Architecture the art of Permanence

"Le dur désir de durer"

Paul Eluard, 1946

Architecture the art of Permanence

Alexandre Pavlidis

WHAT IS PERMANENCE IN ARCHITECTURE?

WHY WOULD PERMANENCE BE OF ANY USE NOW?

HOW TO BUILD PERMANENCE?

What is permanence in architecture?

What is Permanence in Architecture?

Architecture fundamentally lies in the act of fixing elements in time and space. By doing so, it divides reality in two states: the permanent and the transient. It follows that the question of the reason and the manner to do so needs to be addressed. What is worth being materialized and fixed as a permanent element? How should it be realized to persevere and cohabitate with the transient movements of life?

"Permanent" takes roots in the Latin *permanēo* : *per* (through) and *maneō* (I remain). It is "what remains through (time)". Permanence is the resistance to the passage of time. It is what is fixed in space and time. It evokes notions similar to words such as perennial, eternal, timeless, atemporal, everlasting, ageless.

In a necessary reciprocity, permanence – which can only be eternal in the abstract world of ideas – exists relative to its opposite. The "transient" comes from the Latin *transeo : trāns* (across) and *eō* (go). To go over, to pass through time.

In a similar way, ephemeral derives from the greek *ἐφημέριος* : from ἐπί (*epí*, "on") + ἡμέρα (*hēméra*, "day"). It is what only lasts for one day. Ephemerality is often related to the idea of cycle. In contrast, permanence does not have a cyclic character, or at least not at a visible time scale.

The Aphorism of August Perret and the Vitruvius' Triad

In 1952 August Perret published a series of aphorisms assembled in a small book entitled *Contribution à une théorie de l'architecture.* Implying that the world would be separated in two fundamental categories that architecture had to deal with, the first aphorism proclaims: « Mobile or immobile, everything that occupies space belongs to the domain of architecture »[1].

Perret continues by explaining architecture's place within those categories: « The architect is the constructor who fulfills the transitory through the permanent »[2]. Thus, architecture is characterized by its specific temporality inscribed in duration. Its inertia is opposed to the short and ever-changing human life. Architecture tries to contain and respond to the transient conditions by permanent means.

He continues: « Permanent are the conditions which nature imposes, transitory are those which man imposes »[3], « It is by construction that the architect fulfills both the permanent and transitory conditions »[4]. For him, construction is the manner to crystalize in a permanent way the architect's answer to the conditions imposed by man and nature.

As Perret explains, we will see that the dualism permanent/transient – or immobile/mobile – or permanent/passenger – pertains to any form of architecture, consciously or unconsciously.

1 **Auguste Perret**, *Contribution à une théorie de l'architecture*, Paris, 1952

2 *Ibidem*

3 *Ibidem*

4 *Ibidem*

Like all things, architecture endures the passage of time. Through history and by definition architecture has always had a specific relationship to duration: architecture produces its own temporality. If some buildings took longer than a human life to be built, some are still standing 6000 years after they were erected. In *De Architectura*, the Vitruvian Triad « *firmitas, utilitas, venustas* »[4] affirms firmness as the first pillar of architecture: to stand and resist the passage of time is one of architecture's earliest definitions. Yet if we continue to analyze this triad, we could say that the two other principles also inform a building's permanence. It is true that if a construction is not robust enough it will fall as quickly as it was built. But what if a building is no longer functional? And what if it is not considered « beautiful » in the future? (Here *venustas* has to be understood in a larger sense than beauty; it is about aesthetic value – in all its forms – its signification included). In those cases – even though a surplus in one of the three categories could help preserve building – there is a strong chance that it would be destroyed. Thus, a building must be judged against *firmitas, utilitas and venustas,* overtime to reach permanence.

5
Marcus Vitruvius Pollio, *De Architectura*, 15 B.C.

Aldo Rossi and the theatre of the possible

In Aldo Rossi's perspective, architecture is also permanence opposed to the ever-changing nature of life – the transient. In 1988, explaining his intimate vision of architecture, he published *Autobiographia Scientifica*. For him — « architecture is like a primary element onto which life is grafted »[6] — « Architecture should be sparsely characterized; it must be manifested only to the extent that it serves the imagination or the action: even the dreary functionalists partially understood this »[7] — « the architect must prepare his instruments with the modesty of a technician; they are the instruments of an action which he can only glimpse, or imagine, although he knows that the instrument itself can evoke and suggest the action »[8].

In this sense, architecture is the theatre of the possible. It is a construction which tries to anticipate actions before they occur within the suggested frame. Thus, architecture is the permanent scene of an unknown scenario. It is the fixed frame of a void, here to welcome the movements of life. For Rossi, buildings are catalyzers of action; they contain latent scenarios ready to unfold. It is their responsibility to be silently implicit — full of meaning and potentials — to inspire life.

For this reason, the architecture of Aldo Rossi seems to be a moment out of time; a suspended reality that contains the energy of a future event.

In *Autobiographia Scientifica*, Rossi describes this tension at different scales. The most literal example is the one of the theatre: « I realized as much while looking at empty theaters as if they were buildings abandoned

6
Aldo Rossi, *Autobiografia scientifica*, Milano, 1981

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Ibidem

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Ibidem

forever, even though this abandonment in reality is often briefer than the length of a day. Still, this brief abandonment is so burdened with memory that it creates the theater. »[9]. In this case, the lapse of time during which the theatre is empty foresees the upcoming action; only from silence emerges action.

9
Ibidem

To fully understand the idea of a suspended instant as an element charged of potential, it is interesting to understand his relation to Sacri Monti and Hopper's paintings:
« Finally, from my childhood education I cannot forget the Sacri Monti of S. that I mentioned before and the other Sacri Monti that we visited at the shores of lakes. Undoubtedly, they gave me my first contact with figurative art, and I was, as I now am, attracted by stasis and naturalness, by the classicism of architecture and by the naturalism of people and objects. The quality of suspension that I experienced in them aroused in me forms of exalted coolness; here too I wanted to pass beyond the window grate, to set out one of my own objects on the tablecloth used at the last meal, to escape the condition of a passerby. In all of my projects and drawings, I believe there may be a hint of this naturalism which transcends their oddities and defects. When I saw the complete work of Edward Hopper in New York, I realized all this about my architecture: paintings like *Chair Car* or *Four Lane Road* took me back to the stasis of those timeless miracles, to tables set for eternity, drinks never consumed,

Edward Hopper, *Chair Car*, 1965

things which are only themselves »[10]. In this sense, Rossi is fascinated by the suspended instant proposed by Hopper; a scene full of tension ready to create a new scenario.

10
Ibidem

When Rossi places the ephemeral wooden *Teatro del Mondo* in relation to the old buildings of Venice, it is because he believes that this relationship creates new stages for the city which will inevitably lead to new scenarios and actions. It is not only that his project is a theatre, but it is part of the wider scene of the city.

For Rossi, time is not only a chronological phenomenon: « The double meaning of the Italian word tempo, which signifies both atmosphere and chronology, is a principle that presides over every construction; this is the double meaning of energy that I now see clearly in architecture, as well as in other technics or arts »[11]. Rossi describes what he calls an "atmospheric phenomenon", as the "energy" of potential forthcoming events.
This atmospheric time saturation can be noted in most of his projects. In the example of the elementary school of Fagnano Olona, built in 1972-76, the clock takes an important role. In the center of the silent and symmetrical composition of the building, the clock becomes a speaking element. Its existence foresees the events of the day. In the particularly rhythmed life of schools, it dictates the scenario to deploy. A similar

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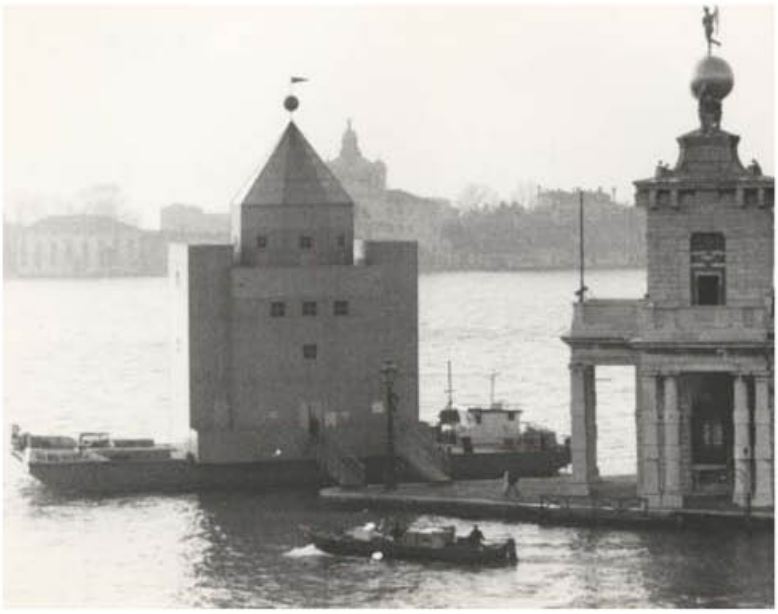
Ibidem



Aldo Rossi, *Teatro del Mondo*, Biennale di Venezia, 1980, (Photo extracted from *Aldo Rossi, buildings and projects*, New York, Rizzoli, 1985)

approach is taken in the restoration of the school of De Amicis in 1969-70. Again, a silent and symmetrical composition is chosen. But instead of a clock, a fountain made of a triangular and a rectangular prism seems to materialize the flow of time. The role of a "silent architecture" regarding permanence will be explained later on; but it can be noted that here, the silence seems to leave a lot of space for the action to happen.

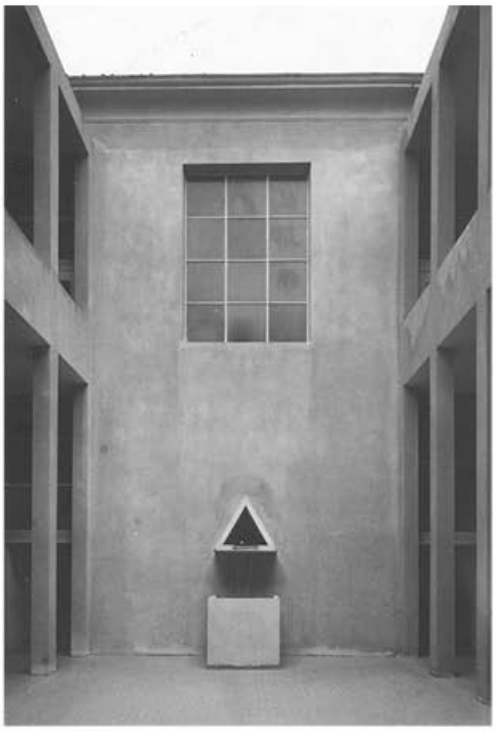
Contradiction : « L'éphémère est éternel »

If the Ovidian saying is right and « Time destroys all things », then nothing is really permanent. Things are permanent only relative to human lifespans and the specific temporality of our civilizations. On the contrary, only the ephemeral character of any existence is eternal. This contraction is at the base of the complexity and ungraspable character of permanence. Time is usually divided into three categories: past, present, and future. The present is considered to be the most ephemeral thing that exists: not even quantifiable, it comes and fades away instantly. Yet, we will never be in the past, and never in the future, remaining permanently in the present.

In a similar way, the water of the sea is in constant movement and every particle it is made of is changing position at all times. At every moment, water appears and is different. Yet, even though the water is moving, the water is said to be "here". The sea is considered "permanent", yet it is constantly changing. As Hermann Melville says in *Moby-Dick* : « It is the image of the ungraspable phantom of life ; and this is the key to it all ».

If it is difficult to define if the water of the ocean possesses a character of transience or one of permanence, it is likewise difficult to define if the permanence of a room is measured by its fixed limits or its ever-changing content.

Aldo Rossi, *School of De Amicis*, Italy, 1969-70, (Photo extracted from *Aldo Rossi, buildings and projects*, New York, Rizzoli, 1985)



Aldo Rossi, *Elementary school of Fagnano Olona*, Italy, 1972-76, (Photo extracted from *Aldo Rossi, buildings and projects*, New York, Rizzoli, 1985)

Why would permanence be of any use now?

The specific temporality of architecture: disadvantage or asset?

Time is a continuous and irreversible progression of existence. While apparently heading for the future, time turns present into past. If fear of death has made of time an enemy, people have tried to defy it through architecture in order to expand their destiny throughout posterity. Of course, architecture often has a longer lifespan than humans, but as the Ovidian saying states: « Time destroys all things ». In response, architecture has been made resistant – permanence through inertia. As Marvin Trachtenberg says, « made to look as if they might defeat architecture's nemesis and triumph over time »[12]. It is not only that architecture has been made resistant but also that architects took great care of creating a look of imperturbable strength and even sometimes elaborate a "timeless" form. By doing so, architects made of architecture a core of human evolution, that could be the guiding element of continuity. To persevere, buildings needed to evolve through time. Their modification was necessary to suit the new needs and constrains: but at the same time, it is through its very transformation in time, that architecture tended to refine itself and reinforce its character. On the contrary, « To modern minds, any post-initiation change is almost inevitably bound to be for the worse, especially concerning design integrity »[13].
While architecture since the classical period had attempted to fight time through permanent architecture, modern architects have chosen to disconnect from time. Whereas the act of building was the main concern of architects in the past, drawings and abstract representations took more and more importance through the 20th century. Architects became designers rather than builders because the focus shifted to the abstract and theoretical project. Even when built, the focus is often made on the unbuilt version of the project. The brick house of Mies van der Rohe became an icon of modernism in large part thanks to its abstraction; that was precisely given by its incompletion. Only this abstraction is able to maintain absolute integrity. Only "out-of-time" can the project sustain its perfection and stand proudly against duration. The architectural representations of Theo van Doesburg are a good example of the tendency to create projects outside of reality, even disconnected from the ground in his paintings. Perhaps it is for this reason that it seems that — when built — many modern buildings cannot resist to the corrosive nature of time. I believe that a lack of permanence prevents them from being guiding elements of continuity in the development of cities and their territory.

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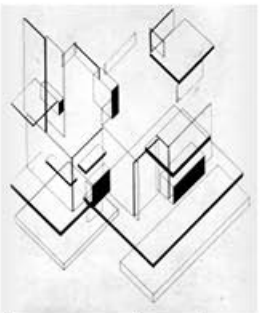
Marvin Trachtenberg, *Building-in-time: from Giotto to Alberti and modern oblivion*, New Haven, Yale University Press, 2010

13
Ibidem



Theo van Doesburg and Cornelis van Eesteren, maison particulier, 1922

At the 2016 AIA convention, Rem Koolhaas – who considers himself as the last modernist – confessed that the slow pace of architecture could not keep up with the speed of contemporary Silicon Valley. Nevertheless, a large quote of his thoughts seems important to show that this ascertainment is

far from leading to a pessimist conclusion: « Architecture stands with one leg in a world that's 3,000 years old and another leg in the 21st century. [...] You could say that we're the last profession that has a memory, or the last profession whose roots go back 3,000 years and still demonstrates the relevance of those long roads today. I thought we were actually misplaced to deal with the present, but what we offer the present is memory »[14]. Therefore, if the slow pace of architecture can be considered a failing, its specific temporality can also be seen as the greatest compensation that the profession can offer: a compensation that modernists might not have fully exploited in designing project out-of-time.

14
Rem Koolhaas, interview; 2016 AIA convention, 2016

The attitude of Koolhaas takes roots in a rather old strategy. Even if he surely does not reduce the storage of memory to monuments, his idea is linked to the role of the "intentional monuments" described by Alois Riegl — a means to compensate for the transience of memory with permanent communal memorials.

The necessity of permanence for memories and identity

Followingly, it is possible to interrogate architectural permanence as an opportunity to be the support of memory. The essential theory of Maurice Halbwachs explained in *La mémoire collective*[15] should be kept in mind while studying persistence. Halbwachs believes that people are always transforming their environment to their image, and at the same time are being transformed by their environment, which is made of resistant elements created by past generations or that are primordially present. This permanence could thus be a spatial and social structure for society and its constructions. Therefore, a dialectic between people and their environment is established and becomes a guiding thread for society.

15
Maurice Halbwachs, *La mémoire collective*, Paris, 1950

Alois Riegl's writing – *The Modern Cult of Monuments: its Character and Its Origin* – is of primary importance in the definition of the monument. Categorized in three types, monuments are all identified by their memorial value: « The term "monument" derives from the Latin *monere*, which means "to remind" »[16].
The « intentional monument » is created with « the firm aim of ensuring that the moment associated with this monument will never be relegated to the past, to keep present and alive the memory in the consciousness of future generations »[17]. Therefore, those monuments aim for their perfect preservation in an eternal present, and thus an eternal link to the past. Their reading is imposed by their creator.
The « unintentional monument » is revealed by the importance that contemporary people perceive in them. They have a historical value which « lies in the fact that it represents for us a particular stage »[18] of evolution.

16
Aloïs Riegl, *The Modern Cult of Monuments: its Character and Its Origin*, 1982

17
Ibidem

18
Ibidem

As opposed to the intentional monument, their reading is freely chosen by the people alive.
The « age-value monument » is « rooted purely in its value as memory [...] (which) springs from our appreciation of the time which has elapsed since (the work) was made and which has burdened it with traces of age »[19] – « from nature acting over time, we expect their disintegration as the symbol of an equally necessary passing »[20]. For Riegl, age-value is that that concerns the greater number of people. It is accessible to everyone because it requires no knowledge – be it historical of scientific – only feelings. Thus, Riegl finds it to be the most important because of its potential to touch the widest segment of the population. In terms of age-value, the point is specially not to eternally conserve the monuments in their original state, but rather to assure their eternal exposition to the cycle of alteration. Accordingly, only elements with enough inertia to have the time to age can hold this purpose and be constant reminders of the corrosive passing of time. For Riegl, « These monuments are nothing more than indispensable catalysts which trigger in the beholder a sense of the life cycle, of the emergence of the particular from the general and its gradual but inevitable dissolution back into general »[21].

19 *Ibidem*

20 *Ibidem*

21 *Ibidem*

To grasp the meaning of the age-value defined by Riegl, it is surprisingly interesting to quote some parts from the work of the Japanese writer Jun'ichirō Tanizaki *; In Praise of Shadows:*
« We do not dislike everything that shines, but we do prefer a pensive luster to a shallow brilliance, a murky light that, whether in a stone or an artifact, bespeaks a sheen of antiquity. Of course this "sheen of antiquity" of which we hear so much is in fact the glow of grime. In both Chinese and Japanese, the words denoting this glow describe a polish that comes of being touched over and over again, a sheen produced by the oils that naturally permeate an object over long years of handling—which is to say grime. [...] I suppose I shall sound terribly defensive if I say that Westerners attempt to expose every speck of grime and eradicate it, while we Orientals carefully preserve and even idealize it. Yet for better or for worse we do love things that bear the marks of grime, soot, and weather, and we love the colors and the sheen that call to mind the past that made them. Living in these old houses among these old objects is in some mysterious way a source of peace and repose. »[22]
Rather than a praise of shadows, here Tanizaki seems to be praising the old and lustered. Considering that his text/statement was written one hundred years ago, I do not believe that his attitude concerns only Asian cultures but may also be applied to contemporary thinking which is overwhelmed by remnants of age-value. His words also reveal quite sharply the poetic nature of the aesthetic of permanence: giving more depth to space by the materialization of time – rooting the present in a visible past – assuring a justified evolution through the continuity of

22 **Jun'ichirō Tanizaki**, *In Praise of Shadows*, 1933

time. It is important to note that Tanizaki is focusing on the scale of the building rather than the scale of the city or its territory. Likewise, I intend the considerations studied in this project to also apply to the reduced scale of the building. The link to the past, the existence of permanent elements in construction, are catalysts of the life and the evolutions that occur through the lifespan of an architectural product.

« Of course this « sheen of antiquity » of which we hear so much is in fact the glow of grime », Temple, Japan

If the more recent book of John Brinckerhoff Jackson – *The Necessity for Ruins and Other Topics* – appears to support Alois Riegl's definitions of monuments, he also provides new elements to help the understanding of monuments.

While travelling through the United States of America, Jackson noticed that Americans had erected numerous monuments to anonymous, ordinary figures – be they humans, buildings, landscapes or events – which were loved because these subjects had belonged to daily life in an idealized past. As opposed to intentional monuments, their purpose was not to make « a pact linking the present to the past »[23] – as he explains about the intentional monuments of Riegl – but rather to celebrate a « golden age where there are no dates or names, simply a sense of the way it used to be »[24]. These monuments suggest a lost age of innocence, simplicity, and purity. They « remind us that we belong – or used to belong – to a specific place: a country, a town, a neighbourhood »[25]. It is this desire of restauration and return to origins, that Jackson evokes when he speaks of "the necessity for ruins". It is from the disconnection to the present and the presence of the past, that reforms and renewal can emerge.

23
John Brinckerhoff Jackson, *The Necessity for Ruins and Other Topics,* 1980

24
Ibidem

25
Ibidem

With these considerations it is clear that monuments are structuring elements of the society and its constructions, but it is also clear that they are not the only elements of permanence defining it.
In *L'architettura della città (1966)*, Aldo Rossi tries to summarize the permanence in the city based on the theory of Marcel Poëte : « These persistencies are revealed through monuments, the physical signs of the past, as well as through the persistence of a city's basic layout and plans »[26].
For Rossi, layouts and plans are not only also seen as permanence in the city, but as « the most meaningful permanences »[27]. Altogether, fixed elements allow the city to sustain a continuous axe of development, «maintaining the position of their older *artefacts* »[28]. According to Rossi, these artifacts can be considered as propelling "vital" elements if they continue to function (be it an original or new utility), or «pathological» if only their form persists.

Continuing the theory of Maurice Halbwachs, Rossi believes that collective memory transforms its environment in ways which are always guided by the thread defined by the elements of permanence. Those fixed artifacts are the elements which have « already come to be accepted »[29], and that society can build upon. They are the link between the past and the future.

