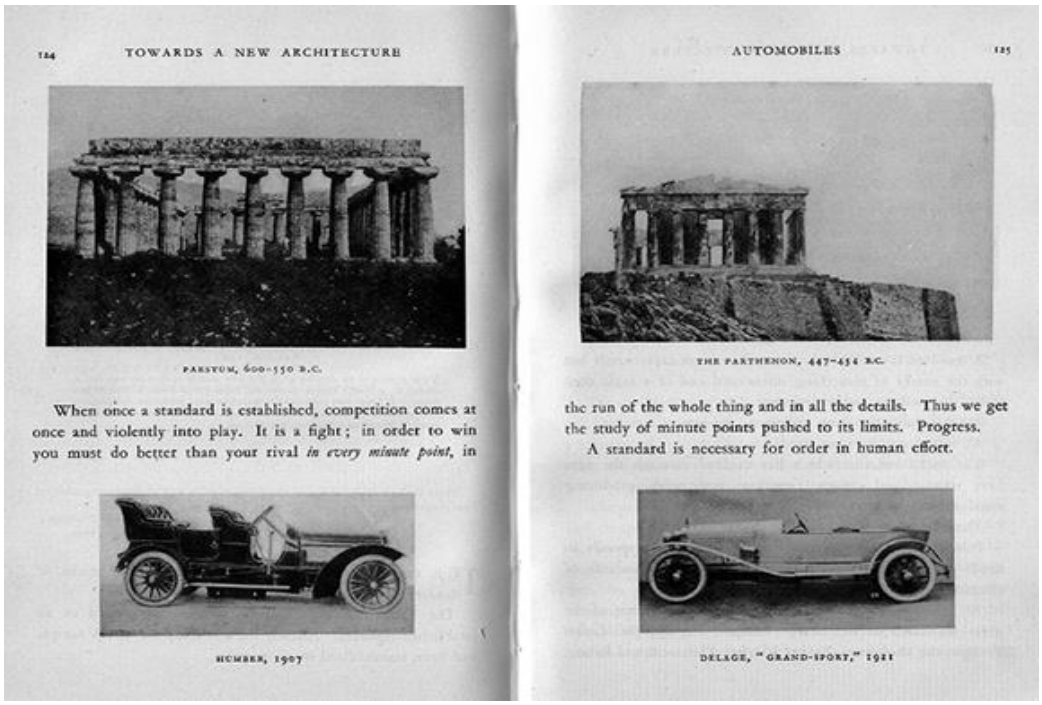

Figure 19. *Parthenon and the Modern Automobile, in Vers une Architecture, Le Corbusier, 1923*

The Packard stands for the History of Modern XX Century Architecture as the Partenon stands for all Classic Architectonic Culture (Figure 19).

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Experimentation in Architecture: Pavilion Design

By Gonca Tuncbilek[*]

Since the Great Exhibition in London in 1851, the field of exhibition design has become an inevitable impact on both architectural practice and discourse. Any exhibition design offers 'new' architectural problem-solving techniques, and this experimental process generates a direction to apply new architectural methods, new materials, and new concepts. This process leads to searching, experiencing, and opening up new possibilities without the constraints of the established rules. Thus, architects can experience what the future holds for spatial design. Architectural design enriches through experimenting with new approaches and new materials. This paper suggests that architectural experimentation can be provided in terms of Serpentine Gallery Pavilions as well as challenging the architect's role in re-establishing the conventional architectural thought. Thus, the architect is searching for new architectural possibilities and exploring the limitations of interpretation. Pavilion design can be considered as an architectural phenomenon in the light of this experiment to expose something 'new' and also in an innovative manner. Not only does the pavilion layout influence on its setting, but it also has the ability to redefine contemporary architecture, discourse, and practice. The pavilion's very limited nature requires the architect to design a clear-cut expression, develop a simple concept, and to find different methodologies or/and solutions for the 'temporality' of architecture. This experimentation not only has an impact on architectural practice and discourse but also leads to comment on and critique new possibilities in the field of architecture. Architects gain the freedom to experience the 'new' architecture through this experimental process.

Introduction

In Nikolaus Pevsner's Dictionary, 'pavilion' is defined, in its general terms, as a 'lightly constructed, ornamental building, often used as a pleasure-house or summer house in a garden and also as a projecting subdivision of some larger building.'[1] In addition, as stated in the dictionary, the pavilions are designed as single-bodied buildings located within the park or garden of a larger edifice. They are intended as light constructions that can be quickly erected and dismantled to be re-constructed in different times and locations. It serves as a pleasure-house that indicates the function of these structures. These temporary structures reflect certain common characteristics, such as flexible use, standardization of architectural elements, ease of transport, quick/easy/rapid construction, and dismantling. They are nomadic by their very nature, so there is no trace left behind when they are gone. Their transient nature suggests that they can be used for a variety of short-

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1. J. Fleming, H. Honour and N. Pevsner, *Dictionary of Architecture and Landscape Architecture* (England: Penguin Books, 1999), 427.

term functions. They can be used as an extension of some larger buildings to serve to minimalist functions.

The definition of the term 'temporality' relates mainly to the lifespan of the architecture structure, which is relatively short in the case of pavilions. Moisés Puente claims that the temporary structures have died young and that their temporary existence does not permit the passage of years.[2] Although the short lifespan of temporary architecture is inherently negative, there are compelling advantages that transcend their period of existence, their impact can be long-lasting, creating a memory of architectural practice, projecting the power of focus, perception, construction, and their inevitable destruction forms a part of their relevance. Moreover, the power of the pavilion's experience gives importance to its evaluation and effect, as well as its meanings, and thus diminishes the relevance of its temporary nature.

As a representation of the temporary architecture, the design of the pavilions can be interpreted as an appropriate medium for experimenting, investigating the borders/boundaries of architecture, testing grounds, exploring new architectural concepts, methods, and materials without the limitations of the established functions and their economics. In the light of this statement, this paper analyzes the Serpentine Gallery Pavilion designs to understand the possibilities of the transitory nature in architectural domain.

These temporary structures differ in several ways from conventional architectural practices. They are transitory since their period of existence is scheduled from the very beginning; they can be built, constructed, and dismantled quite quickly. Furthermore, the architects themselves can build these kinds of structures. Besides, they are usually inexpensive, relatively smaller, and lighter than permanent structures of a similar nature. In brief, they are appropriate for investigating the boundaries of architecture in a reduced manner.[3] Architects can re-examine and explore the construction methods, the budgetary requirements, and the scales of these structures as a way of searching the 'new' in both architectural practice and discourse.

Designed on a variety of scales, such as exhibition complexes, exhibitions, exposition, installations, and pavilions, it has served as a testing ground for innovative solutions, tools, instruments, and materials through the implementation of the latest tendencies in architecture. In architecture, these temporary structures have an essential role both in the local and global stratum, and even though they serve their purpose for a relatively limited period, they usually have the potential to attract the attention of the press, the wider public, the user and the architects.

Exhibition spaces, expositions, and pavilions invite architects and the public to observe, touch, enter, experience, interact, comment on, and think about architecture. As a 'new' architectural representation, temporary structures have grown as a spatial form in architectural research, discourse and practice. Both, the designer/architect and the observer/user of the pavilion are directed by these

2. M. Puente, *The Exhibition Pavilions: 100 Years* (Barcelona: Editorial Gustavo Gili, SA, 2000), 8.

3. S. Bonnemaison and R. Eisenbach, *Installations by Architects* (New York: Princeton Architectural Press, 2009), 14.

structures to open debate on architecture, which has an impact on the opening up of various possibilities in architectural space design. In this respect, pavilions can be interpreted as an agent for re-defining and re-formatting the boundaries of the architectural discipline.

Experimental Architecture in terms of Materials/Methods

Since the Great Exhibition was held in London in 1851, the field of exhibition design has been made a noticeable impact on architecture. The domain of architectural design is related to practical issues such as planning, the conceptualization of structures, function, and accessibility, but also user demands, including comfort, safety, and adaptation. Experimentation can be re-emphasized with research, analysis, and discussion in architecture, and can be based on the relationships among architectural concepts. 'Experimental Architecture' has developed as a movement in architectural research, discourse, and practice as a subject dealing with the experimentation of new ideas, new methods, and new materials.

Pavilion design has a powerful influence on creativity in architectural discourse, research, and practice as a form of temporary architecture. As a design method, temporary architecture generates ideas to take the place of problem-solving and completed solutions and operates outside the established rules and classifications of 'problem-solving architectural design activity.' Moreover, it is also less concerned with the constraints of engineering than in searching, experiencing and opening up new possibilities, and recognizing what the future holds for spatial design.

Experimenting with the new materials and new methods enriches architectural practice and discourse. In this respect, this paper suggests that pavilion design can be interpreted as a laboratory for experimentation in architecture. This indicated that the critical position of pavilion design could be considered in terms of both materials and methods as the conceptual base from which experimentation in architecture can be launched. An architect's choices of materials and techniques can be a key to creating possibilities and re-setting the architectural limitations. In this manner, in terms of challenging/questioning the material, there are two different kinds of knowledge, the first is related to its possibilities and limits, as well as understanding the architect's abilities as human beings.