Accordingly, this thinking could lead to the determinist idea that the future is generated by the past. For Spinoza, man's very idea of free choice is the illusory result of inadequate knowledge. « [M]en believe themselves to be free », he writes, « simply because they are conscious of their actions, and unconscious of the causes whereby those actions are determined »[30]. However, by the dissociation of 'consciousness' and 'unconsciousness', Spinoza highlights a difference between the objective and determinist reality, and the subjective and undetermined reality created by our consciousness. However, one could argue that the only reality we are sure of living in is the subjective one that we experiment through our senses, and therefore, that one who hides behind determinism, hides his responsibilities. This belief reminds the thoughts on memory and liberty elaborated by Henri Bergson in *Matière et mémoire*[31] (It is not indifferent that Halbwachs was a diligent listener of Bergson's courses). In contrast with the determinist thoughts of predecessors such as Spinoza, Bergson believes that the accumulation of experience and memory is not restricting the possibilities of the present to a singularity. By the analyze of the childhood remembrances, Bergson highlights the malleable character of our memory. As we grow older, the modification of ourselves conduce the modification of our own memory and therefore of our past (at least subjectively). The persistence of the past is not carried without modifications; made by ourselves, the interaction

26
Aldo Rossi, *L'architettura della città*, Milano, 1966

27
Ibidem

28
Ibidem

29
Ibidem

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Baruch de Spinoza, *The Ethics*, 1677

31
Henri Bergson, *Matière et mémoire: essai sur la relation du corps à l'esprit*, Paris, 1896

with our environment, and society. In this sense, memory can be seen as a malleable base that allows to construct oneself in a dialectic way. In opposition with determinism, Bergson believes that it is necessary to dissociate the conservation of remembrances and the modification of oneself induced by this conservation. The conservation does not lead to the pure and simple reproduction of what has been, but to the permanent transformation of the one who carries his history with him. In this sense, memory is not the heavy weight of an irreversible and determinist past, but rather the possibility of liberty.

The selective nature of transformation

In his analysis of the territory as a palimpsest André Corboz quotes from Freud's *Das Unbehagen in der Kultur*. He explains the incompatibility between human memory and the city through the words of the psychoanalyst: « the fantastic hypothesis of a space where all superposition is eternally legible is paradoxical [...] In the city the selection is inevitable. At the same time, it is not possible, except in case of disaster, to erase the traces of its implantation »[32]. Accordingly, some artifacts cannot be annihilated, they persist through the evolution of the city – and likewise in the territory or in buildings. But what Corboz really intends here is the inevitable selective nature of the evolutions in any environment. As he says « Above all, we do not just add: we erase »[33]

On this consideration, Le Corbusier's attitude – found in his *Oeuvre complètes* – is illuminating:
« If I had to admit that my hand is dirtied by the refuse of centuries, I would still prefer washing it to cutting it off. The past centuries do not dirty our hands; on the contrary, they fill them with riches »[34]. Ultimately, if the environment is never a *tabula rasa*, it is also not simply a continuity keeping the existing elements intact. Le Corbusier's position is defined in a more precise way when he proposes new rules for urbanism in the *Charte d'Athènes*. Some articles are of particular interest:

Article 65:
« The life of a city is a continuous event that is expressed through the centuries by material works – lay-outs and building structures – which form the city›s personality, and from which its soul gradually emanates. They are precious witnesses of the past which will be respected, first for their historical or sentimental value, and second, because certain of them convey a plastic virtue in which the utmost intensity of human genius has been incorporated. They form a part of the human heritage, and whoever owns them or is entrusted with their protection has the responsibility and the obligation to do whatever he legitimately can to hand this noble heritage down intact to the centuries to come. »[35]

32
Sigmund Freud, *Civilization and its discontents*, 1929

33
André Corboz et Sébastien Marot, *Le territoire comme palimpseste et autres essais*, Besançon, Editions de l'Imprimeur, 2001

34
Le Corbusier, *Œuvre complète*, 1946

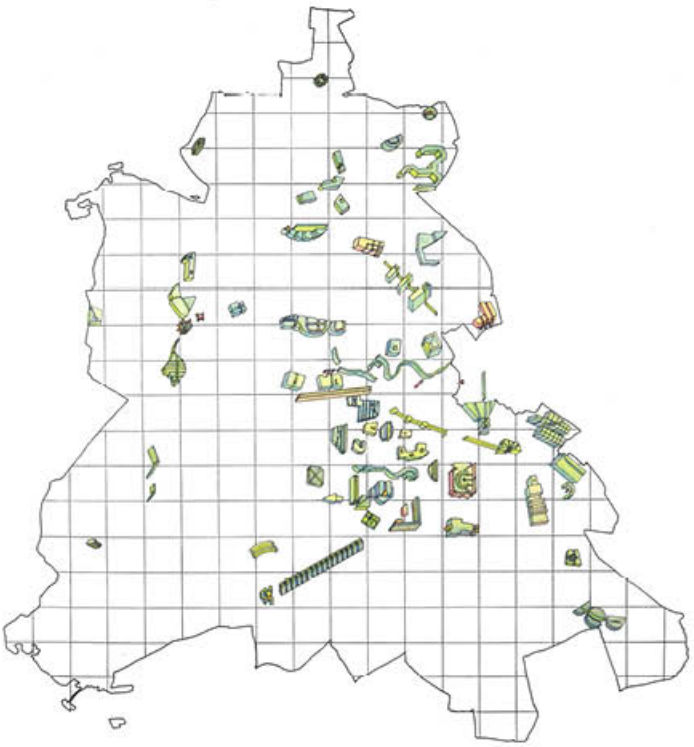
35
Le Corbusier, *La Charte d'Athènes*, Paris, 1971

Article 66:
« They will be protected if they are the expression of a former culture and if they respond to a universal interest. Death, which spares no living creature, also overtakes the works of men. In dealing with material evidence of the past, one must know to recognize and differentiate that which is still truly alive. The whole of the past is not, by definition, entitled to last forever; it is advisable to choose wisely that which must be respected. »[X]

36
Ibidem

In *l'Art décoratif d'aujourd'hui,* Le Corbusier warned against the tendency to consider everything as interesting: « Tout ce qui émeut sert. [...] tout ce qui obstrue est de trop. Qu'est-ce qui n'est pas superflu? L'*essentiel.* Attention, voici MM. les sophistes : "Tout sert, tout est émouvant". Réponse : "La journée n'a que vingt-quatre heures". Voilà l'indiscutable, l'intransformable, la constante. Voilà qui juge tout. Vous ne pouvez pas vous émouvoir de tout: vous n'en avez pas le temps. Il faut choisir. Il faut donc désigner l'essentiel, désigner le superflu. La journée de vingt-quatre heures fixe seule le sens du mot superflu et du mot essentiel »[37].
The underlying idea behind those words is that permanent elements of a territory, city, or building need to be chosen carefully and are only permanent compared to the ephemeral elements for which erasure is equally necessary.

37
Pierre Saddy, *Le Corbusier, le passé à réaction poétique*, Paris, 1988



O. M. Ungers, Rem Koolhaas, Peter Riemann, Hans Kollhoff, Arthur Ovaska, *The city in the city. Berlin: a green archipelago*, 1977

In the green archipelago planned by O.M. Ungers and Rem Koolhaas for Berlin, selection and destruction (or at least the decision to stop any maintenance) are proposed as the basic rules for the development of the city. Of course, berlin's particular situation at that time (as a city with negative population growth) was evoked by Ungers and Koolhaas as a key element of the project. Nonetheless, the project begins with the definition of the permanent elements of the city: « The first operation of such a project — a Berlin as green archipelago — ought to be the identification and selection of those areas that already have a strong existing entity that deserves to be preserved and reinforced »[38]. The second step is to let the rest of the city be free to change or disappear: « Around the "tuned-up" and "completed" enclaves, the remaining fabric of the city would be allowed to deteriorate and turn slowly into nature »[39].

38
O. M. Ungers, Rem Koolhaas, Peter Riemann, Hans Kollhoff, Arthur Ovaska, *The city in the city. Berlin: a green archipelago*, 1977

39
Ibidem

Why should we define everything? And could we anyway?
The only way architects can work: with limited interventions.

The architect produces a minor portion of global city construction, itself in a process of continuous evolution and renewal. Likewise, we can observe a historical tendency of the city to be defined by a limited number of permanent elements that give it character and a means to function as a whole. Those elements can persist through time while the rest of the city changes without affecting its logic.
Due to their strength and character, these elements of permanence can have a durable — and thus wider — influence on the city. Therefore, we can interrogate the possibility of an architecture focused on limited punctual interventions that are able to influence the city as much as possible.

If the principle of permanency belongs to an established tradition – especially described by Aldo Rossi – at the scale of the city, we can also investigate its application at the scale of the building. The architect does not have full control of construction and even less on the future developments of a building throughout its lifetime. Could the architect develop the identity and the quality of an edifice through a limited number of permanent elements - in the same way that the city is defined through punctual interventions - allowing the rest of the building to evolve without ever damaging the coherence and strength of the whole?

In describing the "Typical plan" in *S,M,L,XL*, Rem Koolhaas warns us of the tragic destiny of our profession : « Architecture is monstrous in the way that each choice leads to the reduction of possibility. It implies a regime of either/or decisions often claustrophobic, even for the architect. All other architecture preempts the future; Typical Plan – by making no

choices – postpones it, keeps it open forever »[40]. Of course, this attitude tackles the functionalist approach. It is with *existenzminimum* that functionalism attained its highest climax and strongest potential but also its saddest destiny. Following the logic of industrial systems, the study of human movement, labor and activities was supposed to create a perfectly adapted environment to support daily human tasks. This path lead to over-determination: being very/too precise, spaces limited the possibility of use in such an intense way that flexibility completely disappeared. Not only could a kitchen not be used for any other purpose, whole buildings were designed to be used in single way. What happens when this way of life/mode of use was no longer current? No option for adaptation had been maintained. Functions proved to be unsuitable as an element of permanence. These observations hold true at the larger scale of the city or territory as well.

This logic leads to the idea that one should define only the necessary, essential elements of architecture. But knowing that every defined element of permanence is limiting the possibilities, their definition should be processed very cautiously.
Of course, to use an architectural metaphor, no roof can be built without a cornerstone. Similarly, some elements need to be fixed in space in order to open possibilities that would otherwise remain conceptual; a state of the widest possibilities yet, useless unachieved potentials.
In this sense, permanence should not merely be considered as a fixed element but as a generator of intelligent change. If permanencies make good anchors, they should also be considered as matts ; permitting the development of new paths. While trying to elaborate a project theory in his book *L'ordre et la règle*, Patrick Mestelan explains : « Le développement de la ville et le dynamisme qui lui est nécessaire ne peuvent ignorer la pérennité pour justifier la pertinence du changement. Inversement, une pérennité n'a de sens que par le changement qu'elle suggère et oriente »[41].

Is the age of sustainability the time for permanence ?

Whereas the 20th century was filled with dreams at the same time than Reyner Banham though of filling buildings with his well-tempered environment, the rise of the 21th century is marked by the consciousness of the limited resources at our disposal.
The industrial revolution has allowed the production of very low cost products at extreme speed. This new type of production, along with other factors, has led to mass consummation, ephemeral use and planned obsolescence.
At a time that raises the question of sustainability, architects can make a difference not only by the use of durable materials and types of

40
Rem Koolhaas, Bruce Mau, et O.M.A., *S,M,L,XL*, 2d ed., New York, N.Y, Monacelli Press, 1998

41
Patrick Mestelan, *L'ordre et la règle: vers une théorie du projet d'architecture*, Lausanne, Presses Polytechnique et Univ. Romandes, 2005

construction, but also by creating durable designs and concepts. Buildings are becoming outdated not only because of the ageing materials and technologies but also because their functions are changing while their design is not adaptable and their aesthetics are seen as out of fashion.
Whereas durability often supports the infinite recycling of products, the approach of environmental permanence is a strong alternative which propose a balance between the permanent and the transient. As stated previously, permanence is a necessary element of continuity for the construction of societies and their surroundings, but it is also a necessary core for the transient. Being a strong catalyst of change, it is an inevitable part of the cycles praised by durability.

The epoch of the incessant and the necessity for continuity

As Baudelaire's *Le Cygne* regrets « The old Paris is no more; the form of a city changes more quickly, alas, than the heart of a mortal »[42]. Already in the mid-19th century it was said that things were changing faster than a lifetime.
According to Vittorio Gregotti, we are living at the « the epoch of the incessant », of a « continuous and indistinct change »[43].
Indeed, our epoch is driven by numerous changes which contribute to considerably shorten the time lapse that could be deemed current. In this sense, Hermann Lübbe[44] speaks of a shortening of the present. Things become obsolete before they had time to become familiar or accepted. As Olivier Thill noted in *San Rocco 4*, for the past centuries, the lifespan of architectural theories/concepts/styles has gotten shorter and shorter partially because of the increasing speed of transmission of the information and the over communication of medias. « While the Rococo and Classicism "survived" for periods of fifty or even a hundred years, the lifespan of 20th-century concepts like art nouveau, functionalism, art deco, brutalism, classical postmodernism or deconstructivism has not been longer than a decade or two. In the even faster-paced digital age, projects can be « conceptually strong » during the design stage but, because of the long development process, already old-fashioned when the project is realized just a couple of years later »[45].
Could this lack of stability be remediated by elements of continuity? By elements of permanence at the scale of the territory, cities, or buildings? Society and politic tend toward the ephemeral because it is focused on the problems of the present; it aims to be as efficient as possible; here and now. However, architecture tends toward the permanent and not the ephemeral; therefore, it is by nature not based on the efficiency of the instant, but rather on duration and continuity. Its usability stretches on long terms; away from the immediacy of contemporaneity. In this sense, as Luigi Snozzi believes[46], architecture has the potential to hold a position

42
Charles Baudelaire, *Les fleurs du mal*, Le Cygne, Paris, 1857

43
Vittorio Gregotti, *L'architettura nell'epoca dell'incessante*, 1. ed., Roma, Laterza, 2006

44
Hermann Lübbe, *Geschichtsphilosophie. Verbliebene Funktionen*, 1993

45
Olivier Thill, *San Rocco 4, FUCK CONCEPTS! CONTEXT!*, 2012

46
Luigi Snozzi et Fabio Merlini, *L'architecture inefficiente*, Cosa Mentale, 2016, p.42

of resistance in the actual society. While in the past, constructing for the city only required to answer the present conditions to create durable designs, the very fast path of the 20th century requires to project through the consideration of the long terms of the metropole.

Should we build more history?

The typical European contemporary city has been developed around old city centers that have been considered the core and the identity of the people who lived there. As we have seen before, this core is necessary to form the cultural base, the history and the memory that gives an identity to the population of cities. Buildings such as the cathedral of Notre-Dame or the Eiffel Tower in Paris – along with many parts of the old urban fabric – are crucial to defining the city and its citizens. Since the Industrial Revolution led to rural flight and the urbanization of life style, cities have continued to grow larger and larger. But while the cities are getting bigger, their old center is limited and not expanding. Thus, the same bit of history is being shared by more and more people: somehow, we could say that the ratio of culture and memory per person is getting smaller and smaller.

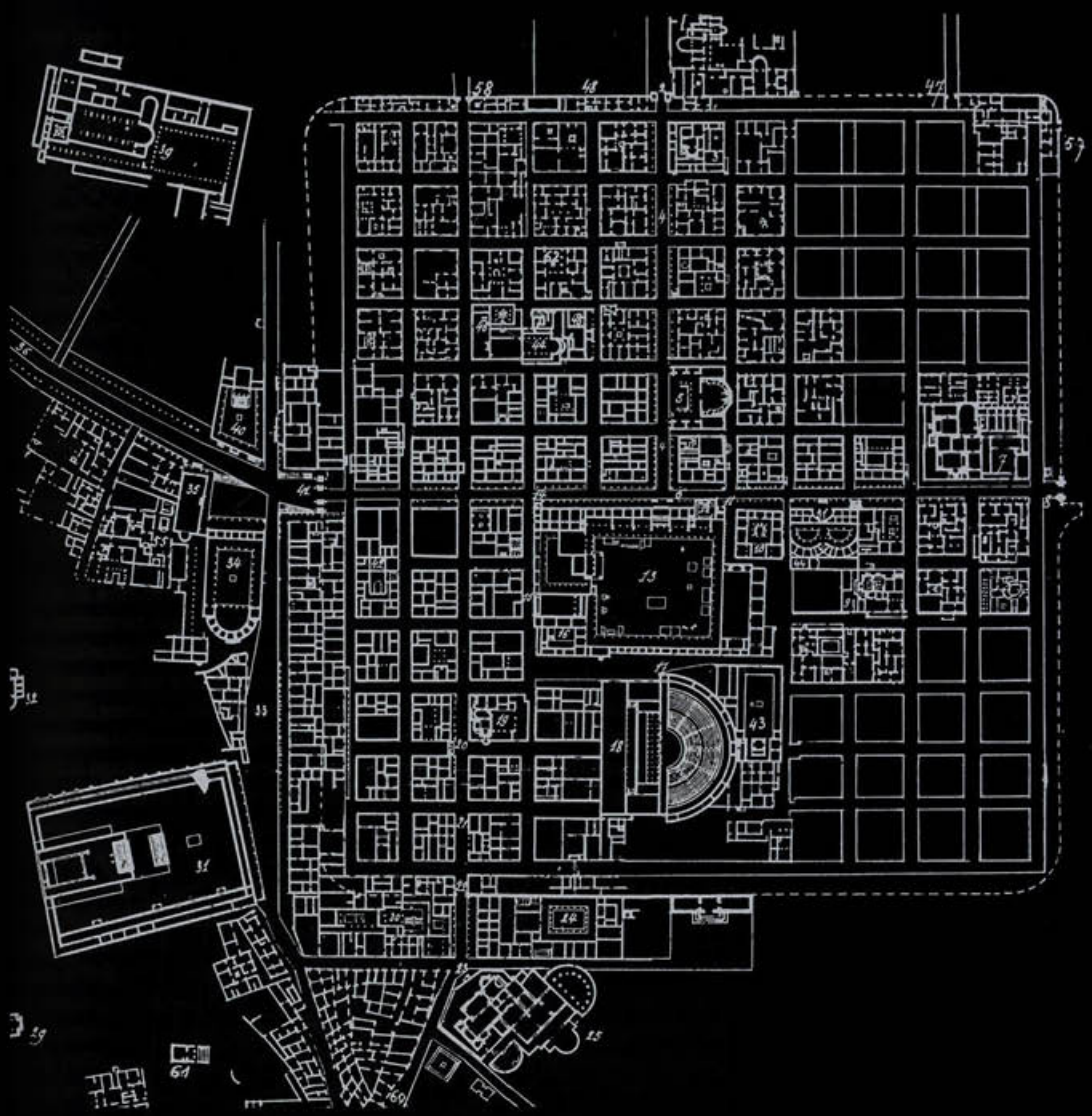
At the same time, it is estimated that the total number of humans who have ever lived on earth is 108 billion beings over a period of approximatively 300 000 years. While we are currently 7 billion living humans, it is interesting to realize that it corresponds to 6.5% of the humans who have ever been born throughout history. This logic leads to the idea that the contemporary history is denser than it was in the past, yet it also means that the ratio of culture and memory per person is getting smaller.

Source, Polulation Reference Bureau estimates

Considering these factors, one may conclude that we need to build more history. Can this be seen in relation to the current preoccupation of the icon building? Of course – as we explained before – building icons is only one of the way to produce centers of identity for the evolution of the city and the definition of society. But are contemporary icons really made to be "efficient" permanence with a potential to influence their environment? Following this logic, the question is not « should we build icons? », but « how should we build icons? ». Or, can we learn to build architecture that carries a promise of permanence for the city, that which provides cores around which society may develop once again?

How to build permanence?

UTILITAS



Plan–ning the permanent and the transient : *Utilitas*

If the construction quality of a building would first appear to be the main characteristic needed for a permanent architecture, it is easy to realize that the first reason to destruct a building would be the dissipation of its utility. To maintain the usefulness of a building, architecture must allow old and new programs to function. For that reason, many strategies – balancing the permanent and transient elements of architecture – have been developed in order to orient various possibilities of adaptations in buildings and cities.

The definition of the permanent and the transient has to do with planning and space. It is the abstract relation between materialization and void; it is the creation of an inviting frame for human activities. Olivier Thill suggested in *San Rocco 11* that out of the three pillars of the Vitruvian triad, space — the logical extension of *utilitas* —, has the strongest potential of universality over *firmitas* and *venustas*. « If style is in large part based on personal taste and fashion, and if structure and materials are mainly dependent upon local building traditions and resources, then space might be the only thing in architecture that has the potential to present universal and relatively eternal values, as Fischer von Erlach proposed in his *Entwurff*. From this perspective, space could be considered the "smallest common denominator" of a global architecture and the most solid element of the art of building. If — as in Bramante's case — the spatial concept is made dominant by being simultaneously magnificent and flexible, the material and construction, execution and detailing, can only be secondary elements of architecture. A strong concept — let's say, a universal one of the kind Bramante proposed — can appear in different forms in different times and can be variously expressed, as Ungers demonstrated in his book *Die Thematisierung der Architektur*[47].»[48]

Defining the spatial relation between permanent materialization and the transient void is the central difficulty of this approach. Indeed, it is not a coincidence that many among the current generation of practicing architects have an obsession with finding the common denominators in the plans of history. Kersten Geers's article in San Rocco 2[49] highlights his fascination for the unchanged timeless plans described by the quotation of John Helduk: « When I examine his plans it occurs to me that, throughout the history of architecture, plans have changed the least [...] The plan returns architecture to a state of timelessness. The plan has no need for clothes or ornamentation; it carries with it an inevitability. The plan is sacred and inviolate. »[50]

47
Oswald Mathias Ungers, *Die Thematisierung der Architektur*, Walter A. Noebel, 1983

48
Olivier Thill, *Article in San Rocco 11, HAPPY BIRTHDAY, BRAMANTE!*, 2015

49
Kersten Geers, *Article in San Rocco 1, ISLANDS*, 2011

50
Stanley Tigerman, *Stanley Tigerman: buildings and projects, 1966-1989*, New York, Rizzoli, 1989. Afterword of John Helduk

With these considerations, we could say that this reflection has the strongest importance in regards to permanence over the two following ones. As a confirmation of this opinion, Thill explains that it is precisely the fact that the architecture of Bramante was based on the understanding of buildings as voids that made his atemporal architecture last through centuries without losing their qualities. He explains that Bramante's « strategy — when seen through contemporary eyes — always seems the same: framing the largest void feasible; enclosing the vastest space possible »[51]. For Olivier Thill, « Bramante's work is based on a conscious reading of Roman architectural monuments like amphitheaters, baths, basilicas and aqueducts as infrastructural "space machines". He realized that Roman architecture had been primarily made not to create beauty, but to stimulate and facilitate public life »[52]. In this sense, « Bramante seems to have understood Roman architecture as architecture designed for activity, and so he built various spaces open to different kind of uses. As a result, his Cortile del Belvedere could be used for jousting (as seen in the etching published by Lafréry in 1565), Sant'Ambrogio could be perfectly adapted for use by crowds of contemporary Milanese students and even today the piazzas in Loreto and Vigevano are used for a range of different activities »[53].

51
Olivier Thill, *Article in San Rocco 11, HAPPY BIRTHDAY, BRAMANTE!*, 2015

52
Ibidem

53
Ibidem

The "amount" of determinism and flexibility that the architect decides to impose is a key element to the understanding of architecture. At one edge of the spectrum lies the powerful permanence of the massive construction — the "poché" — and on the other the blank page of the void. This void is the primary element of architecture; the final offering of the architect to the user; his ultimate concern. While some architects believed that they could separate the programs which would be permanent from those which would change — which lead to concepts such as the served and servant spaces of Louis Kahn —, others accepted that little could be predicted and limited the materialization of permanent elements to the architectural structure, or even to abstract grids. The level to which architects thought the evolutions could be predicted and defined also governed the relations that would emerge between the permanent and the transient. If in all the strategies studied the various elements took different materiality, we will still try in this analyze to focus on the relations between the defined elements rather than their physicality. Of course, materiality is an important factor which will be addressed later, but here we hope that the abstraction will reveal new readings through the focus on relationships.

The definition of punctual permanent elements; as organizer of the void (the primary program)

Planning the permanent and the transient through the definition of punctual permanent elements implies the clear separation of different programs into separate categories. In this approach, and at any scale, the difference between the permanent and the transient is often synonymous with the difference between servant and served space.

Kahn's interpretation of the "Servant and the Served space" first emerged from the desire to hide the functions of the mechanics to avoid spoiling the space. As he states in *The Notebooks and Drawings of Louis I. Kahn*: « I do not like ducts; I do not like pipes. I hate them really thoroughly, but because I hate them so thoroughly, I feel they have to be given their place. If I just hated them and took no care, I think they would invade the building and completely destroy it »[54]. However, the servant spaces of Kahn quickly began to contain more than the mechanical elements of a building but included all secondary functions that would otherwise spoil the primary spaces of his architecture. In his first use of this concept, Kahn considered the columns of the Trenton Bath as an opportunity to be hollowed and contain a variety of functions including bathrooms and storage. If Kahn's servant space often presents a very permanent materiality it is because he chose to merge it with the structure in order to maximize the efficiency of his design; it is not an inevitable corollary. In the future, the definition of servant and served space became an essential starting point for his work and the work of many other architects.

54
Louis Isadore Kahn, *The Notebooks and Drawings of Louis I. Kahn*, 1962

When the separation of the two spaces occurs, a hierarchy is established. In this chapter, while talking about the possibility to define punctual permanent elements, we are looking at the possibility of secondary spaces as systems for the organization of the primary spaces.

In 1961-1964, O. M. Ungers made a proposal for the Neue Stadt Housing Complex of Köln which made use of the concept of servant and served space. In his project, the servant space — called « the room » — is simply defined as private space and is materialized as a closed volume. It is a space that incorporates all the elements of the housing which are not considered to belong to the main living areas. A strong dialectic is implemented between the room and its relation to the whole. Here, the generating element of the whole is the private room, enclosed by a structural wall and extruded at every floor through the height of the building. As servant spaces, the ensemble of rooms is arranged to produce a leftover space; therefore, the room defines negatively the open space of the living room. While in the closed volumes of the rooms, the elements are defined very

precisely and permanently, the leftover space is a place of flexibility that exists to welcome the movements of daily life.
In this project, the fact that Ungers includes the bedrooms and the kitchen as precisely defined servant spaces leads to a high determinism and reduces the flexibility of the building to a minimum. One can consider that this decision came from Ungers' belief that he could predict that no changes would occur in the programs. In this sense, from the belief that the program of housing is relatively stable and permanent, a design emerged that determined most of the elements and left little space for change.

In a similar way, OMA's proposal for the Universal Headquarters building was made of large rectangular platforms that would be pierced by four towers. Even when materialized, the mass of the four towers is first of all conceptual, and represented by Koolhaas as so. The main platform supports the primary program of the building — the offices — while the four towers regroup all other programs. The towers all respectively present their own activities; one for the meeting rooms; one for the management teams; one for circulation; and one for the laboratories. They are the punctual permanent elements that organize the free plan of the « generic floor plate »[55]. Koolhaas actually highlighted the flexible character of the platform by showing a series of five office layout variations; expressing the platform as the empty receptacle of the possible, in opposition to the highly-determined towers. Again, it is important to observe the hierarchy

55
OMa+uNIVERSAL

Oswald Mathias Ungers, *Proposal for Neue Stadt Housing complex,* Cologne, 1961-1964. The city as a « City Made of Rooms ». A city made of « negatives and positives ».

established here: similar to Ungers' project, the primary program of the office is defined by the secondary permanent spaces. However, the proportion of free space to punctual fixed elements is much higher, and therefore, provides much more flexibility.

For Neue Stadt project, Ungers developed the idea of a « City Made of Rooms ». As the title of his later publication *The city in the city. Berlin: a Green Archipelago*[56] explicitly declares; he explored with the same method the possibility that the city could be defined by a set of punctual elements. In this sense, for Ungers an organizational strategy based on punctual permanent elements appears to be applicable at any scale, as a fractal system of relations. Indeed, we can observe that this is usually the case in most cities which developed spontaneously through history. It is often difficult to detect a general plan giving a clear direction to the development of the city as a whole, whereas there is a historical tendency of the city to be defined by a limited number of elements; giving it character and a way

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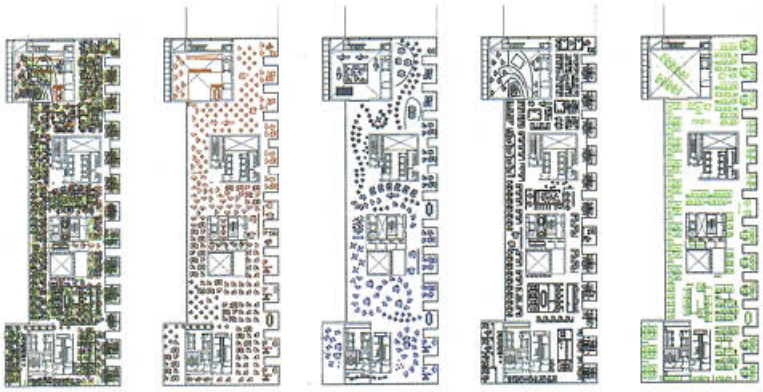
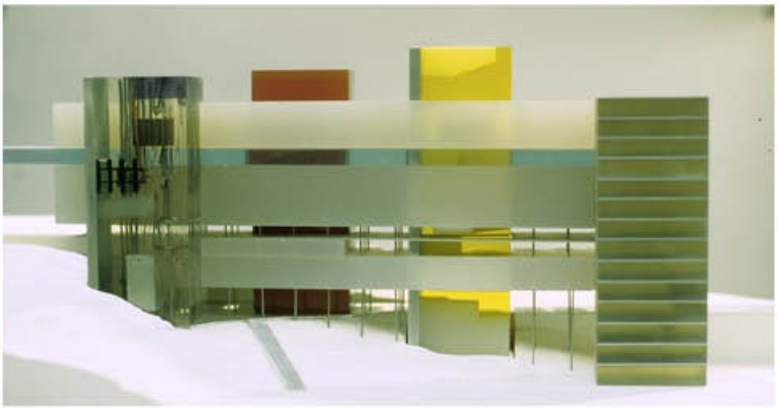
O. M. Ungers, Rem Koolhaas, Peter Riemann, Hans Kollhoff, Arthur Ovaska, *The city in the city. Berlin: a green archipelago*, 1977

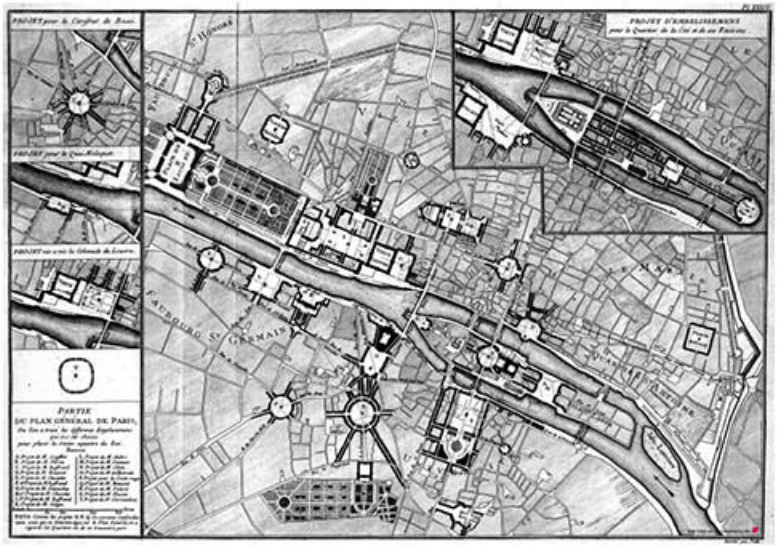


Rem Koohlaas, *Project for Universal headquarter*, 1996



Rem Koohlaas, *Project for Universal headquarter*, 1996

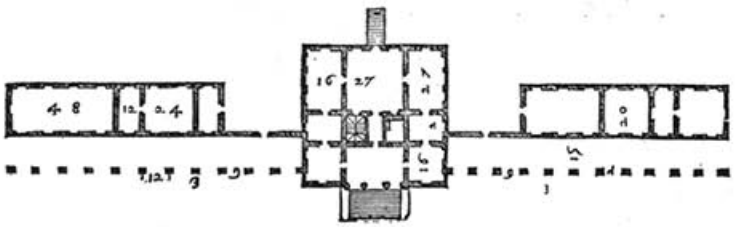
to function as a whole. A classic example of this system can be seen in the general plan of Paris made by Pierre Patte in 1765; the main squares of Paris are highlighted in order to show their capacity to organize and define the urban fabric of the city between them. The imposed hierarchy is again the same; the squares are secondary programs which organize the primary programs of the city. It is interesting to note that the permanence of the squares is not determined by their materiality. The squares are voids; they are made of a common consensus to preserve a part of the city unbuilt.



Pierre Patte, *Paris general plan,* Carving regular spaces within the intricacy of the city, 1765

To complete the analyzed vision here, it seems necessary to highlight the scale of the territory after having addressed the scales of the building and the city. As Pier Vittorio Aureli explains in *The Possibility of an Absolute Architecture*, the 16th century was a period of crisis for the Serenissima Republic of Venice. Whereas its influence had grown since the beginning of the 8th century due to maritime commerce, the War of the League of Cambrai combined with the discovery of the New World created an important shift in the maritime traffic. « Their response consisted of a complex series of strategic manoeuvres, all of them predicated on a shift of Venice's economic basis from the sea to the land—from maritime commerce to agriculture. Within this transfer, the ground or *terra firma* suddenly took on the status of a territorial project [...] Venice turned inward, toward its territorial lands—a (re)discovery of its more earthly influence that must be seen as the defining context for Palladio's unprecedented succession of countryside villas, each commissioned by patricians of the Serenissima regime, and which would ultimately give

Andrea Palladio, *Villa Emo,*
The palladian villa as a tool to control the territory, 1570



Venice's project of duration its most enduring historical form »[57]. In this context, the project of the territory — its agricultural value — is the primary program here; it is the *raison d'ëtre* of the Palladian Villa. « In all of his work, the encircling territory is not a passive ground waiting to be activated by the imposition of a figure, but a specific site made of existing natural and artificial elements of which the object—the villa—becomes a theatrical frame. In this sense, Palladio's villas are not simply objects enclosed within a reconstructed context [...], but are specific objects that frame and redefine the existing landscape [...] »[58]. Thus, the territory is not only defined by a planning imposition, but rather organized by the perspective of the punctual villas in the landscape. The Villa Emo (1555-1565), with its simple and long « flanking *barchesse* »[59], defines axis to frame and structure the territory. Using a continuous row of loggia on one side of the building and a series of windows on the other, Palladio establishes a clear front and back in the reading of the territory. Again, the villas can be seen as permanent punctual elements that organize the primary program of the landscape.

57
Pier Vittorio Aureli, *The possibility of an absolute architecture*, Cambridge, Mass, MIT Press, 2011, p.62

58
Ibidem, p.64

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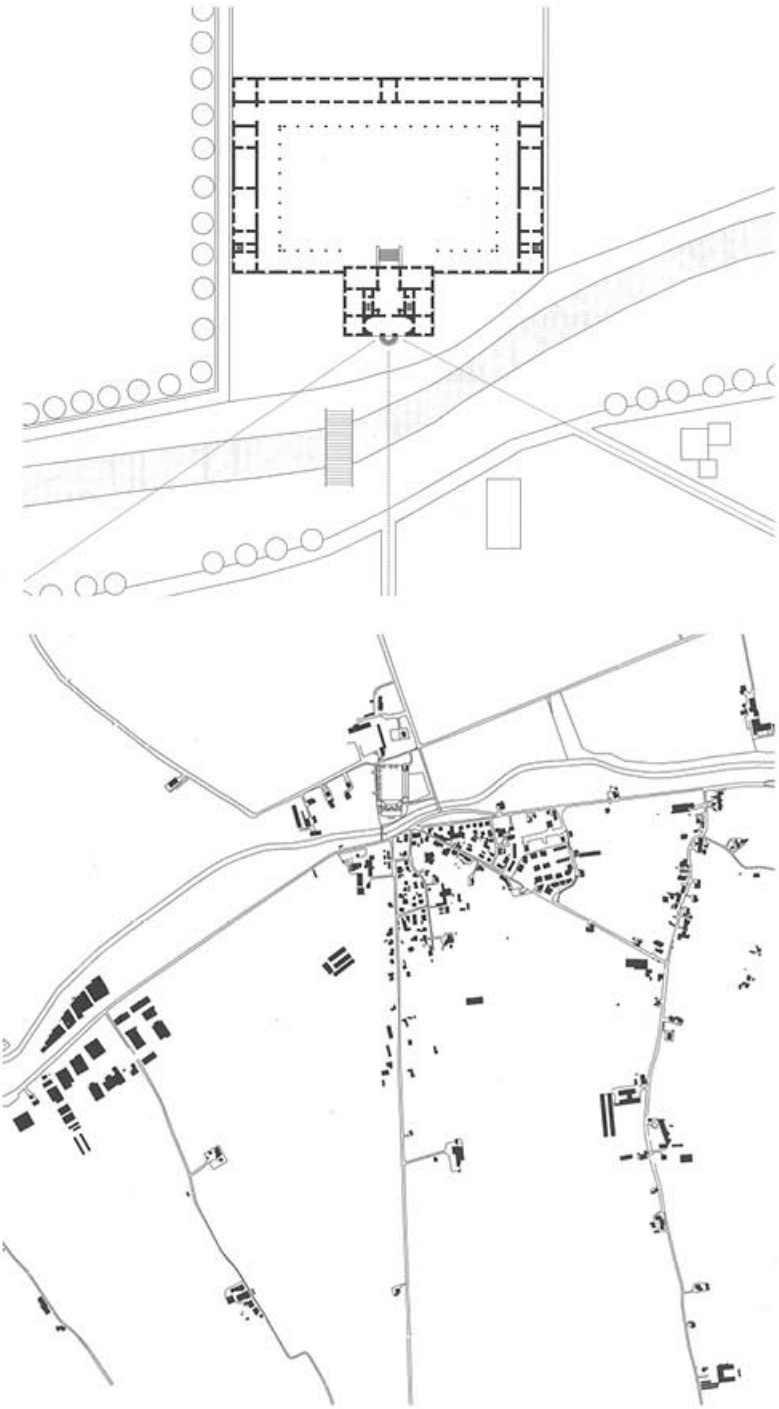
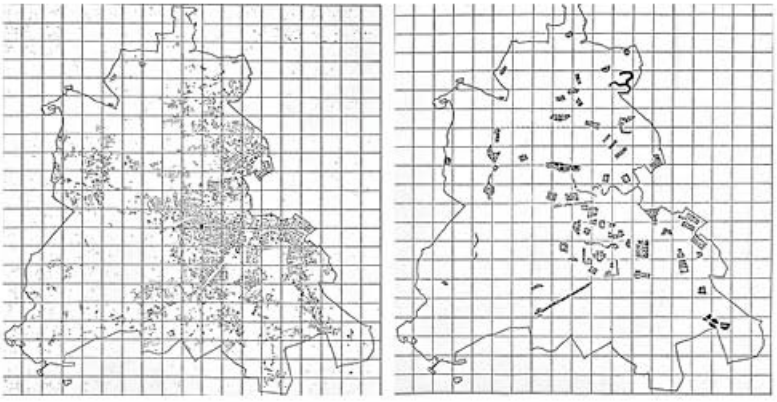
Ibidem, p.64

Andrea Palladio, *Villa Pisani,*
The palladian villa as a tool to control the territory, 1570

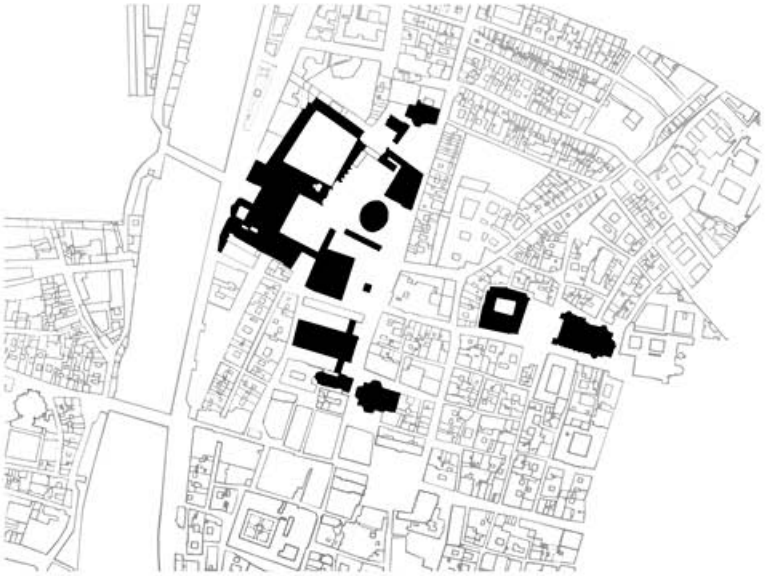


Point Supreme, *Archipelago Cities,* Athens and the definition of the city by a limited number of influencial "Islands", 2011



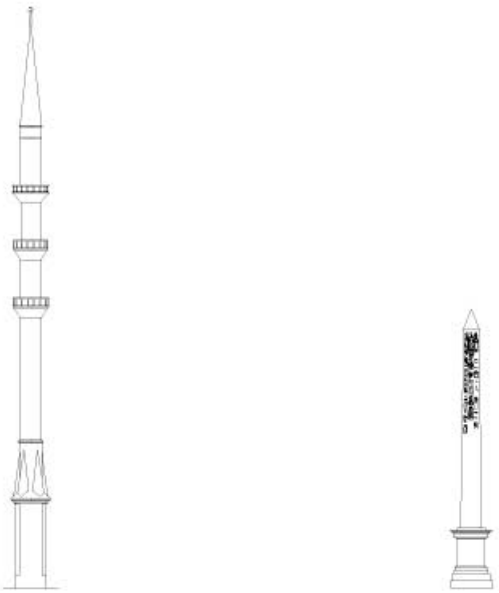
O.M. Ungers, R. Koolhaas, H. Kollhoff, *The City within the City – Berlin as a Green Archipelago,* 1977

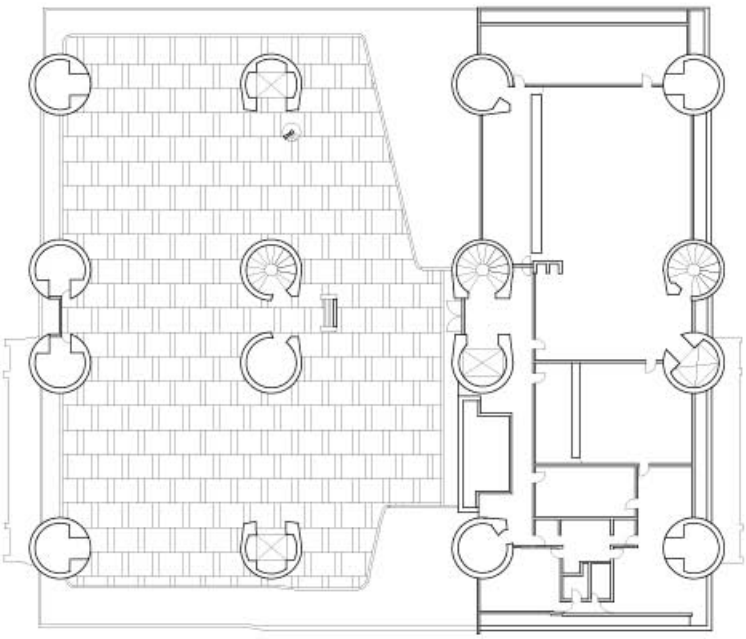
Aldo Rossi, *Project for the theater Paganini,* 1964



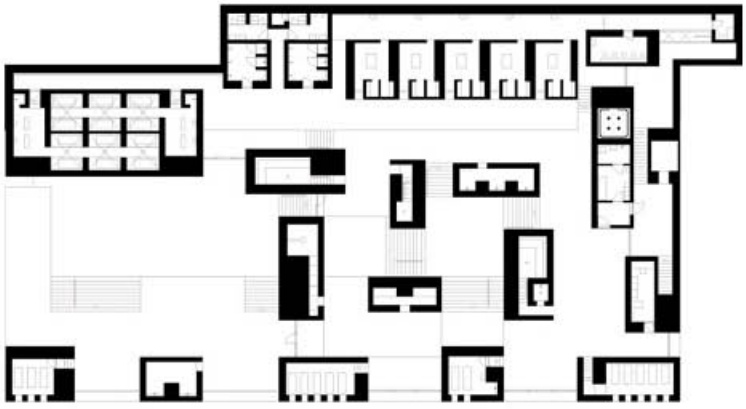
Minaret of Sehzad Mosque, 1548

Ramses II Obelisk, 10th century BC



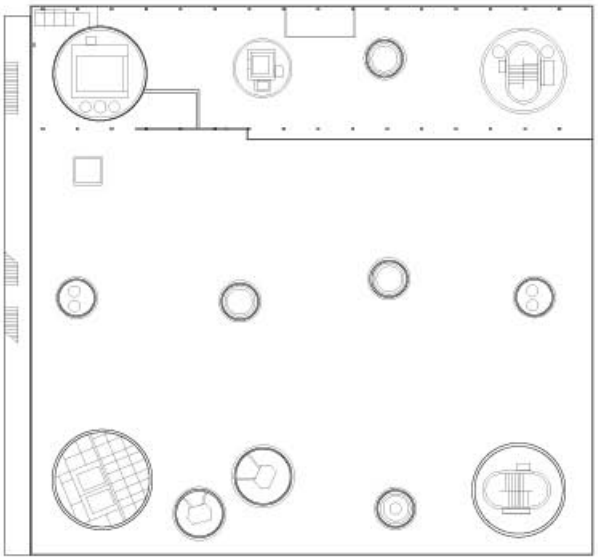


Kenzo Tange, *Yamanashi Communication Center,* Japan, 1966

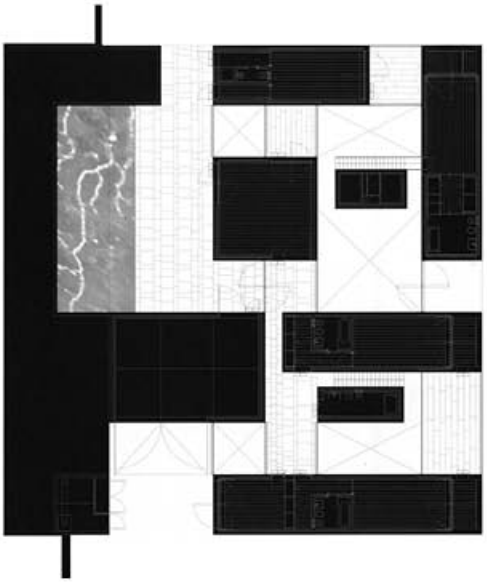


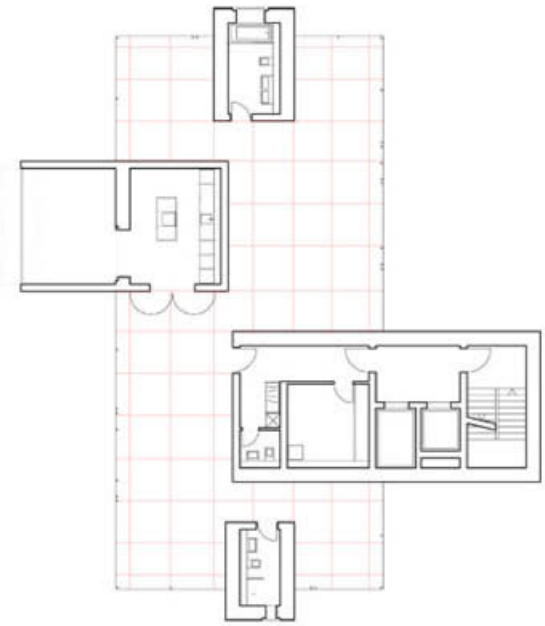
Peter Zumthor, *Thermes de Vals*, Switzerland, 1996