Christina Lodder states that the crucial point of these laboratory works is that they are not undertaken for the creation of an end product or any immediate utilitarian purpose, instead they are designed with the understanding that such experimentation may eventually contribute to the resolution of some functional task.[4] Temporary structural design is the generation process in which examines, explores, and experiences the model rather than the end product. The main part of the experimentation is the generator process of these temporary structures, while the function/purpose of these structures is to facilitate testing and exploration, developing solutions for utilitarian requirements. Peter Smithson defines these

4. C. Lodder, *Russian Constructivism* (CT; London: Yale University Press, 1993), 7.

structures as 'real before the real,'[5] serving as a mock-up of the permanent architectural practices and can be viewed as grounds for the testing ground of new architectural concepts, expressions, constructions, techniques, methods, spatial figurations, and materials.

Temporality is mainly related to both limitations and opportunities for experimentation. This relationship provides an architect with a fresh medium in which it is possible to practice, learn, observe experience and explore 'new' opportunities in architecture through new building methods. Depending on the architect's perception and interpretation, this experimentation and exploration can change. Zaha Hadid, a highly creative architect, was interested in the temporality of semi-closed space and defined the 2000 Serpentine Gallery Pavilion[6] as a public space that could not be separated from the park, so there was no rigid boundary. The pavilion made use of simple and rapidly demountable materials to mirror its temporality. While the budget was limited to designing an improved tent, Hadid's pavilion had a significant impact on architectural discourse[7] in London (Figure 1).

Figure 1. *The 2000 Serpentine Gallery Pavilion by Zaha Hadid*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

Zaha Hadid's design experimentation reminds a former explanation of Le Corbusier. As indicated by the title 'Architecture: The Expression of the Materials

5. P. Smithson, "The Masque and the Exhibition: Stages Toward the Real," in *Language of Architecture: Lectures, Seminars, and Projects. International Laboratory of Architecture and Urban Design*. (ed.) Giancarlo Di Carlo (Urbino, Florence: Sansoni, 1982), 62.

6. The Serpentine Gallery Pavilions has been the case of the author's completed master thesis entitled "Temporary Architecture: The Serpentine Gallery Pavilions," supervised by Prof. Dr. Ayşen Savaş (Turkey: Middle East Technical University, 2013).

7. There are several acclaimed architectural magazines that have given space to these temporary pavilions, including Architectural Review, Architectural Design, A+U, Detail and Architectural Record.

and Methods of our Times' suggested, Le Corbusier's focus was on the issue, 'Is architecture not determined by new materials and new methods?', dwelling on the change of materiality and methods and their development.[8] Le Corbusier complained about the reproduction of past architectural styles and techniques. At any given time, the architectural practice should be an expression of the present circumstances, not belated incorporation of previous architectural endeavors.

'We still permit our houses to lie close to a damp and unhealthy ground. We are still discussing whether or not our houses are to have roofs, while roof gardens bring health, joy, and an upheaval of plan replete with magnificent liberties. We are still building our houses of stone, with massive walls, while light and slender cars are speeding at sixty miles an hour through snows or under the tropical sun. We are still employing masons and carpenters on the job, to work in rain or snow, or fair weather, while factories could turn out to perfection that which we accept poorly executed. And so forth and so on.'[9]

Following this statement, Le Corbusier questioned how architects would adapt so many innovations to their work today, how they would select for their building's unknown forms of construction, and how they could arrange architectural phenomena to introduce something new and aesthetically innovative. As he stated above, it is time to think about 'new' in architectural practice and discourse, being an undeviating advocate of the temporality of forms, design, and practices in the discipline. As such, architecture should be 'an endeavor innovative progressive rather than a dogmatic adherence to past prerequisites and set methodologies,'[10] and the place of pavilions in this context would resonate positively in Le Corbusier's judgment. The architectural community can attach more serious and objective considerations to the relevance of temporality in architectural discourse, as exhibited in the case of pavilions, initially through the materiality and methods of architectural practice. Such experimentation in architectural context could open up new fields and visions.

Le Corbusier claimed that contemporary architecture should contain innovations, new technologies, and new construction forms, as well as an aesthetical perception. As suggested by Le Corbusier, Daniel Libeskind has explored new materials and methods of the present circumstances as an expression of experimentation in architecture. When designing the 2001 Serpentine Gallery Pavilion, Libeskind delved into his interest in folding techniques, being influenced by origami, and adopting the same principles in his folded structures (Figure 2). Since a rigid structural load-bearing frame supported each folding aluminum panel, the structural strength of the folded framework came from its being. The architect achieved stability through the use of simple forms such as triangles and rectangles, although the outcome of the complete design was complex and unorthodox.