Toyo Ito, *Sendai Mediatheque*, Sendai, Japan 2001

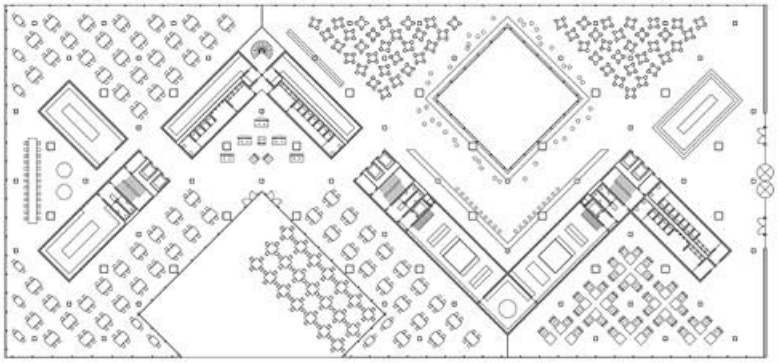


Aires Mateus, *Casa na serra de Mira de Aire, first floor plan,* 2002



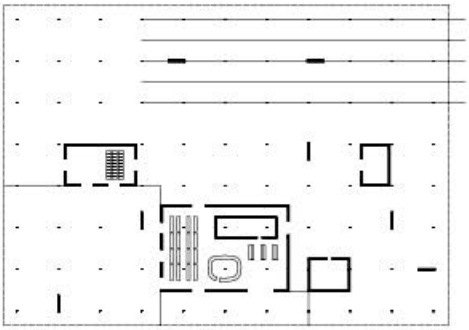


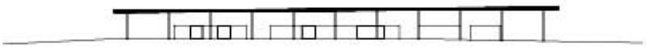
E2A, *High Rise for London, Theoritical project*



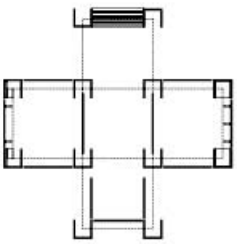
Something Fantastic, *THE ICCC*, Berlin

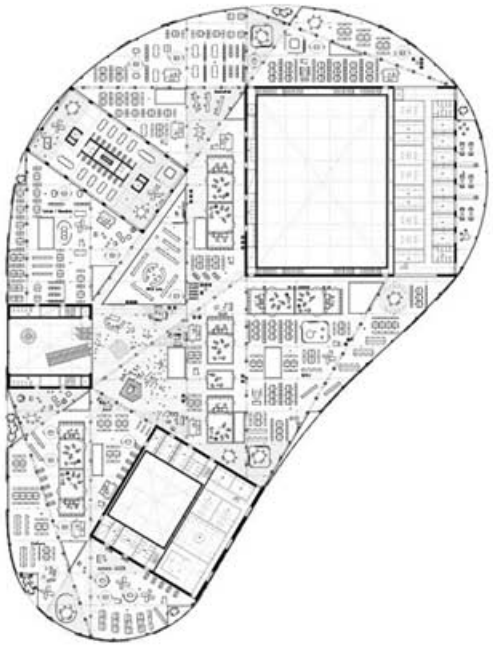
SANAA, *Naoshima ferry terminal,* Naoshima, Japan, 2006





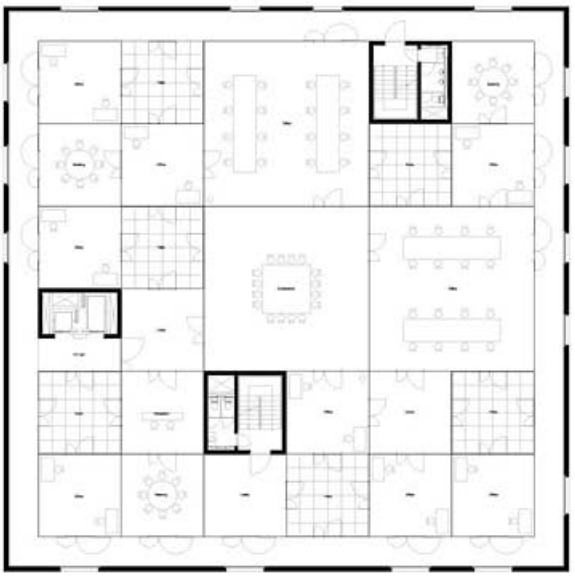
Louis Kahn, *Trenton Bath*, New Jersey, United States, 1955

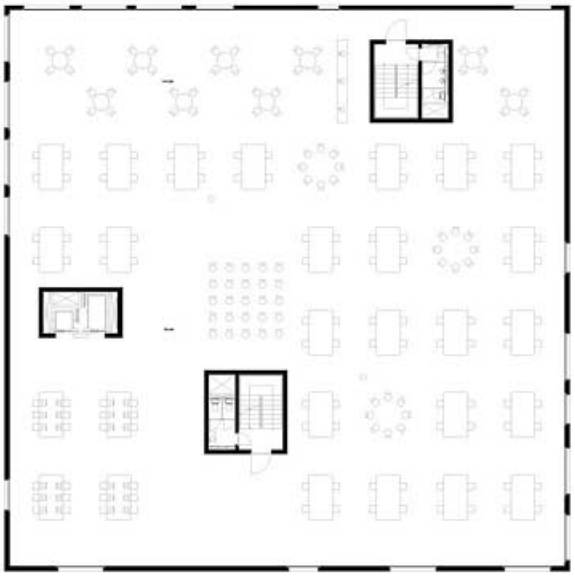




Office KGDVS, *Campus RTS, EPFL*, Switzerland, 2014

SANAA, *Zollverein school of Management and Design*, Germany, 2006



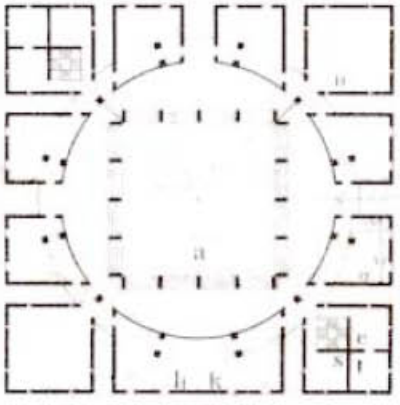


The definition of the void (primary program); as organizer of the secondary programs

The definition of a main room (or element) gathering the essence of the project

The separation in two categories of different temporality of the so-called servant and served space is still the crucial strategy to provide the possibility to adapt to the future needs of the project here. However, the prevalence of the primary program induces the organization of the secondary elements according to its structure and inverses the hierarchical relation exposed in the previous chapter.

Starting in 1962, Kahn designed numerous versions for the project of the First Unitarian Church of Rochester before its completion in 1969. The concept that he established clearly stated the superior importance of the space of the church over the spaces of the school; the large room would occupy the center of the project and unify all the other programs around it. The ambulatory, the classes, the offices, the library, along with many other secondary spaces would be entirely structured by their relation to the spiritual heart of the church. It is impressive to observe that the clarity of this relation was so high that the evolution of the design through the process never really changed anything important in the project; the relations of the parts to the whole remained the same, and the essence of the project was kept intact. The secondary programs moved all around the main space of the church in various combinations without damaging the vision of the whole; modifications affected minor utilitarian elements but not their ways to be used. Therefore, the project is very far from the Albertian ideal of a project where nothing could be neither added nor removed; on the contrary its strength comes from its possibility to change without any loss of quality. Even if the materiality — concrete and bricks

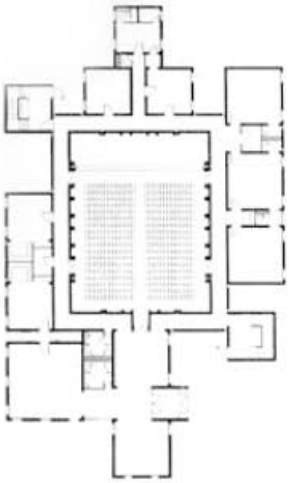


Louis Kahn, *First Unitarian Church, Rochester*, Sketch Design phase, 1962-69

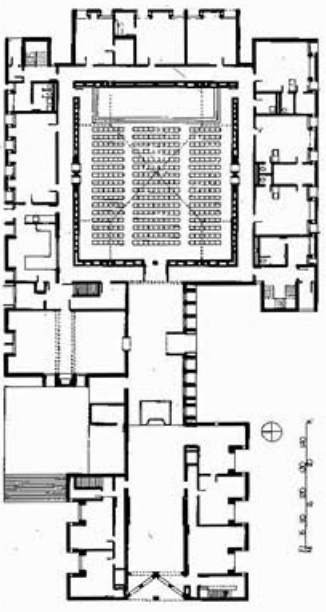
Louis Kahn, *First Unitarian Church, Rochester*, Design phase, 1962-69

— of all the elements in the project is very permanent, such a flexibility during the design phase also foresees a great potential flexibility for its future evolution. Any secondary space could change in program or even shape without affecting its relation to the whole and therefore without damaging the essence of the building.

In the case of the Unitarian Church, the project is gathered around a unique central room, however the same method can be applied with numerous primary spaces, as in the Richard Medical Research Laboratories of Philadelphia. The project constructed in 1965 shows/demonstrates a clear approach to the concept of served and servant spaces. In this case, Kahn applied the concept in both the section and the plan. Every precast concrete ceiling was designed to offer the possibility of incorporating various technical elements while cores surrounded the empty platform of the primary program. The cores are used for secondary programs and technical elements such as circulation, bathrooms and ventilation shafts (important in a laboratory). It is very important to note that here, the cores are independent from the structures and could theoretically be removed. The permanency here is not about materiality, but rather about the separation of elements to create flexibility and therefore establish elements of permanence in the building. As in the Unitarian Church, the secondary elements present various forms and could take any shape, support any program, or even be removed without damaging the relation of the parts to the whole.

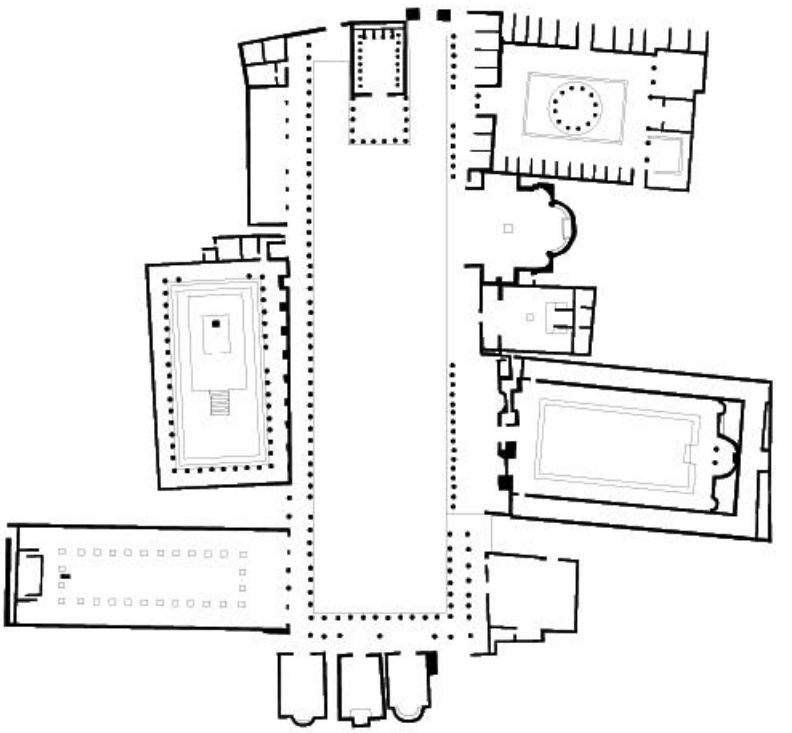


Louis Kahn, *First Unitarian Church, Rochester*, Design phase, intermediate project, 1962-69



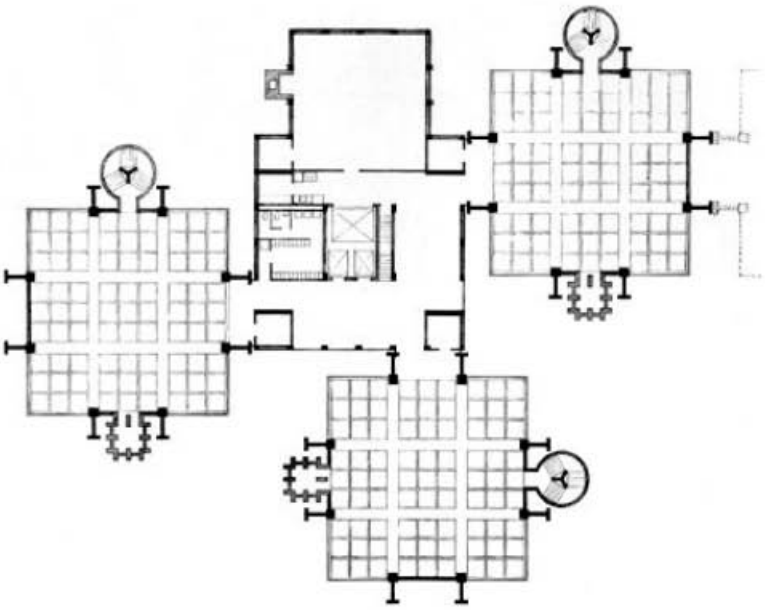
Louis Kahn, *First Unitarian Church, Rochester*, Final project, 1962-69

As the fractal vision of Ungers' *City in the City* indicated, here too the same scheme can be applied at different scales. In the Forum of Pompeii, the central void is to the surrounding buildings as the central room is to the secondary spaces of the Unitarian Church. The void of the forum is the gathering element which gives sense and order to the whole. Even if it is materialized by nothing more than thin air, it is the most permanent element of the whole and its hierarchical domination over the buildings which mark its perimeter makes it a real catalyst of possible evolution. Thanks to its stability, the surrounding buildings could change or be replaced without modifying the quintessence of the whole. Such an approach seems to possess a strong potential regarding the possibility to work with the concept of permanency in architecture.

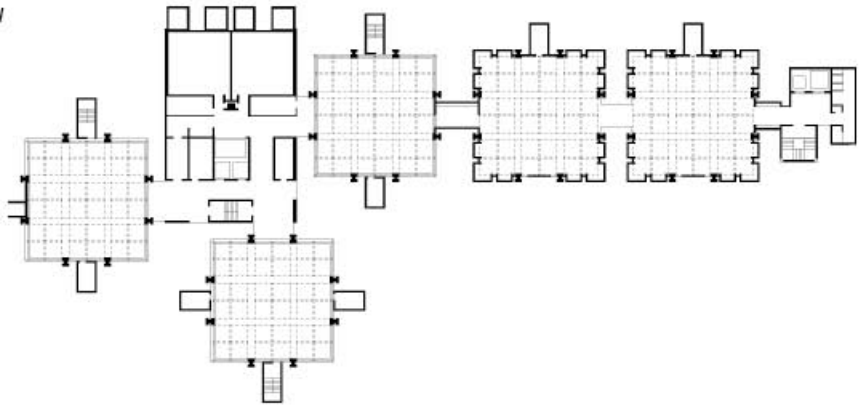


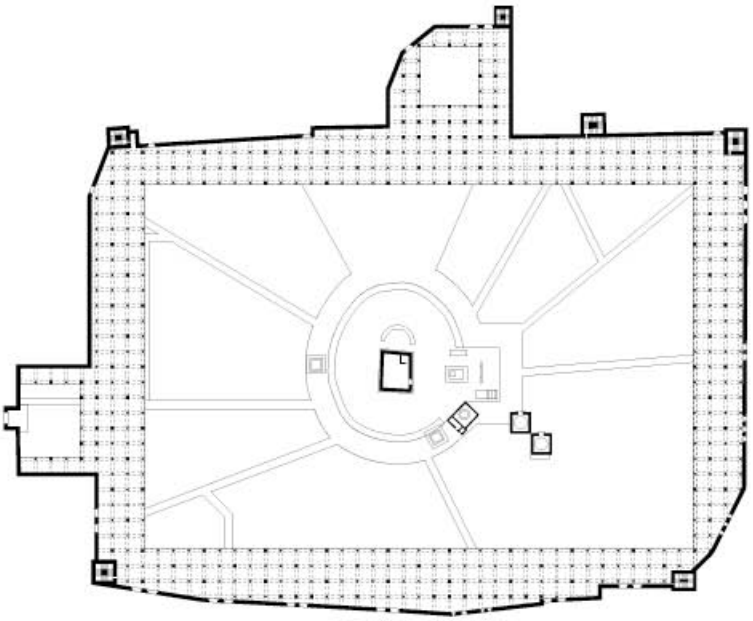
Forum, Pompei, -100 BC

Louis Kahn, *Richards Medical Research Laboratories, Philadelphia*, 1965
(Intermediate project)

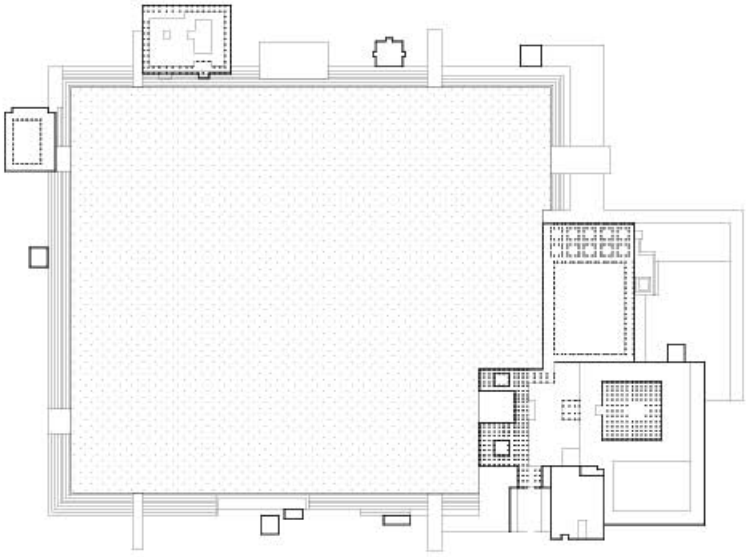


Louis Kahn, *Richards Medical Research Laboratories, Philadelphia*, 1965
(Built project)



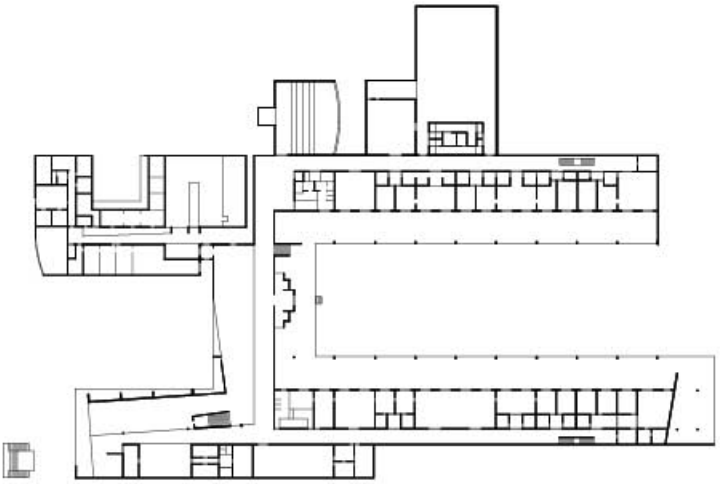


Plan du temple de la Mecque nommé El Haram, Saudi Arabia

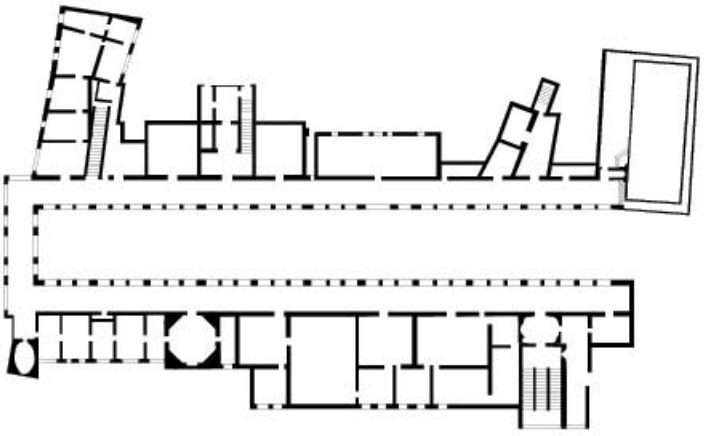


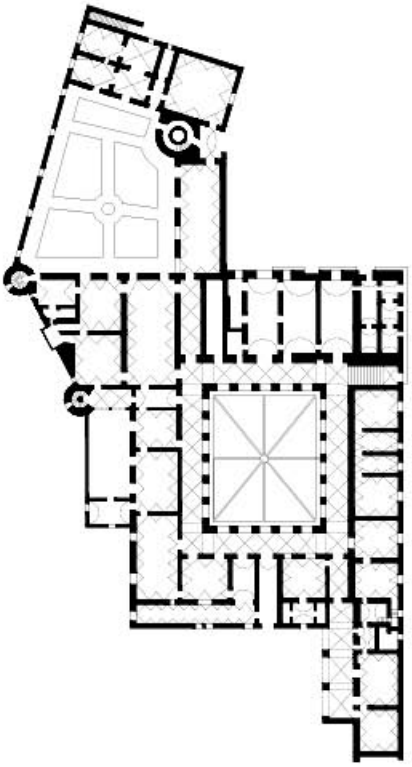
Sarkhej Roza, Ahmedabad, India, 1445-1451

Alvaro Siza, *Teachers' Training Center*, Setubal, Portugal, 1986-94

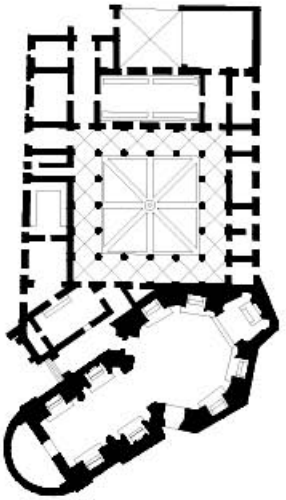


Giorgio Vasari, *Galleria degli Uffizi,* Florence, Italy, 1781



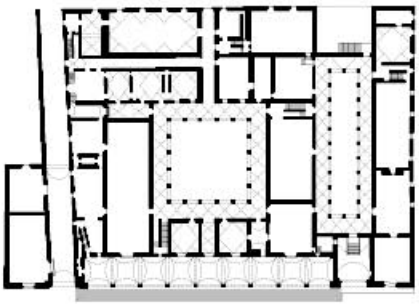


Luciano Laurana, *Palazzo Ducal*, Urbino, Italy, 1482

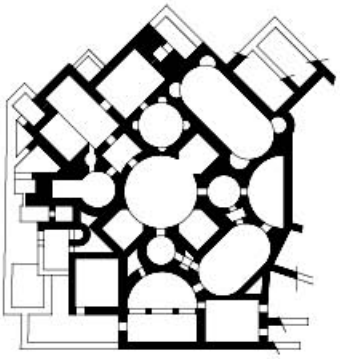


Donato Bramante, *Santa Maria della Pace*, Roma, Italy, 1656

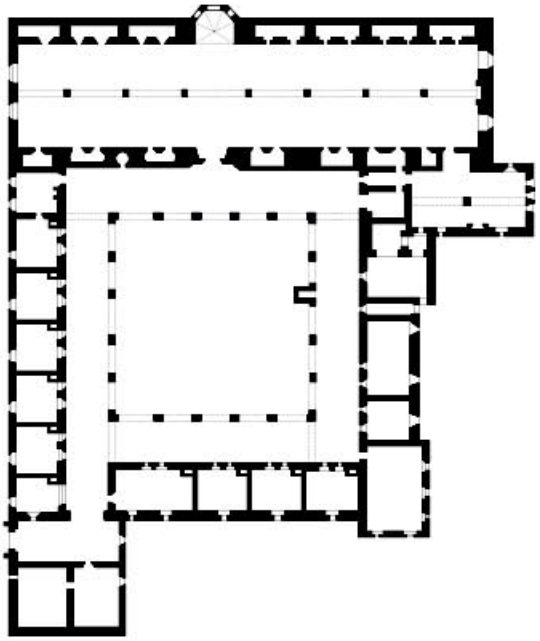
Brunelleschi, *Spedale degli innocenti*, Florence, Italy, 1424-63

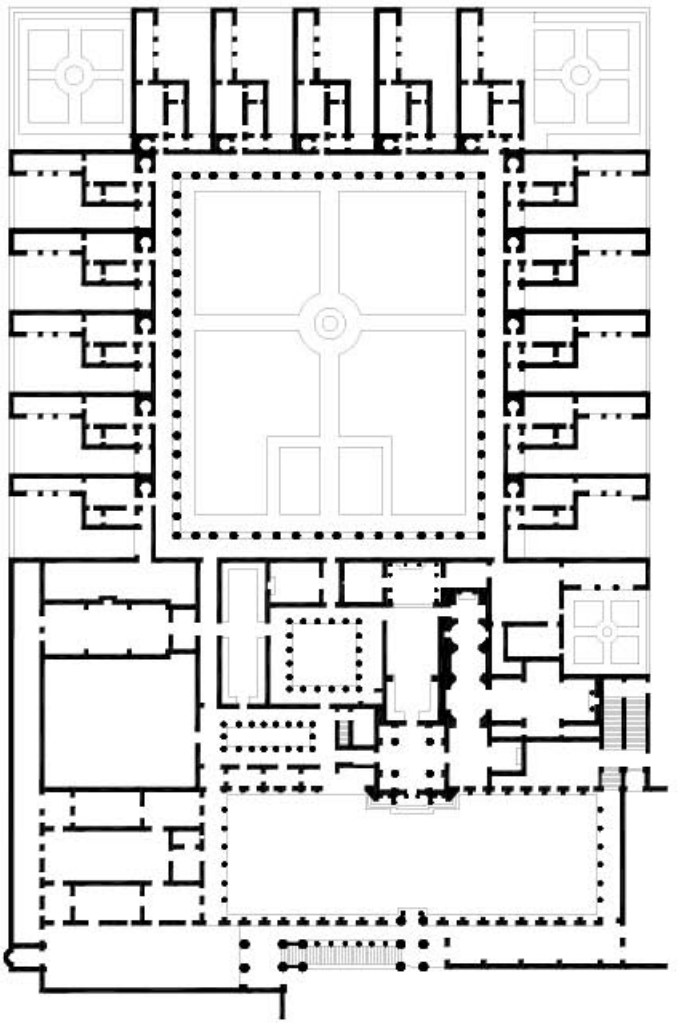


Thermal bath, Thyna, Tunisia



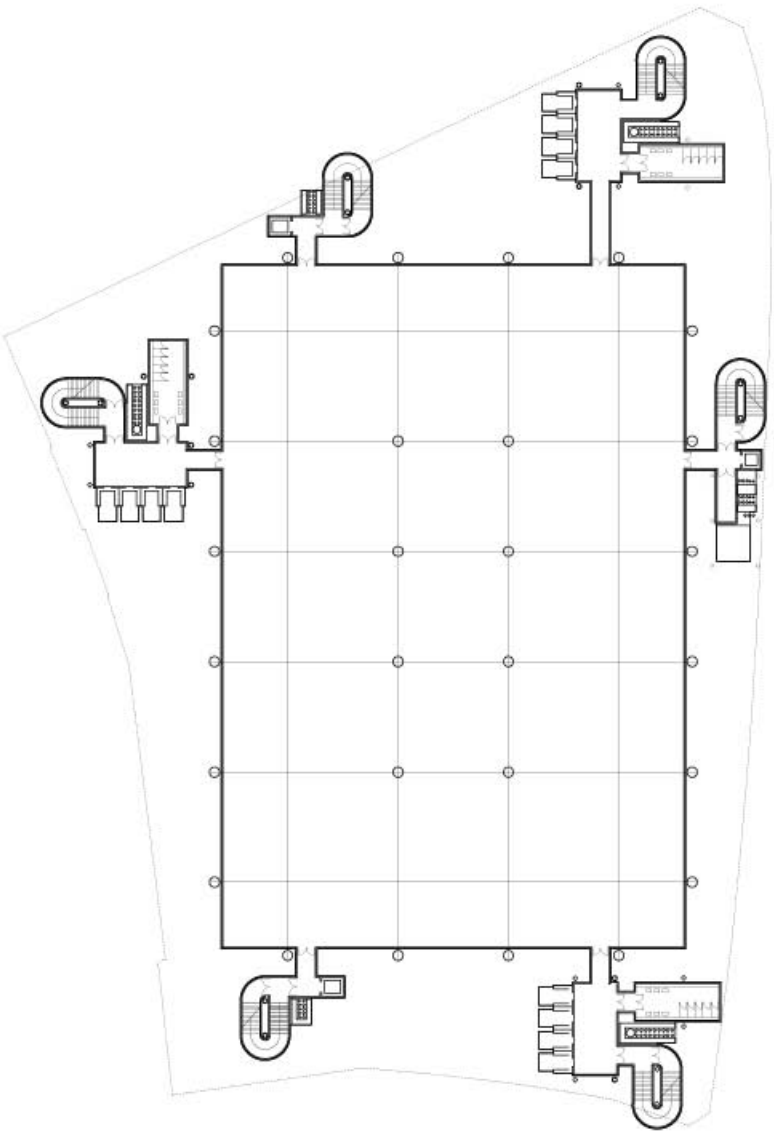
Johanniter hospital, Rhodos, Greece, 1440-89 - 1823

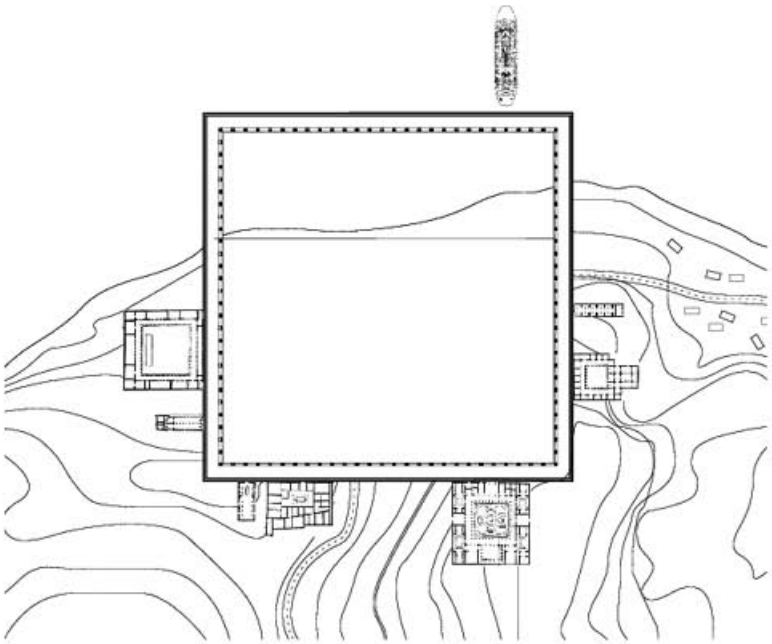




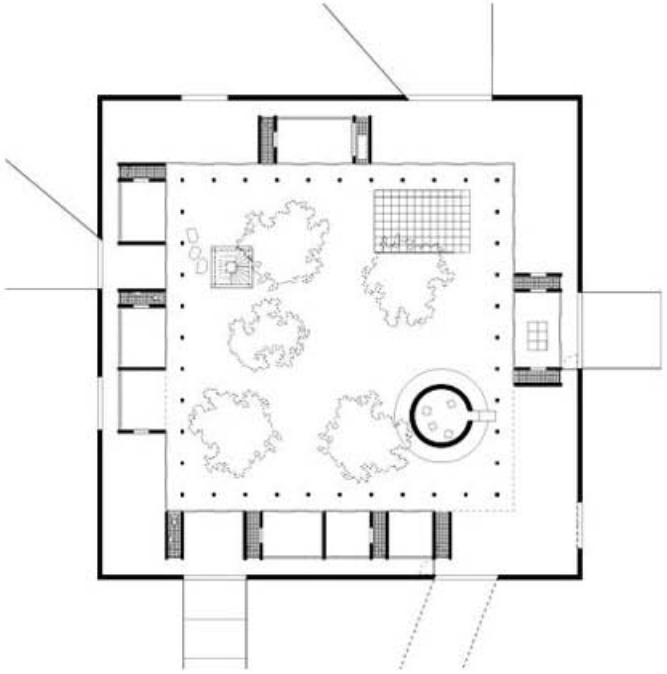
Certosa del Galluzzo, firenze, 1342

Richard Rogers, *Lloyd Building*, 1978



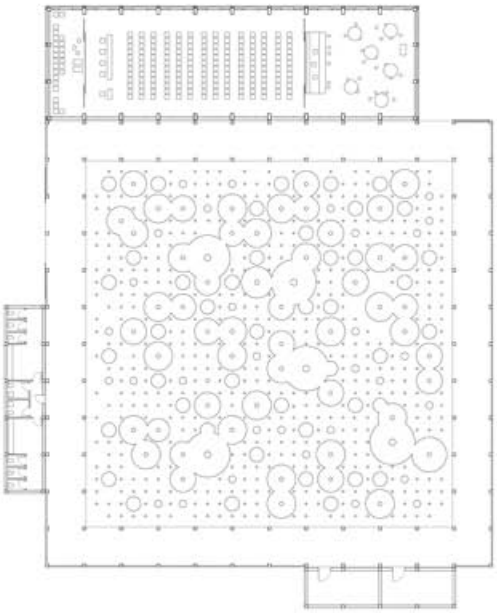


Office kgdvs, *Cité de refuge, Project for Architecture Biennial of Rotterdam*, 2007

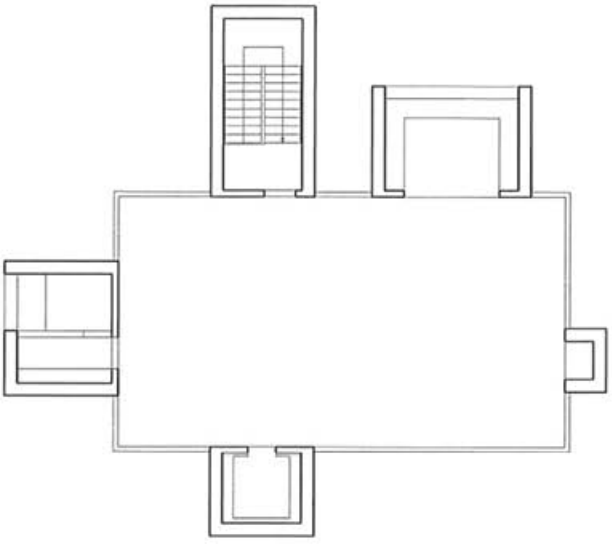


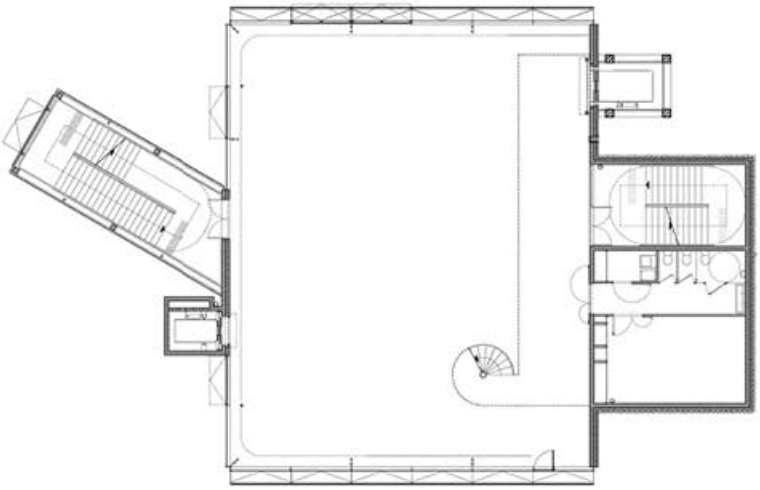
Office kgdvs, *Lakeside Villa*, Keerbergen, Belgium, 2007

DOGMA, *Masterplan for the corridor Durrës-Tirana*, 2014
Plan of the civic centre

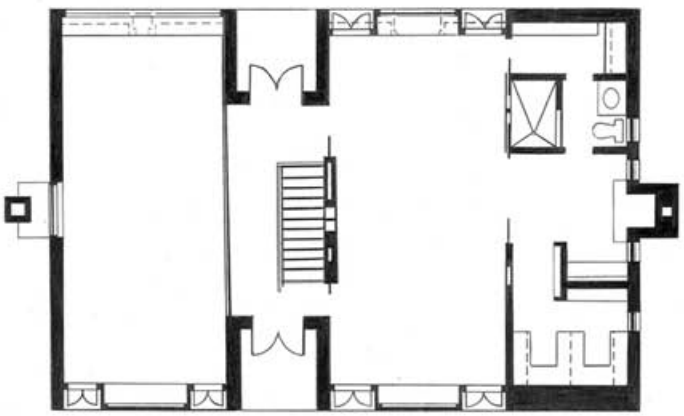


E2A, *The Incide-Out house*, study 2010



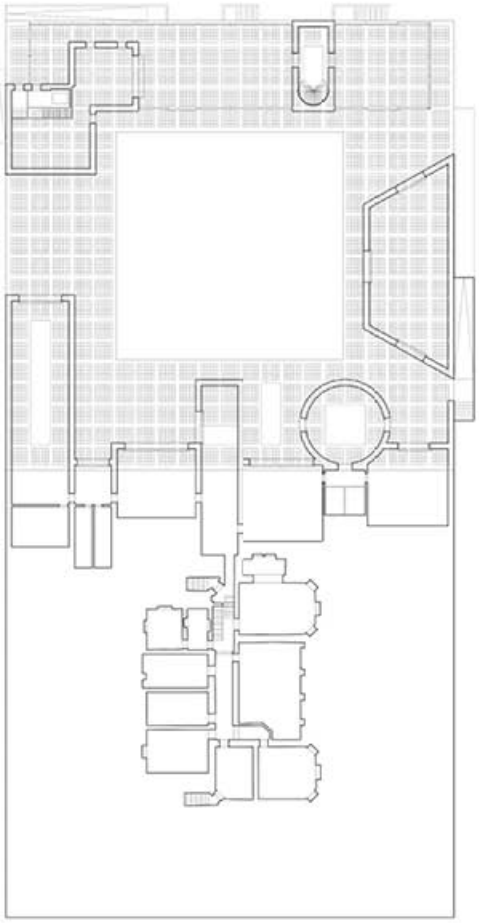


Bruther Architectes, *New Generation Research Center*, Caen, 2015



Louis Kahn, *Esherick House*, Philadelphia, United States, 1961

BAUKUNST, *Polyvalent Infrastruture,* Belgium, 2009-2015



The disconnected definition of the void (primary program) and the secondary elements

Toward the empty room; The neutral separation

If the two previous methods of permanence were based on the separation of the elements of different temporalities (most of the time the servant and the served spaces), they both still conserved relations between the two entities; whether one or the other was structuring the second. On the contrary, we will investigate the possibility of a total separation between the two categories: leaving no space for influence, both parts could consequently leave no room for compromise and evolve as independently as possible. Whereas both categories were previously interacting, we could picture this strategy as the vertical or horizontal juxtaposition of two entirely autonomous entities. However, it should be clear that the disappearance of all links is an ideal state, worth pursuing but impossible to fully achieve, because the primary spaces — by essence — need the secondary spaces, and vice versa. Still, even if the separation of the two categories cannot be entirely realized, their high autonomy foresees a high potential of flexibility and permanence. As we will see in the following examples, one can say that through the complete separation, this approach tries to provide the primary program with the most neutral surface possible. This method attempts to provide what Auguste Perret entitled the "Sovereign Shelter"[60]; the minimum possible architecture in order to welcome the most various possibilities of use.

From the Crown Hall in 1956, to the Neue Nationalgalerie in 1968, Mies van der Rohe developed an architecture in alignment with the concept of the "Sovereign Shelter". All secondary programs are placed in the basement whereas the juxtaposition of the primary space above it only keeps the minimum of connection between them. The metal structure of the roof leaves the floor of the large glass box emptied from the usual punctual structure. Mies minimizes the elements that are materialized and fixed in time and space as permanent architecture and procures an almost perfectly neutral empty room; able to welcome the unpredictable transience of use. While he offers a very flexible space, he also takes the risk that the under-determination of his plan could make it unusable. It is legitimate to ask ourselves what we can do with such an empty box? Will we not always need some walls to hang art or at least divide the space? Maybe, but probably not in a permanent way, and the simple fact that we will never be able to define a design that can support any exposition layout makes the strategy of Mies quite relevant. In this sense, what is also suggested by his belief « Less is More » is that less determinism leaves more possibilities.

Built in Paris in 1977, the program of the Center Georges Pompidou required extreme flexibility. With this consideration, Renzo Piano and Richard Rogers set the goal of creating floors with the highest possible degree of freedom. In order to create a large neutral surface 166m by 45m, trussed beams cross

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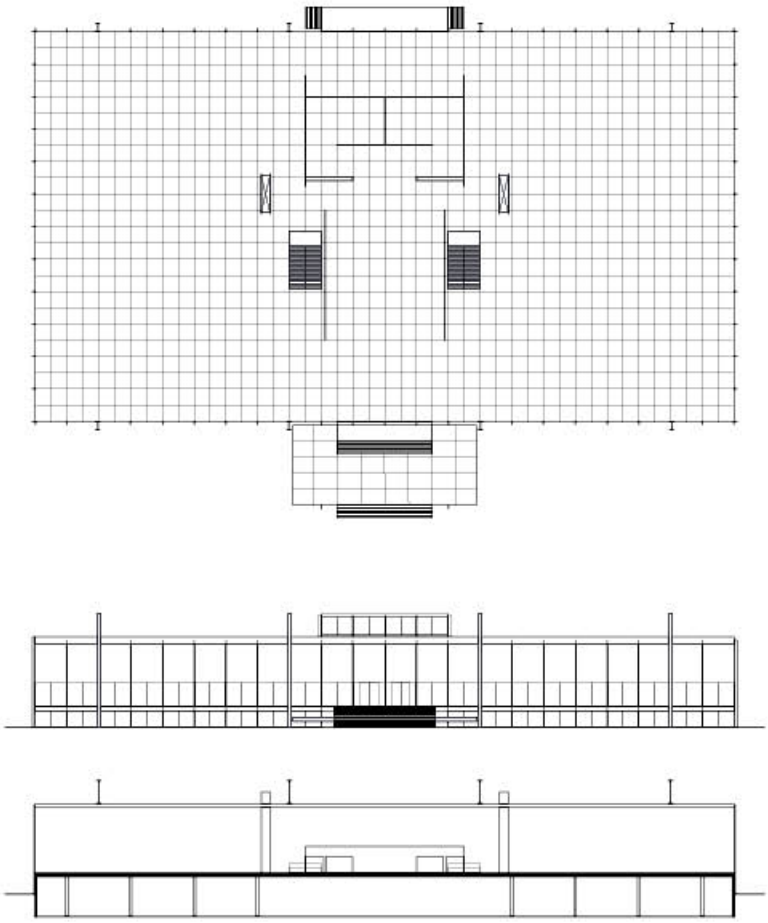
Jean-Louis Cohen, Joseph Abram, et Guy Lambert (dir.), *Encyclopédie Perret*, Paris, Monum, éditions du patrimoine : Moniteur, 2002

the entire width of the building to transfer forces to the vertical structures at the perimeter of the building. Additionally, all secondary programs were placed along the edges of the two long facades in clearly delimited bands whereas technical ceilings and floors offered unlimited possibilities for the laying out of partitions.