8. Le Corbusier, "Architecture: The Expression the Materials Methods of our Times?" in *Rethinking Technology* (ed.) William Braham and Jonathan A. Hale (The United States of America and Canada: Routledge, 2007), 39.

9. Ibid, 40.

10. Ibid.

The pavilion was named 'Eighteen Turns,' referring to the 18 folds in the structure. Using angled metallic surfaces provided an integrated interactive space exploration both inside and outside, blurring the boundaries between the spaces. Libeskind stated that although the pavilion would disappear, it would leave an unforgettable afterimage and an exceptional resonance on a unique space.[11] He also claimed that pavilion design offered several ways of experimentations and explorations of the place: before the pavilion, at the present time of the pavilion, and after the pavilion gone. Underlining a long-lasting effect on the site where these temporary structures stood, they can incorporate the methods and materials of future architecture and create a new vision of architecture for both a physical and an aesthetic impact on a neighborhood or city.

Figure 2. *The 2001 Serpentine Gallery Pavilion by Daniel Libeskind*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

The architects of the Serpentine Gallery Pavilions investigate the boundaries of experimental architecture and re-interpret the temporality through their designs. An investigation of these pavilions can help in understanding the ingenuity and creativity of architecture since through these temporary structures, and the architect can experience new materials and new methods. Architect and critic Mark Robbins underlined that the pavilions are distillations of experience in architectural practice.[12] The architect can gain experience in terms of new

11. P. Jodidio, *Serpentine Gallery Pavilions* (Spain: Taschen, 2011), II.06.
12. Bonnemaison and Eisenbach, *Installations by Architects*, 2009, 14.

materials, methods, and techniques on building performance because the period of use and construction are limited. Moreover, a limited budget forces the architect to create a work of clear-cut expression.

Temporary structures can propose evidence of what is to come in future architecture, even if the architectural project is realized or not. The design process itself may have a powerful impact on architectural practice and discourse, so the experimentation is not only related to the end product. Designing the 2004 Serpentine Gallery Pavilion, MVRDV supported this statement in their reinterpretation of the definition of 'pavilion,' although it was never built since it was extremely challenging in terms of budget, the complexity of construction and disabled access. They designed an artificial sky within a galvanized steel frame structure under which to cover the entire Serpentine Gallery was to be buried, which was a refreshing departure from the idea of a more-or-less-pretty object standing on a lawn (Figure 3).

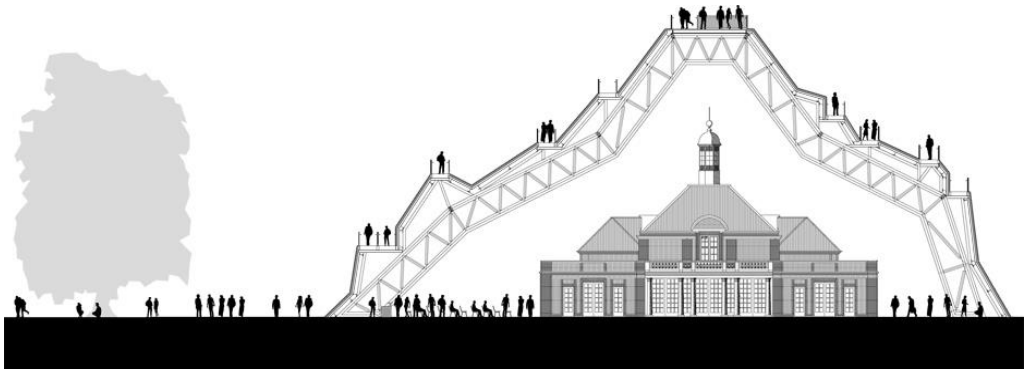

Figure 3. *Section of the Serpentine Gallery Pavilion of MVRDV*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

This unique unbuilt pavilion was to be over 23m high, resembling a giant three-dimensional lobby, and would have been the highest of all Serpentine Pavilions if it had been completed. MVRDV discussed and explored new methods for exhibiting the Gallery within the pavilion. The design of this pavilion provided MVRDV to experiment with the construction of new materials and structures not just of buildings, but also information systems and data, as a continuous exchange of space and material in a contemporary architectural domain. They preferred to not develop an additional structure in order to form a stronger relationship between the pavilion and the Gallery, but rather to extent to the Gallery according to which the pavilion could not be separated physically from its Gallery.