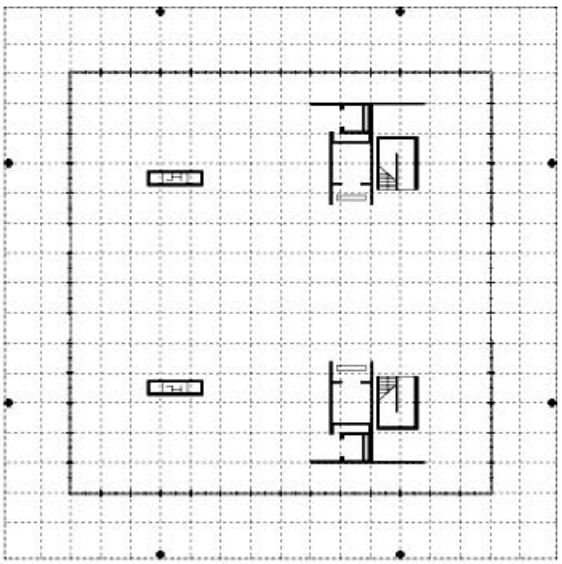
This scheme expresses the strong desire to entirely liberate the primary program from its relations to secondary servant spaces. The method is very similar to that of Mies, except that the separation of the two entities is made in plan rather than in section and is repeats at every floor. Both of the separated elements are built with permanent materials and the primary space is like an empty page ready to welcome any temporary closures. What is drawn in the competition and construction plans only includes the permanent elements of the building; the 'architecture'. Even if this is not yet enough to make it entirely functional, one could say that the transient closures that will fill in the large empty platform are only temporary layouts, and not so-called 'architecture'.

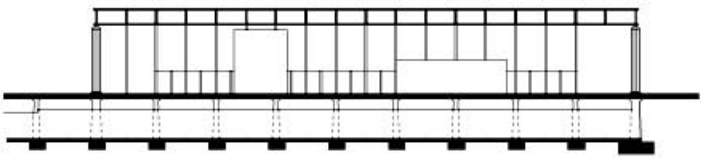
Elaborating on this concept, we could say that the American Typical Plan described by Koolhaas is trying to offer the same generic shelter. It Establishes the minimum elements which should be materialized and offers the most neutral surface as possible. Instead of the Miesian box's elimination of punctual structure, the Typical Plan accepts it as an element that can disappear due to its lack of character. The structure is never designed to establish an order that could organize the programs; it is rather a necessary element — that would ideally disappear — but is needed to provide the real purpose of the Typical Plan: the surface, the shelter. The work of both Archizoom Associati and Superstudio on the No-Stop City and the Supersurface, respectively, could be read as an extreme version of the Typical Plan, where the grid only exists to support the surface.
The theoretical urban project of the No-Stop City — developed by Archizoom in 1969 — proposed an infinite extension of the Typical Plan across the earth as a continuous and repetitive scheme punctuated by a neutral structure and multiple centers. On this surface, individuals can create their own habitats wherever and however they want. As an immaterial city without quality, this project reduces the architecture to the bare minimum, as a technological surface without any expression or symbolic value. Even more radical, the Supersurface depicted in 1972 by the group Superstudio did not need a ceiling/cover and would spread uniformly on the entire surface of the world. By the reduction of the architecture to a smooth and abstract surface hiding all technical equipment underneath itself, Superstudio's project imagined that humanity could once again live in a primitive way, without losing the comfort of modernity. Both of those projects were conceived as critical utopias in order to highlight a realist vision of the contemporary city; they warned about the possibility of an architecture that would become generic and disappear in its search for an extreme indeterminism.

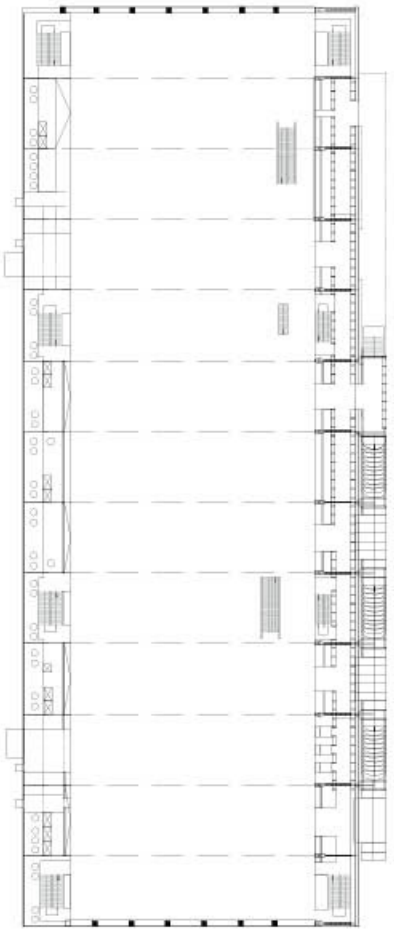


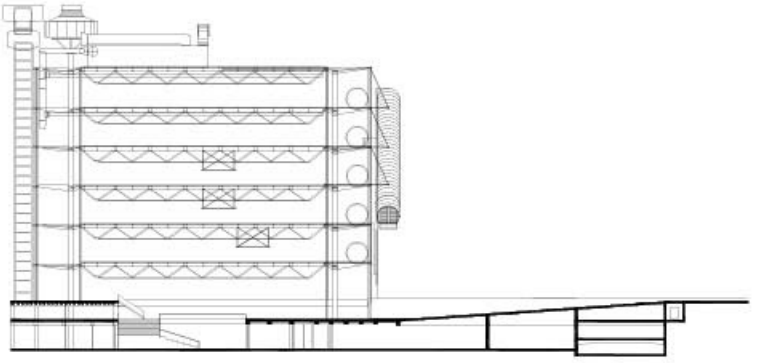
Mies Van Der Rohe, *Crown Hall*, Chicago, United States, 1968

Mies Van Der Rohe, *Neue Nationalgalerie*, Berlin, Germany, 1968



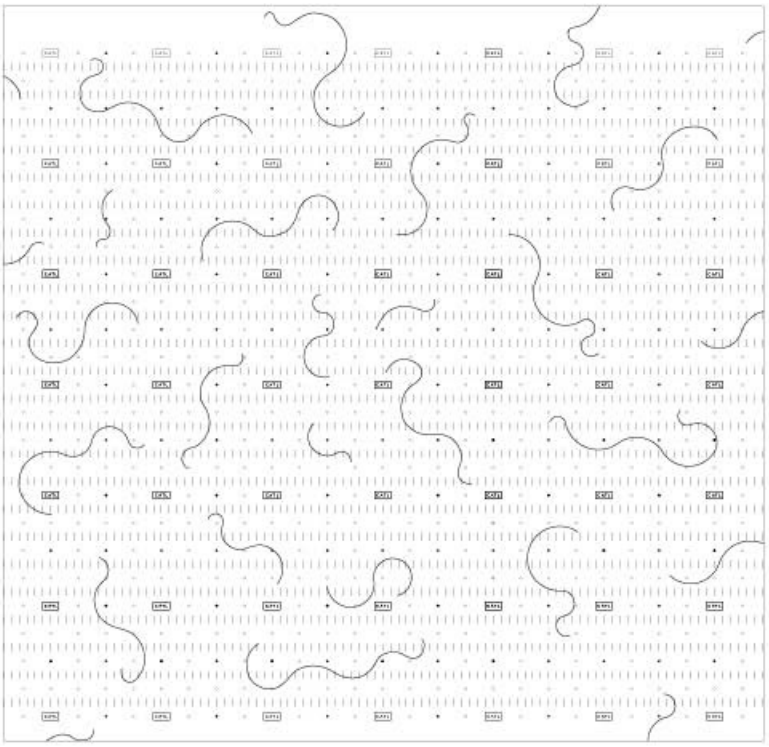




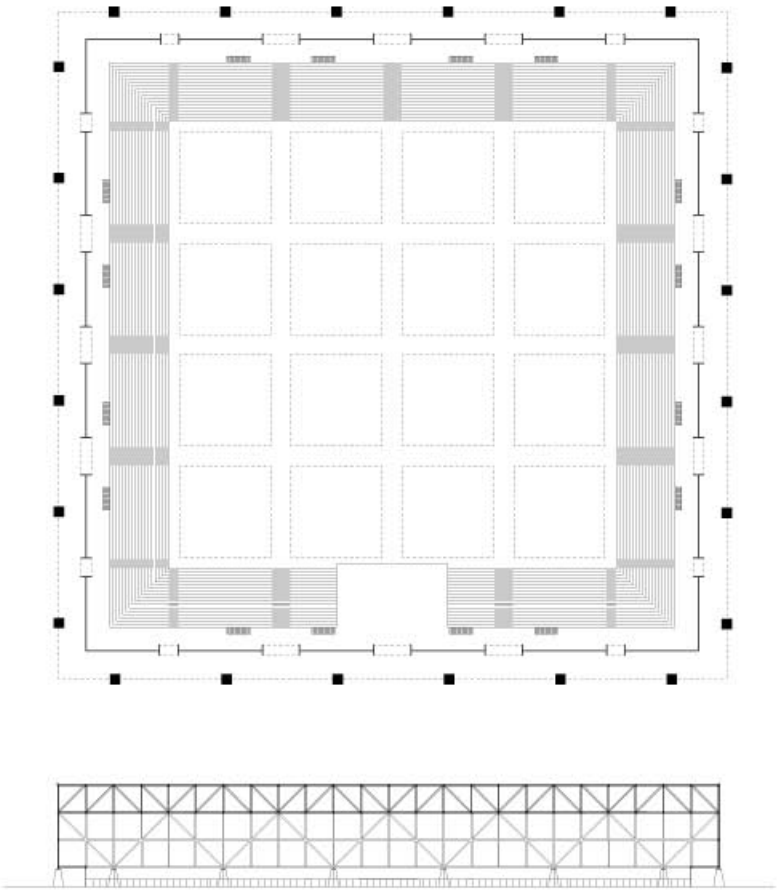


Renzo Piano and Richard Rogers, *Center Georges Pompidou*, Paris, 1977

Archizoom Associati, *No stop City*, 1969

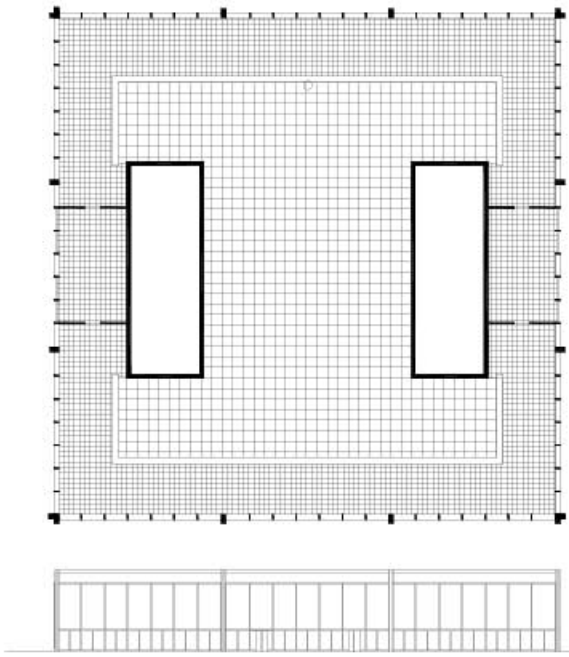


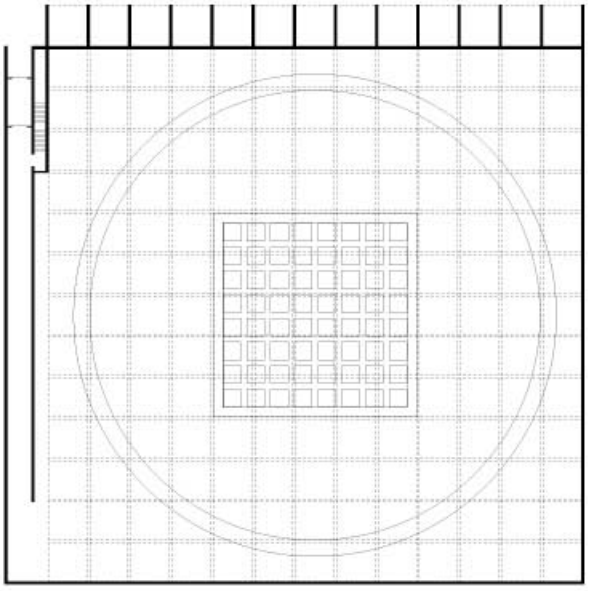
Superstudio, *Supersurface*, 1972

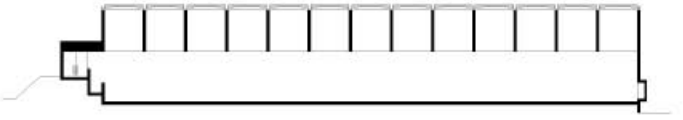


Mies Van Der Rohe,
Convention center,
Chicago, United States,
1952-54

Mies Van Der Rohe, *Chicago Loop Post Office,*
Chicago, United States, 1959

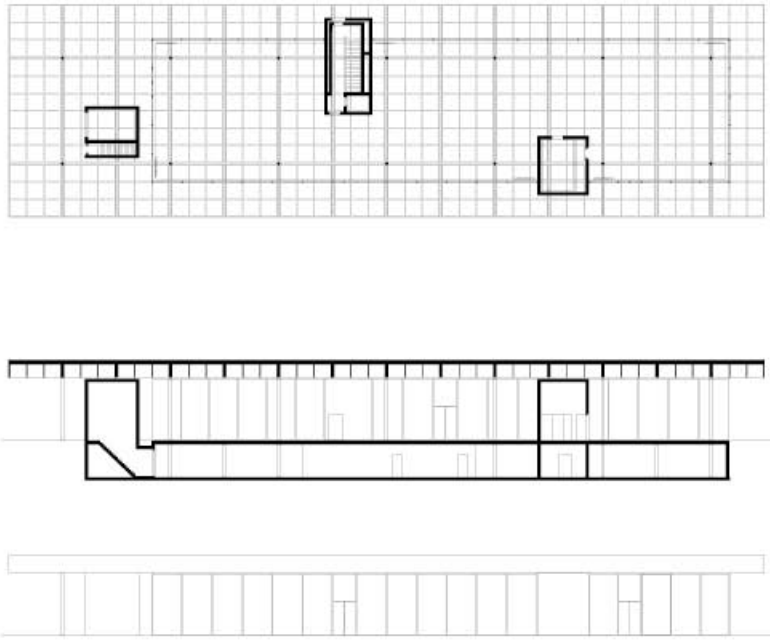


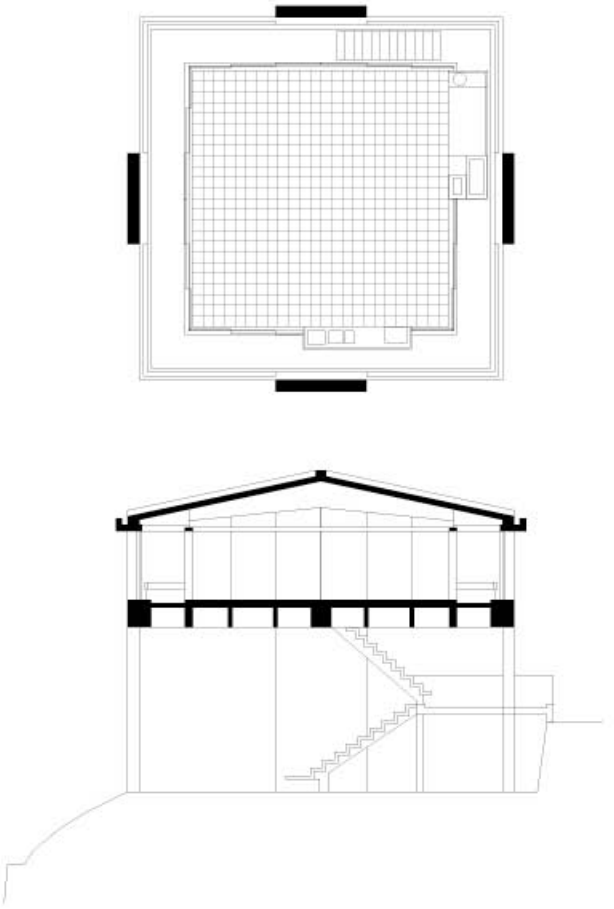




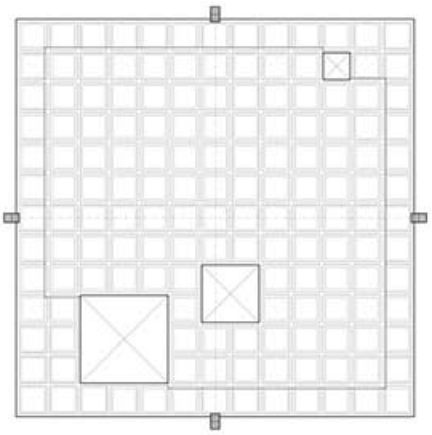
Peter Zumthor, *I Ching Gallery*, 2003

Peter Zumthor,
Werkraumhaus, Andelsbuch ,
Austria, 2013



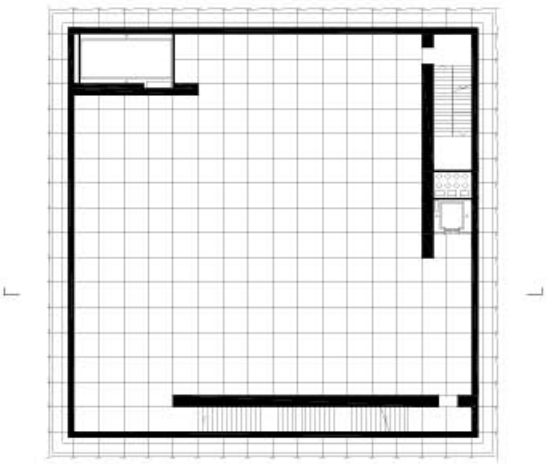


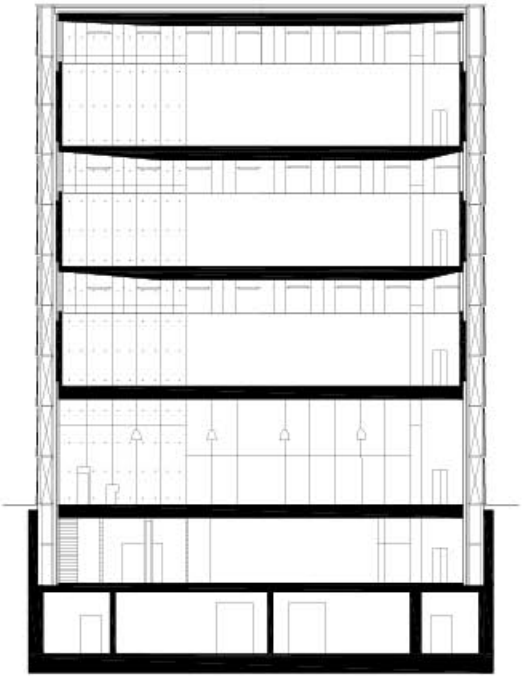
Kiyonori Kikutake, *sky house*, Tokyo, Japan, 1958

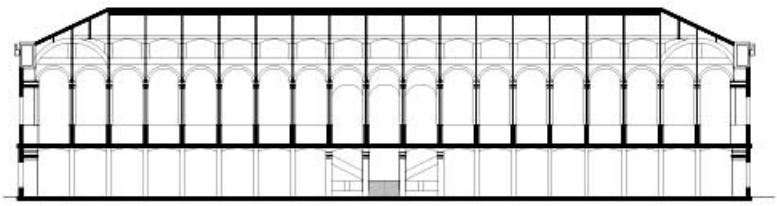


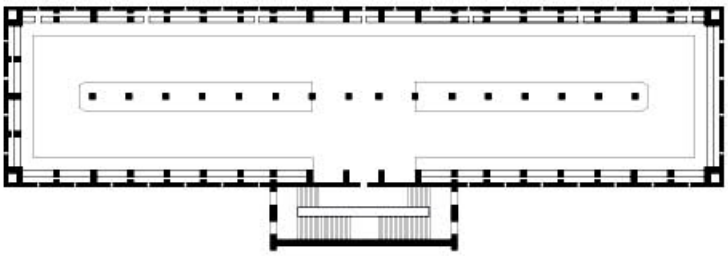
BAUKUNST, *Structure and Garden,* Molenbeck, 2009-2014

Peter Zumthor, *Art museum*,
Bregenz, Austria, 1997

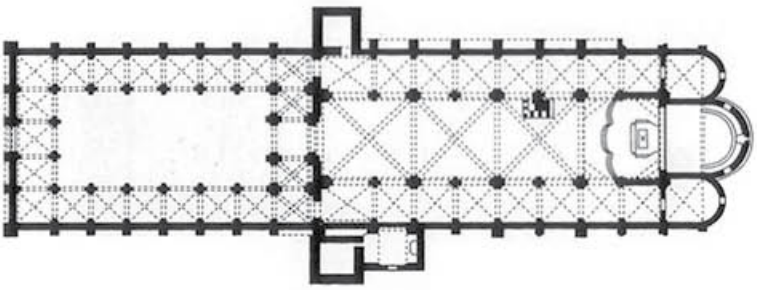








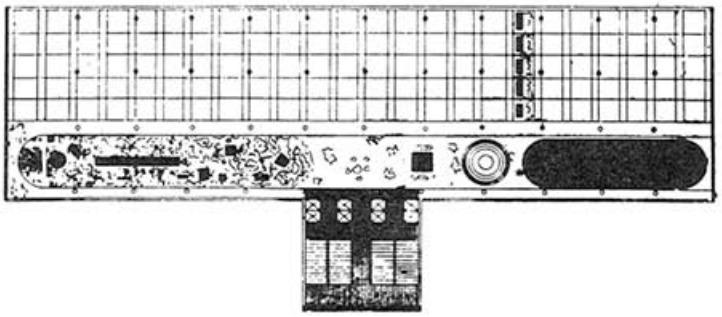
Henri Labrouste, *Sainte-Geneviève Library*, Paris, France, 1851