Cecil Balmond, Deputy Chairman of Arup, mentioned that MVRDV's project had been a part of an exploration of new materials, forms and methods of architectural practice, and research into information systems and data. Even though the project was not realized, it raised many debates and had a significant impact on architectural discourse. This unrealized project had no less effective than those that had been built, underlining the fact that there were financial realities that prohibited the construction of MVRDV's design. The pavilion has still been part of the experimental architecture, whether the project was realized or not, and making a significant impact on both architectural discourse and practice.

Architectural historians and critics have written and speculated about the temporary structures since its experimentation of method could be the key to new architectural practice and thinking. The pavilion also provided both on public and architect to explore and comment on these temporary architectural practices. The limited nature of these temporary structures can be transformed into the creation of opportunities. The pavilions are designed to explore ideas through a time-limited process of design, while the limited budget forces the architect to find new approaches to the issue of 'temporality.' Architects can use temporary structures as laboratories for new approaches that have never been attempted or achieved in architectural practice.

Representation of the Future Architecture as a New Vision

When the German Pavilion was opened at the 1929 Barcelona Exhibition, Mies van der Rohe questioned the function of the exposition and suggested that the exhibition making money could not be related to the current situation, but should be evaluated based on its accomplishments in the cultural field.[13] Today, the exposition must be the laboratory to identify new solutions in both technology and industry, as the temporary structure can able to change the world, architecture as well as the architectural perception. In this way, future expositions will also be necessary for architecture, technology, and industry in the forming of future architectural styles and techniques.

While searching for what the future of architecture might be and how their experimentation can be represented, the architects of the temporary structures experience new ways of architecture. This small-scale and time-limited practice can be the key to the future of the architectural practice. The pavilion design can provide the clues of future architecture and also be a key to the future project of the architect that can regenerate the idea, which he/she used for the design of the pavilion and used as a concept. Oscar Niemeyer designed the 2003 Serpentine Pavilion as a summary of his architectural design style in London (Figure 4). He described his pavilion as a flavor of everything that characterized his work, which was based on a cantilever. At the very beginning of the design process, he envisioned something floating above the ground. In the exterior, the simple white-and-red formulation was set on the lawn, creating white curves and red planar surfaces that Niemeyer stated that the mountains and women's bodies inspired him.

Niemeyer's pavilion was based on an integration of the idea of temporality and permanence, going beyond the constraints that permanent buildings usually required. When choosing the materials, he decided that concrete was not an appropriate material for a temporary structure but could not give up the idea. Since it was made of concrete and steel, the pavilion appeared more like a permanent addition to the park than the previous structures. The combination of red and white and the use of concrete became the signs of Niemeyer. In 2005, two years after the

13. B. Reyner, *Theory and Design in the First Machine Age* (The United States of America: The MIT Press, 1980), 321-322.

Serpentine Pavilion, his design of the Ibirapuera Auditorium in Sao Paulo, Brazil, adopted the same curvilinear forms and white-red combination (Figure 5).

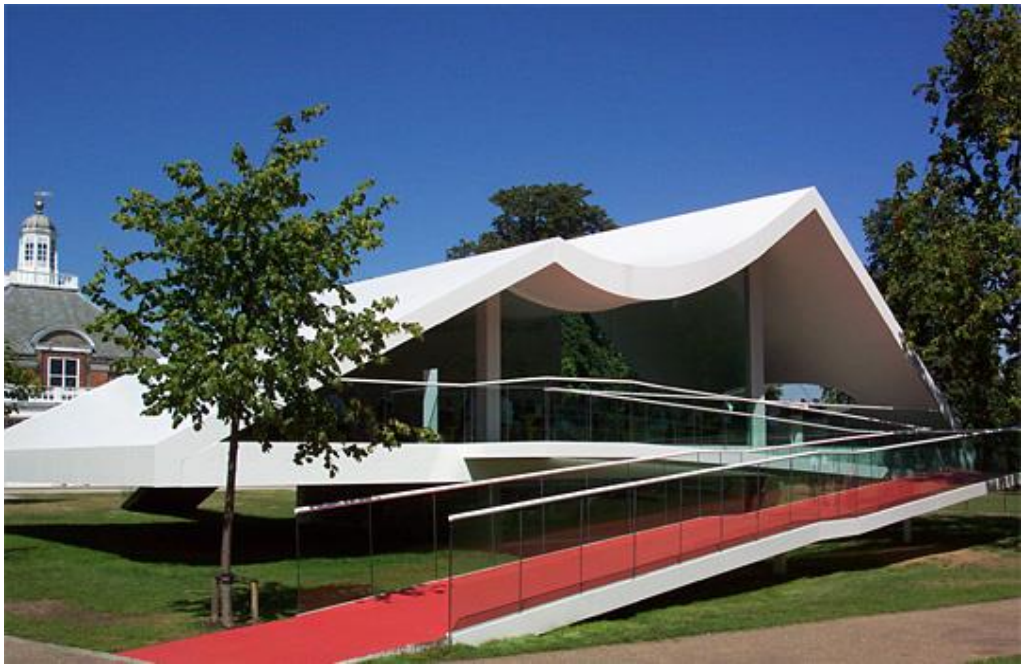

Figure 4. *The 2003 Serpentine Gallery Pavilion by Oscar Niemeyer*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

Figure 5. *Ibirapuera Auditorium by Oscar Niemeyer, Sao Paulo, Brazil 2005*
Source: Archdaily 5 May 2018. www.archdaily.com.

The innovative architectural design allows architects to explore new approaches and methods in terms of the small-scale temporary structures. These structures are encouraged to find new solutions and creative ways of designing a 'new' in architecture. While designing temporary structures, architects can discover

future architectural solutions. Pavilions provide an opportunity to redefine and reinterpret the boundaries and components of conventional architecture as an example of temporary structures.

Pavilion design is valuable for exploring new architectural creative approaches that may form part of the architecture of the future. The possibilities of the verb 'to be' represent the past, present, and also the future can be developed with researchers. The experimental design is a gateway to future architecture and its impact on the world far exceeds the simple provision of temporary structure types. Temporary architectural practices can influence contemporary architecture and the perception of the architects by making open-minded statements about the role, function, and quality of new spaces, and these statements may be used by architects in future projects while providing both architectural history and discourse with conceptual and practical backgrounds.

Re-invention of the 'Pavilion' by Architects

The pavilion definition has no explicit limitation and boundary. In each case, while designing such temporary structures, the architects redefine and set up their own rules. Zeynep Çelik mentions about the values of temporality in architectural practice and discourse that expositions have served as laboratories for the experiencing of new architectural forms, compositions, materials, and methods, and indeed, no architectural examples of the late 19th century would exclude the Eiffel Tower or the Galerie des Machines, which embodied the new aesthetics of technology. Not only expositions, but also pavilions also reflect the changing tendencies in architecture[14] and do so with remarkable innovations, leaving plenty of curative marks in the minds of admirers, architects, and critics alike.

The pavilion is a way to explore architectural ideas and design concepts without permanence constraints and opens new opportunities for architects to experience new tendencies in their future architectural practices. The definition of the term 'pavilion' cannot be defined with any certainty since it changes concerning the interpretation of the architect. Based on a re-exploration of space with new materials, the architect can innovatively redefine temporality through the pavilion and can also experience changing tendencies in architecture in terms of these temporary structures.

Rem Koolhaas did not want to reinvent the tradition of the pavilion in the Serpentine case.[15] Rather, he concentrated in particular on the 'space' of the pavilion since he believed in the power of the pavilion. The main objective of his design was to redefine the space within a temporary situation, stating that the pavilion can only be made possible by events and activities and that space itself is therefore temporary, being changeable according to the circumstances. He proposed to create a dome for the 2006 Serpentine Pavilion, in which he articulated his desire to achieve lightness in the structure through innovatively using new

14. Zeynep Ç. *Displaying the Orient: Architecture of Islam at Nineteenth-Century World's Fairs* (Berkeley: University of California Press, 1992), 6.

15. Jodidio, *Serpentine Gallery Pavilions*, 2011, VII.06.

materials, by doing so, designed changeable space based on temporary situations. His pavilion was redefined in terms of the materials he used and the space he created and experienced the potentials of 'inflatable' structures. He also experienced temporality by the working principle of the structure and defined his pavilion as being based on experience, not only the temporary structure but also the transient situations of the structure.

Figure 6. *The 2006 Serpentine Gallery Pavilion – 'Cosmic Egg' by Rem Koolhaas*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

Koolhaas' 'Cosmic Egg' aimed towards 'lightness' by the use of new materials in an innovative way and redefined the term 'pavilion' thorough collaboration of both materials and architectural space that was defined in terms of 'air' (Figure 6). This balloon would rise in fine weather and allow air to circulate inside the sphere, but when the colder weather it fitted inside the walls. The strength of its changeable form depending on the activities and weather conditions could be considered as 'unique' to this temporary architectural design. Sarah Bonnemaison and Ronit Eisenbach stated that these inflatable structures could be easily built and quickly erected, and that the curvatures of air-supported structures challenge the linearity that was the mainstream of Modernism.[16] Due to the curvature form of its dome, this pavilion was distinguishable from other Serpentine Pavilions. The architect of the pavilion was interested in the temporary conditions of the pavilion that was determined by the balloon. By doing so, the visitors of the pavilion were able to experiment with the changeable boundaries of this architectural space (Figure 7).