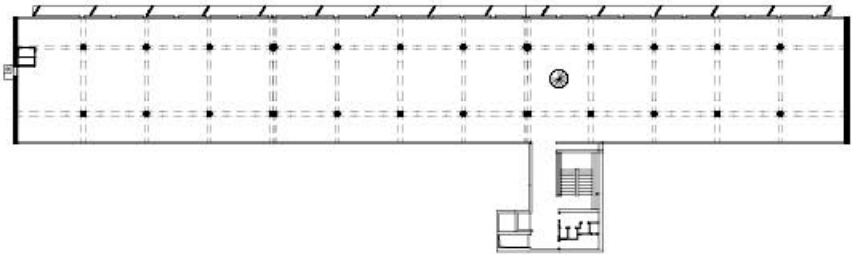
Unknown, *Basilica of Sant'Ambrogio*, Milan, 1492

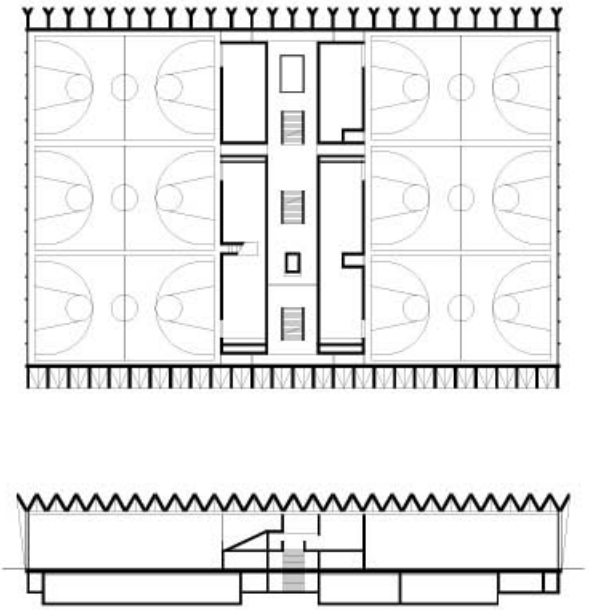
SOM, *Inland Steel Building*, Chicago, United States, 1956-57

Ivan Leonidov, *House of Industry, design competition*, Moscow, 1929-30

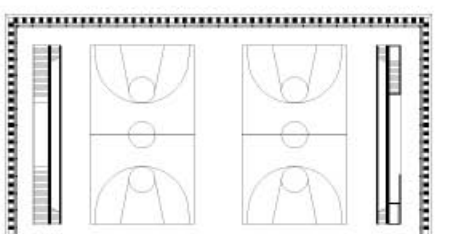


Le Corbusier, Claude et Duval Factory, St Dié, France, 1946



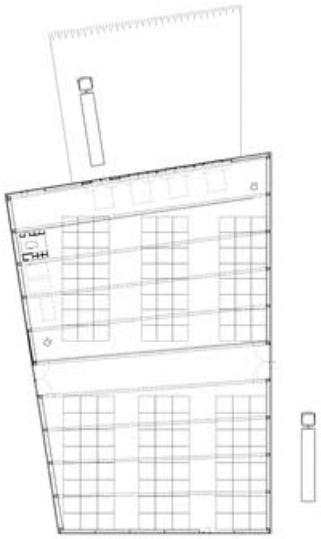


Livio Vacchini, *Mulimatt Sport Center,* Windisch, Switzerland, 2009

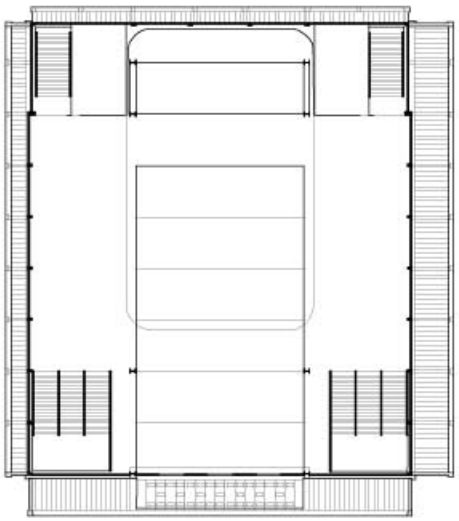


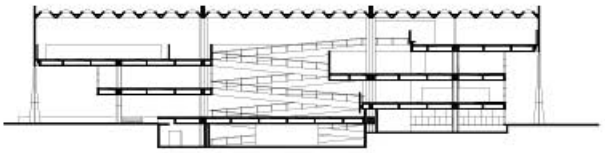
Livio Vacchini, *Losone Gymnasium,* Losone, Switzerland, 1997

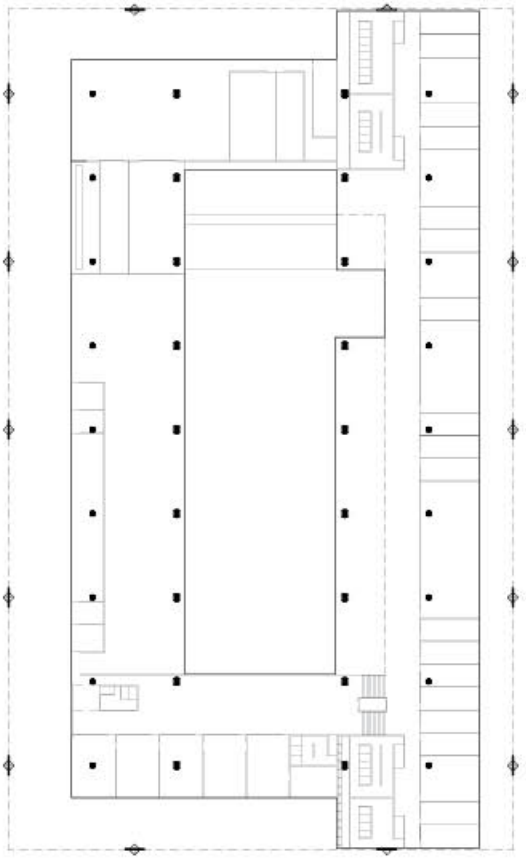
Office KGDVS, *Drying Hall, Hulshout,* Belgium, 2011 - 2013



Jean Prouvé, Marcel Lods, Eugène Beaudouin, Vladimir Bodiansky, *Maison du peuple,* Clichy, France, 1939

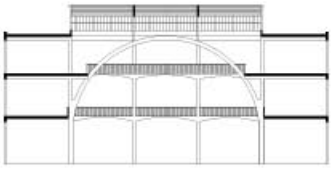


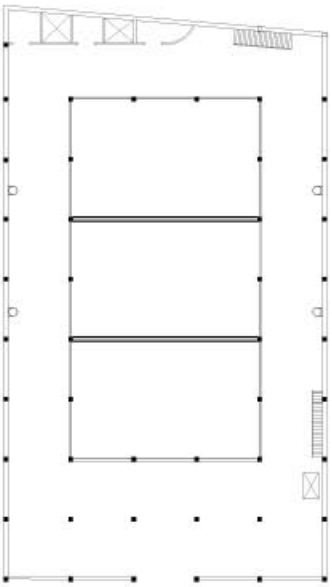




João Vilanova Artigas and Carlos Cascaldi, Faculty of Architecture and Urbanism, University of São Paulo, Brazil, 1961

Auguste Perret, *Atelier Esders,* Paris, France, 1919





Providing a neutral space for both the primary and secondary programs
The Order, the grid, the rule, the implicit development

The decision to use order as a tool of permanence presupposes that it is impossible to predict the way that the programs are going to evolve and that the only thing that can be determined is an abstract structure that supports any program — servant or served. This order often takes the appearance of a grid; materialized by a structure or kept abstract as a pure geometrical figure. If the concept of order has implications on flexibility, it also carries heavy philosophical meanings. It represent the architecture as « a brave and necessary attempt to impose order, structure and spatial legibility to the world in general and to one place in particular »[61]. This will to provide order to the world corresponds to a necessity to offer a way to read and use an environment in constant movement, that seem to be impossible to be entirely understood for mankind. Alberti's attempt to define perspective as a method for representing the world — the subject of *De Pictura*[62] — reveals this desire. He used what he called an "intersection" : a gridded veil which was positioned between the subject and the artist. Too complex to be easily reproduced, the vision of nature needed to be superimposed by a grid to become legible and usable. In similar ways, the entire world is seen through the prism of order – the planet is divided in latitudes and longitudes – countries are often defined by very geometrical legal borders – the territory is segmented by cadastral plans – and buildings are defined by as regularized dimensions as possible.

Order – especially the grid – is/was first considered as an immaterial idea before being materialized. Therefore, its strength does not come from its materialization, but from the collective agreement of its abstract existence. Yuval Noah Harari explains in *Homo Sapiens*[63] that one of the most important characteristic of mankind is their ability to regroup around concepts which do not exist in the materialized world, only in their mind; the platonic world of ideas. This way, two strangers can cooperate, communicate and trust each other if they can relate to common abstract ideas such as democracy, communism, Christianity, or Peugeot. For instance, Peugeot is an enterprise which in reality has no other materialization than the common agreement that it exists as a juridical person; a non-human legal entity. In analogous manner, a grid does not have any materiality, but has a form and dimensions which can be accepted by numerous people: this agreement is its strongest materialization. Through time, the grid can be constructed by roads, lines, trees, walls, or buildings and will acquire a materialization which will be a toll of imposition: as soon as the grid has a materiality, it is no

61
El Croquis, *Office - Kersten Geers, David Van Severen, 2003-2016: acciones prio-mordiales - primary actions*, Madrid, El Croquis Editorial, 2016

62
Leon Battista Alberti, *De Pictura*, 1435

63
Yuval Noah Harari, *Homo Sapiens*, 2011

longer possible to disagree with it, or at least it becomes impossible to ignore. As long as the grid is accepted as an idea by everyone, it does not necessarily need to be constructed to be permanent, yet as soon as it is no longer accepted, only its materialization can give it permanency. The various materializations that a grid can take offers a large spectrum of control with different intensities; from the abstract grid — to the materialization of columns and pillars — to the enfilade — and even the entirely walled grid.

Grids, an analysis of their use in art published in 1979 by Rosalind Krauss, is also useful for understanding their role in architecture. « In the spatial sense, the grid states the autonomy of the realm of art. Flattened, geometricized, ordered, it is antinatural, antimimetic, antireal. [...] In the overall regularity of its organization, it is the result not of imitation, but of aesthetic decree. Insofar as its order is that of pure relationship, the grid is a way of abrogating the claims of natural objects to have an order particular to themselves »[64]. « From their point of view, the grid is a staircase to the Universal, and they are not interested in what happens below in the Concrete »[65]. In this sense, the grid is disconnected from reality and its abstraction allows it to be inhabited by any program without necessarily possessing any relation to it. The grid states its spatial and temporal autonomy to the environment it is superimposed on and neutralizes any elements submitted to it. Krauss continues, « As the experience of Mondrian amply demonstrates, development is precisely what the grid resists. [...] Yet it is safe to say that no form within the whole of modern aesthetic production has sustained itself so relentlessly while at the same time being so impervious to change ».[66] Accordingly, the grid seems to resist development and be very persistent through change. Because of its abstraction, the grid aims for the universal and the atemporal; its abstraction provides it great stability.
From the unmaterialized order of a geometrical figure to the materialized structure of a building, the range of grid's imposition can vary. When using them, architects have to decide on the order's intensity of restriction they create.

64
Rosalind Krauss, « Grids », *The MIT Press*, 1979

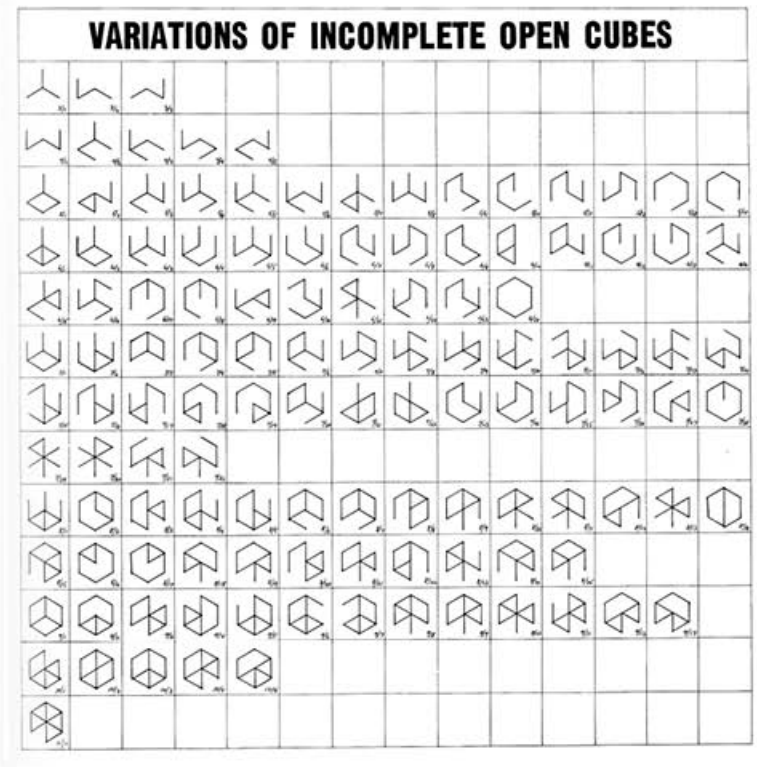
65
Ibidem

66
Ibidem

Albrecht Durer, *Engraving*, 1538

The grid only allows development, change and variation within the frame it defines. The work of So Lewitt – *Variations of incomplete open cubes* – is emblematic of the exploitation of the grid's variations. If in this case Lewitt restrains the grid to a cube, he also developed the possibilities of three-dimensional grids. His work shows that the limiting system is also a generator of infinite variation.

If the grid tends towards neutrality, it is interesting to observe that it also tends to exert great influence on the development of a building. In 1955, Louis Kahn developed a structure that possessed a specific interaction to its content for the Jewish Community Center project in Trenton. The grid is not homogeneous but made by the alternation of two spans, the differing dimensions of which induce separate uses; the smaller one contains secondary programs, and a larger one the primary program. On top of that, the usual neutral pillars are L-shaped instead of square or circular. For that reason, the pillars induce a precise way to build walls in-between them and do not permit future developments to differ from the system that Kahn establishes. Consequently, the order is used to propose different variations of possible use while limiting other directions of



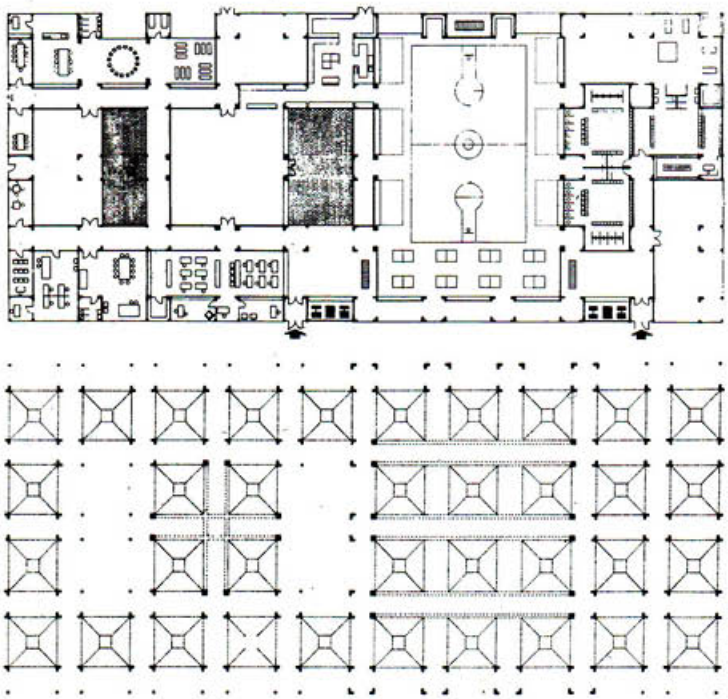
Sol Lewitt, *Variations of incomplete open cubes*, 1974

development. Therefore, neutrality is not the only value of the order; the geometry of the grid — even if it remains very abstract — is a powerful tool of control that can strongly determine the life it welcomes.

When Ildefonso Cerdá defined the principles of urbanism[67] he took great care to analyze urban layouts as tools to control the city. It is not only that the various geometrical systems could induce different use, but also that they represented different philosophical points of view. A radial system would not carry the same political ideals than a rectangular grid; therefore, the neutrality of an order is never complete because it cannot escape from its signification. Somehow, one could say that order is not even entirely flexible to ideologies.

Any decision on the geometry of the grid will always have a strong influence on its use. For instance, in the layout of a city, the decision to use a square grid necessarily emphasizes the two orthogonal directions whereas any diagonal movement will take twice as long to cross. While the square grid establishes equality between the two orthogonal axis, the rectangular grid will make the circulation faster in the direction of the longer length thanks to the reduction of intersections. This difference is part of what clearly separates the grid of Manhattan — planned in 1811 by Simeon De Witt — from Cerdá's plan for Barcelona in 1860.

67
Ildefonso Cerdá et Arturo Soria y Puig, *Cerdá: the five bases of the general theory of urbanization*, Madrid, Electa, 1999

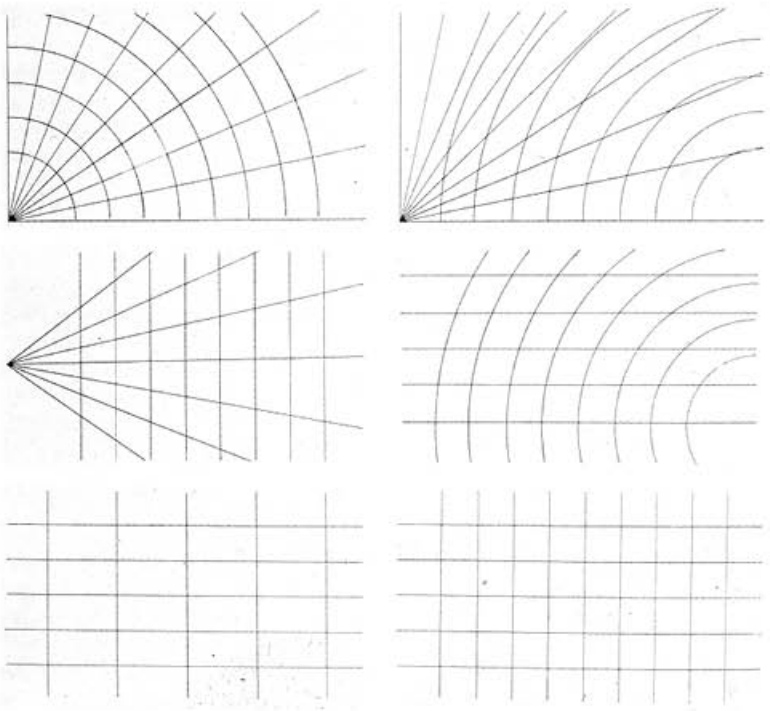


Louis Kahn, *Jewish community center of Trenton*, New Jersey, United States, 1955

To analyza the potential of the grids, the comparison between Manhattan and Barcelona shows various intensities of imposition that an order can bring. The grid of Manhattan originally defined rectangular blocs that would later become volumes with the 1916 zoning laws. The famous drawings of the envelope defining the maximum built volume of Hugh Ferriss established the only limitation that ruled inside the block. As Koolhaas explains with his *City of the captive globe*, the grid created the idea of the single block as the « maximum unit of urbanistic Ego »[68]. The blocks define free laboratories where anything is possible if it is « realized fully within the limitations of the block »[69]. In this sense, the grid of Manhattan is the permanent structure of an ever-changing content; its permanence is paradoxically a catalyzer of change. On the contrary, the grid of Barcelona does not leave the occupation of the square blocks up to the mind of the user. Cerdá developed variations of occupancy that would set strong limitations to the various future possibilities. Here the grid is a permanent structure with a much higher degree of control and a content much less flexible than in the case of Manhattan. With the establishment of any order, it is the role of the planner to define the right degree of control and determinism to distinguish the permanent and transient elements in architecture.

68
Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan*, 1978

69
Ibidem



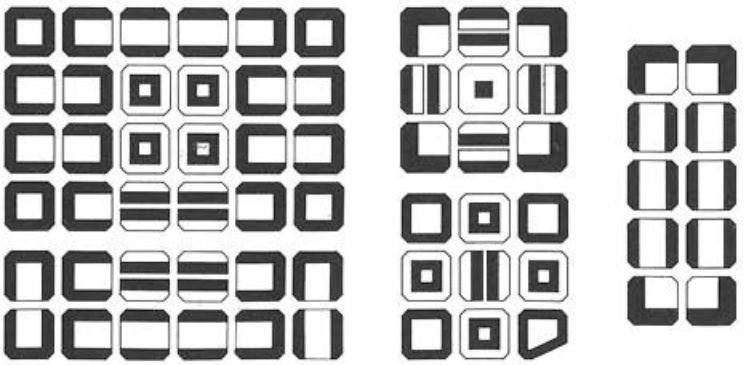
Idelfonso Cerda, *Layout diagrams,* extracted from, The Five Bases of the General Theory of Urbanization, Cerda, 1860-61, edited by Arturo Soria y Puig

Order cannot be reduced to the system of the grid, however; the understanding of the grid allows to grasp the functioning of any order at its most extreme state. The less extreme method of the Beaux Arts composition is also related to the establishment of an order. Its process focuses on the definition of a clear hierarchy between rooms with enough neutrality to be adaptable to any programs. The relations of the parts to the whole creates a compact aggregation of rooms that reinforce its adaptability. In this case, flexibility is not only an abstract notion implying the possibility to move partitions but rather the intrinsic quality of each space to be able to be used in multiple ways. From the Beaux Art composition to the grid, a large spectrum of types exists and creates various possibilities of flexibility. Buildings such as the Hunstanton school[70], designed by Alison and Peter Smithson, are somehow hybrids that simultaneously provide the timelessness of a very clearly defined relation between the parts and the whole while offering the neutrality of the grid. On top of that, the building is also able to

70
Alison Smithson et Peter Smithson, *Hunstanton School of Norfolk,* 1948-1954
Voir P.94

Idelfonso Cerda, *Plan Barcelona*

Idelfonso Cerda, *Plan Barcelona's blocks variations,* extracted from, The Five Bases of the General Theory of Urbanization, Cerda, 1860-61, edited by Arturo Soria y Puig



create a large open space in its center that can be compared to the empty Miesian room addressed in the previous chapter. Those strategies were clearly intentional, as the Smithsons wrote about the school in 2001; « we must take into account the current functional requirements so that the form of the building is valid in a permanent way »[71].