16. Bonnemaison and Eisenbach, *Installations by Architects*, 2009, 19.

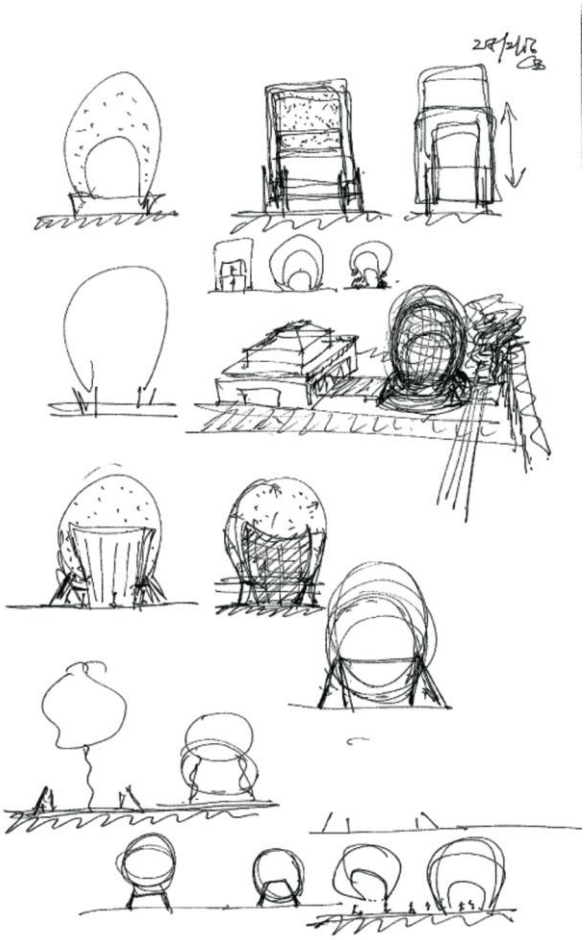

Figure 7. *The Sketch of the 2006 Serpentine Gallery Pavilion by Rem Koolhaas*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

With these structures, the architects redefined and revamped temporality in architecture, and while their designs were focused on the same concept, their vision, understanding, perception, interpretation, and end product have been remarkably different. In 2000, Zaha Hadid reinvented the idea of a tent or marquee in her design of the Serpentine Pavilion (Figure 8). In Nikolaus Pevsner's Dictionary, 'tent' is defined as 'a portable shelter that is a tensile structure erected in place by a membrane stretched tightly and attached to the ground with ropes,'[17] which fits in with what Hadid created, being a triangulated tensile canvas membrane and triangulated steel frame structure. By creating an airy roof form, she redefined the idea of portable shelter. The concept of the pavilion was also a reinvention of the 'tent,' although its primary purpose was to design the pavilion without permanent architecture limitations.

17. Fleming, Honour and Pevsner, *Dictionary of Architecture and Landscape Architecture*, 1999, 567.

Figure 8. *The Interior of the 2000 Serpentine Gallery Pavilion by Zaha Hadid*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

'There's the tradition of making pavilions, which in a sense are not real buildings. It is a display-oriented trajectory, from the large exhibitions of the 19th century to modern ones like Frieze Art Fair. So, throughout the history of the relationship between the park and the city, between the Serpentine Gallery and the park, between the Serpentine Gallery and the pavilion, we see an ongoing negotiation of what constitutes reality. This determines the degree to which we allow people to understand the potential of this construction as a means to re-evaluate themselves in relation to the surroundings.'[18]

Olafur Eliasson's quote revealed his thoughts related to the potentials of pavilion design. He clarified that although the pavilion cannot be seen as a building, it created a real relationship with its context and related to the surroundings. Its relationships could be redefined by each architect, as while each pavilion was located in the same context, each outing exposes itself with a different architectural perception, and each year the pavilion's users experienced and encountered the various potentialities of these temporary structures with different and unique observations.

Through redefining the pavilion, one regulated a new relationship among the public, the architect, the context, and the pavilion itself. As Eliasson denoted, Daniel Libeskind was interested in the relations of the pavilions and redefined the pavilion with its surroundings. Libeskind referred to the pavilion as a means of

18. Jodidio, *Serpentine Gallery Pavilions*, 2011, VIII.06.

exploration/discovery, claiming that it had a powerful effect on the place on which it stands and leaves an afterimage. Moreover, he went on to suggest that the pavilion indicated of what new architecture might be and what might have come next in architectural practice and discourse. The pavilion had a physical and aesthetic impact on the space in which it was erected, as it might be a new architecture in a town or a city. Designing a pavilion was a way of experimenting and exploring new architecture, offering a new relationship with its context. The 2001 Serpentine pavilion encouraged the public to come, see and experience it, and the lack of walls made it possible to experience and observe the pavilion's direct link with its surroundings, penetrating the relationship between the interior and exterior of the pavilion, which also provided free of movement (Figure 9).

Figure 9. *The Context Relationship of the 2001 Serpentine Gallery Pavilion by Daniel Libeskind*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

As stated by José Luis Sert in 'On Windows and Walls,' the development of new methods of construction and new representational techniques opens the door for a rethinking of the ancient tradition of the relationship between the exterior and the interior through the openings.[19] The potentials of opportunities have changed in parallel with technological developments. A new relationship has been created between the interior and exterior components of a structure. The openings have served as a picture of nature from the inside to the outside or vice versa. New methods and new technologies represent a compelling force for the discovery of a new way of thinking in architectural discourse and practice. SANAA designed the 2009 pavilion as a continuum aluminum cloud over the lawn of the Serpentine Gallery, intending to create a pavilion that would provide a continuity of

19. Puente, *The Exhibition Pavilions: 100 Years*, 2000, 5.

experienced space between the park and the Gallery building. The pavilion resembled a simple floating aluminum roof that was drifting freely among the trees, like smoke, forming a continuum roof between the park and the gallery itself. There was no boundary between the exterior and the interior, as SANAA reinvented the pavilion based on the integration of these spaces being integrated (Figure 10).

Figure 10. *The Continuity of the 2009 Serpentine Gallery Pavilion by SANAA*
Source: Serpentine Gallery 5 May 2018. www.serpentinegallery.org.

The architects of the Serpentine Gallery Pavilions set forth their (re)definitions, while designing these temporary structures. Both redefinitions play a role in showing and experiencing the new developments and tendencies in architecture, leaving impressive and curative marks in both the architect's mind and the observer's mind in terms of the generation process of the pavilion and the end product of the design. A redefinition of the pavilion can serve as a laboratory for understanding the limitations of temporary architecture. These structures have been considered by the architects as a way of researching, experiencing, exploring and achieving a 'new' that they have never before adopted in their previous architectural practices and can also can be redefined as a regulator of the new relationship among the public, the architect, the context and the pavilion itself.

Conclusions

This study introduces the idea of 'experimentation in architecture' as an inevitable component in the production and design of the pavilions, given the powerful relationship it forms among the domains of architectural research,

discourse as well as practice. While offering new rules and classifications for structural problem solving, experimentation produces a direction towards thinking to allow new design ideas, new methods, and new materials in architecture. In architecture, this 'new' approach focuses on seeking events, searching, witnessing an opening up of new possibilities related to space design. Experimental architecture is integrated with real-world conditions and also can be evaluated and tested as an agent to expand architecture's limit as a discipline.

In the domain of architectural discipline, this paper focuses primarily on the pavilion as an object of experimental architecture. Temporary architecture has been argued to establish new relationships that differ from those found in more permanent structures by expanding the boundaries of the spatiality of permanent architecture. Therefore, this study has argued that, due to its small scale and transitional nature, the design of temporary architecture can serve as a foundation for experimentation, and can be considered as a 'laboratory' in architectural practice in terms of using new materials and methods. Hence its very nature challenges the permanence of architecture and allows the architect the ability to experience new tools and concepts in the field.

The main objective of this study is to introduce the possibilities and potentials of temporary structures of the Serpentine Gallery to understand the boundaries of experimentation. The Serpentine Pavilion architects have reinterpreted this temporality through their designs, so an investigation into the series of pavilions can provide an understanding of creativity in experimental architecture. This experimentation has formed part of the future architecture and developed through researches into the potentials of influencing contemporary architecture, and part of this study involves a redefinition of the pavilion, in that there is no precise definition of what a pavilion is. Pavilion design has been regarded as making a great connection to future architecture as innovative models of what will become more extensive construction.

To conclude, the experimental architectural design is valuable for the exploration of new creative architectural approaches that may form part of future architecture. The possibilities of the verb 'to be' represent the past, present, and also the future can be developed with researchers. The experimental design is key to future architecture and can influence the world in a way that far beyond the simple provision of temporary structures. Temporary architectural practices can change contemporary architecture, and the perception of the architects that make architects in future projects may use open-minded statements about the role, function, and quality of new spaces and these statements, thus providing both architectural history and discourse with conceptual and practical backgrounds.

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