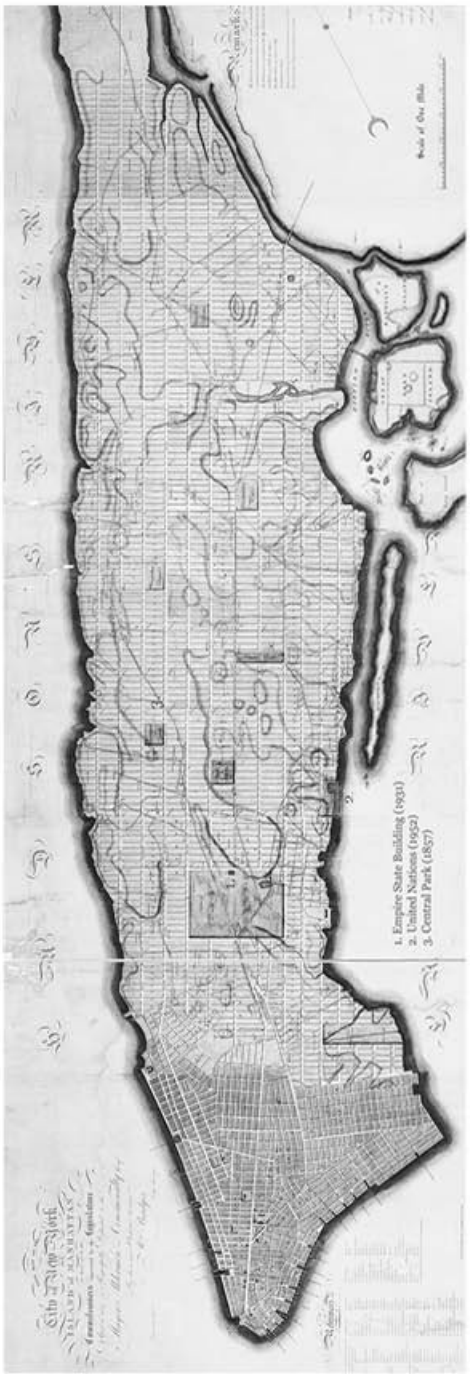
As Alison and Peter Smithson did with the Hunstanton school, various strategies of permanence can be used in a building to find the right balance of determinism and transience. Those projects cannot simply fit in one of the four categories used in this essay; they are complex associations and declinations of those divisions that generate adapted hybrids.

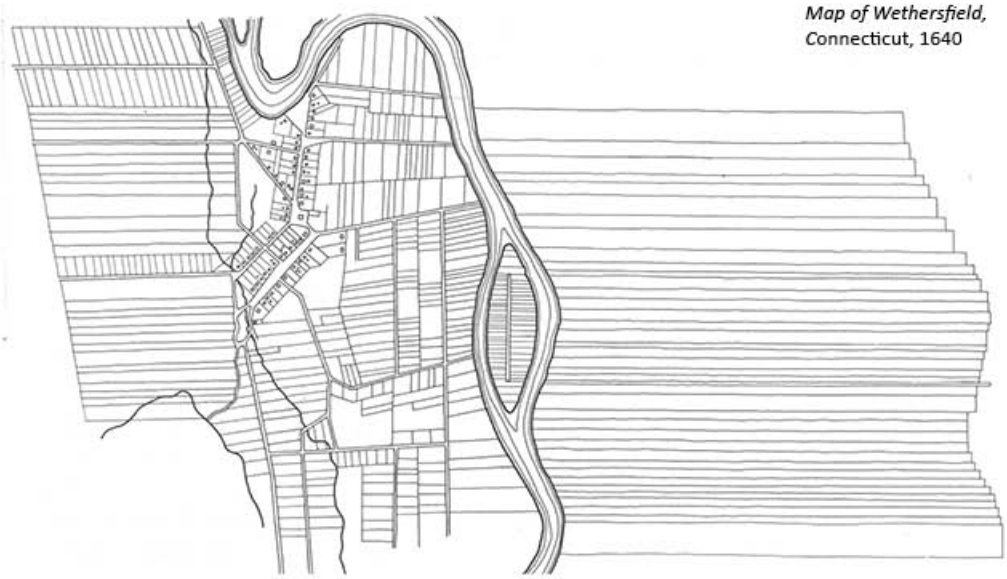
71
Alison Smithson et Peter Smithson, *The charged void: Architecture*, New York, The Monacelli Press, 2001

Rem Koohlaas, *The City of the Captive Globe*, 1972

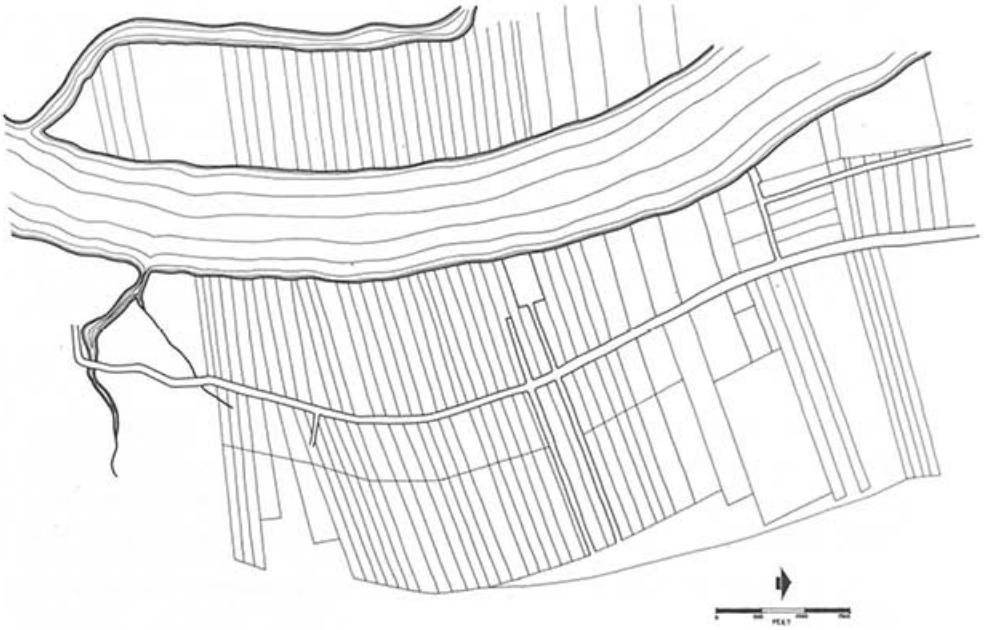
Map of the United States of America

Simeon De Witt, *The commissioners' Plan of New York City, 1811*



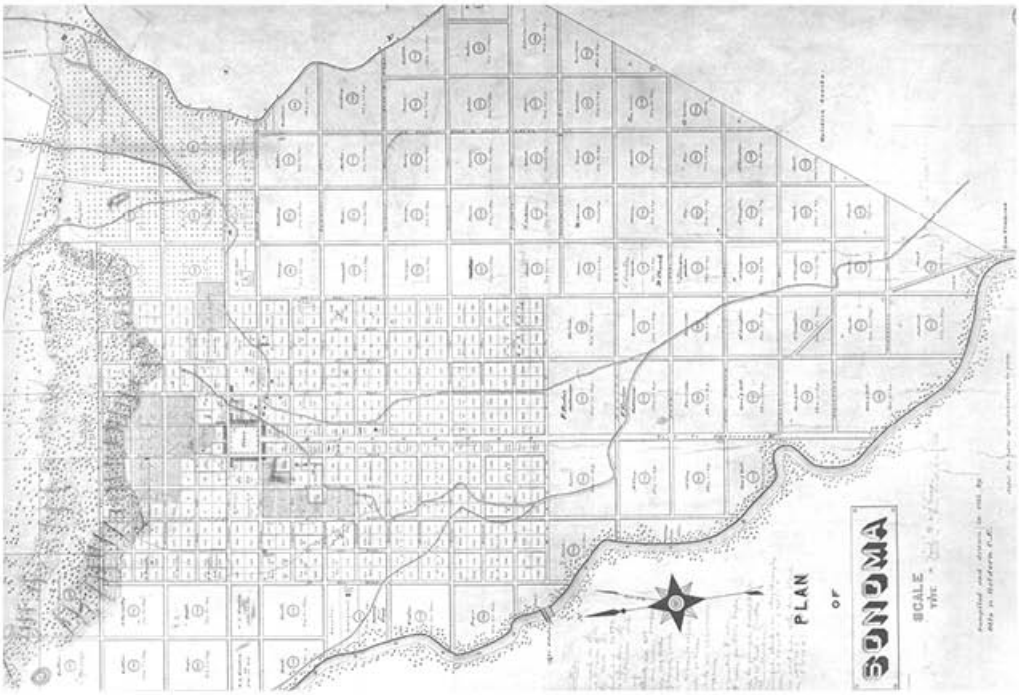


Map of Wethersfield,
Connecticut, 1640

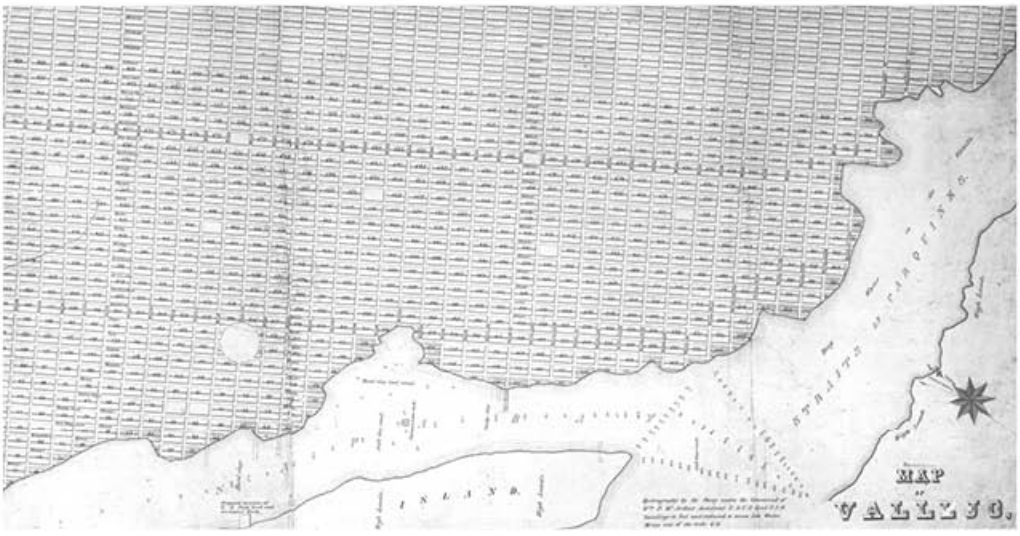


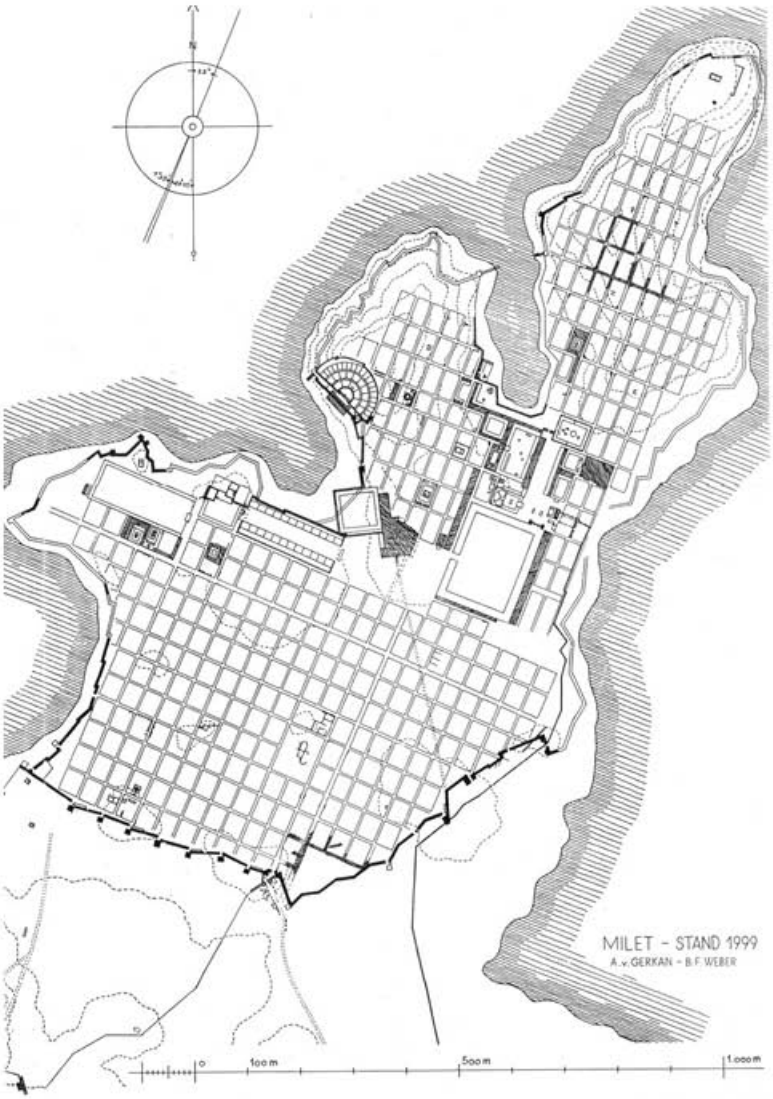
Plan of Sprinfield,
Massachusetts, 1640

Plan of Vallejo, California,
1850

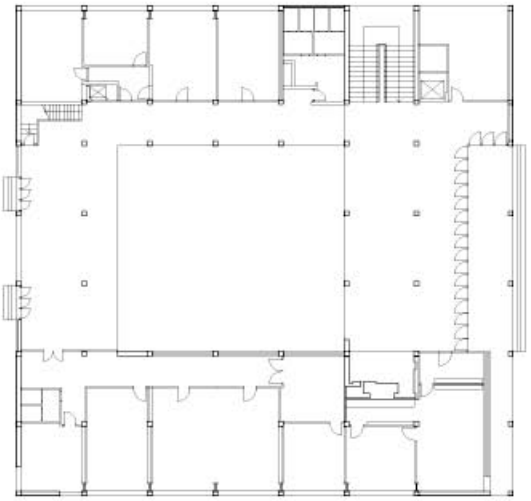


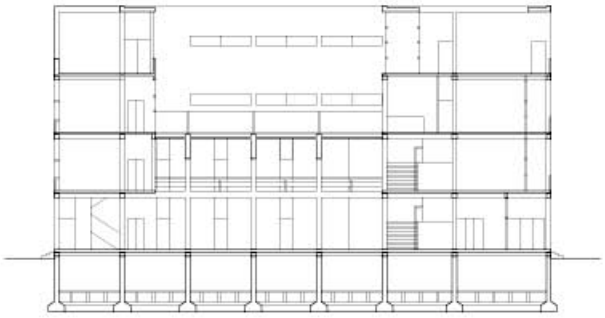
Plan of Sonoma, California,
1875





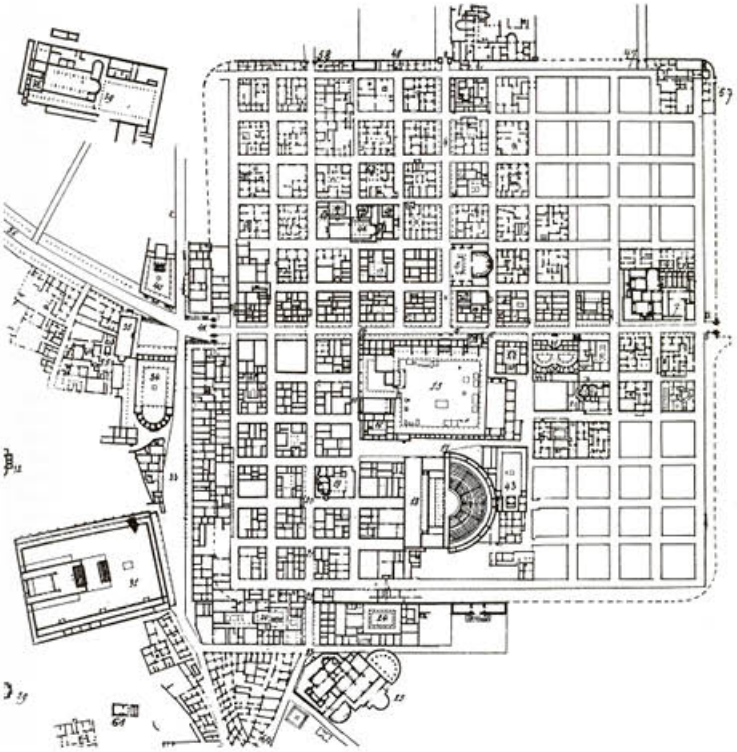
Hippodamos, Plan Milet, Greece, 480 B.C.



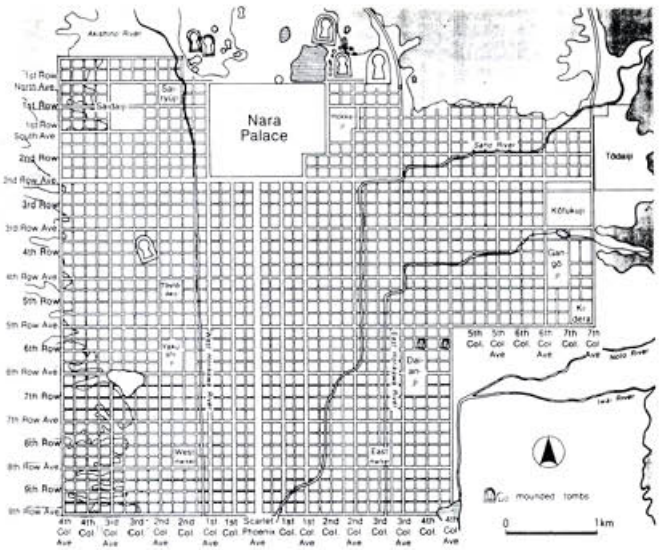


Giuseppe Terragni, *Casa del Fascio*, Côme, Italy, 1936

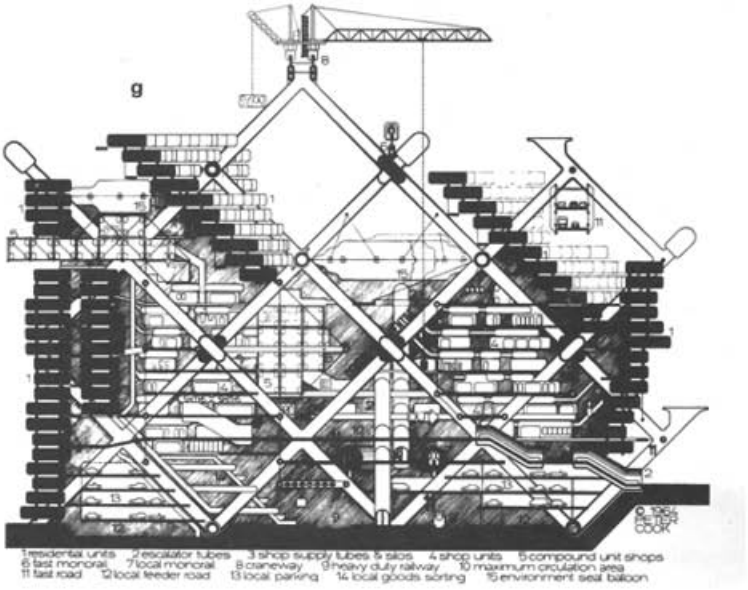
Plan Timgad, Algeria, 100 AD



Plan of Nara, Japan, 710-794



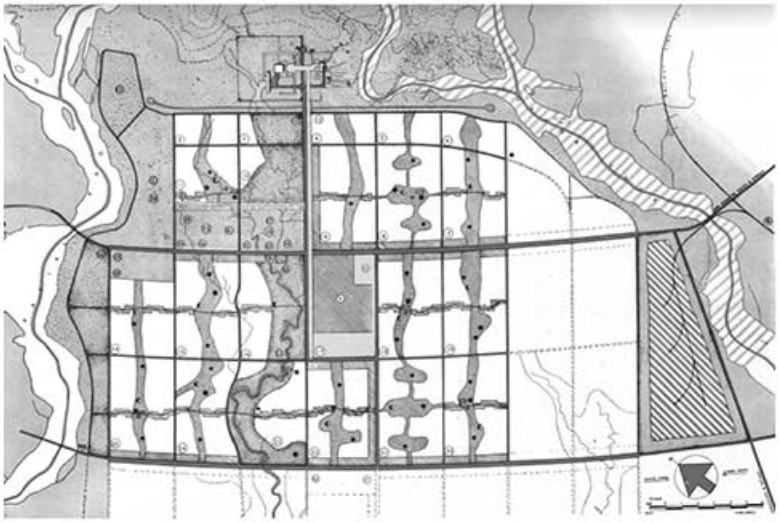
Aerial view of Santa Fé,
Spain, 1958

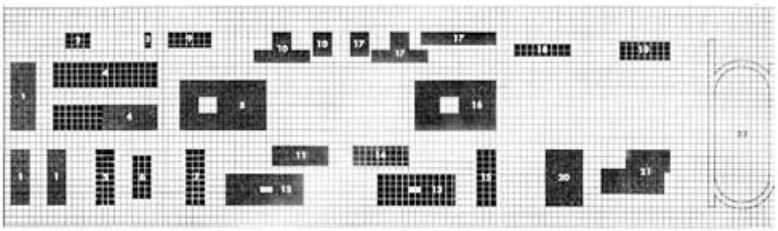


Peter Cook, *The plug-in city,*
1964-1966

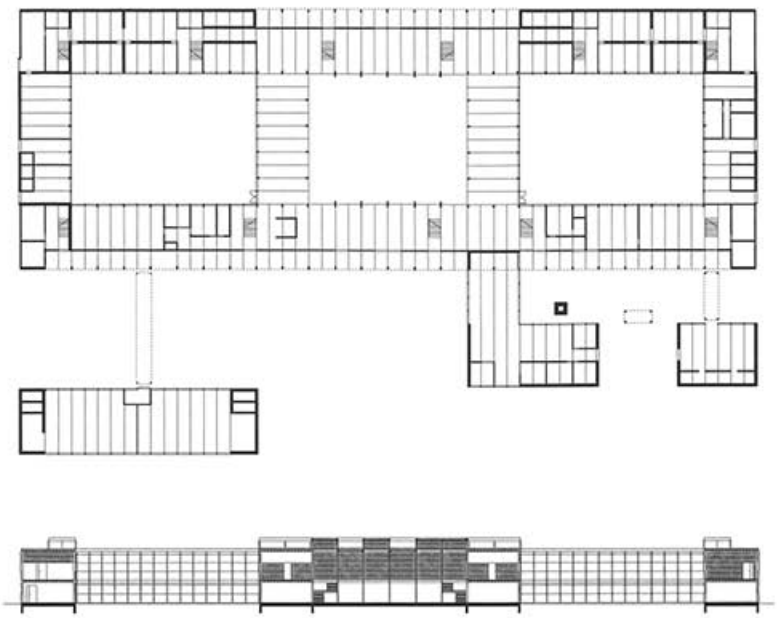
Aerial view of Florence's city center, Italy,

Le Corbusier, *Plan Chandigarh*, 1951



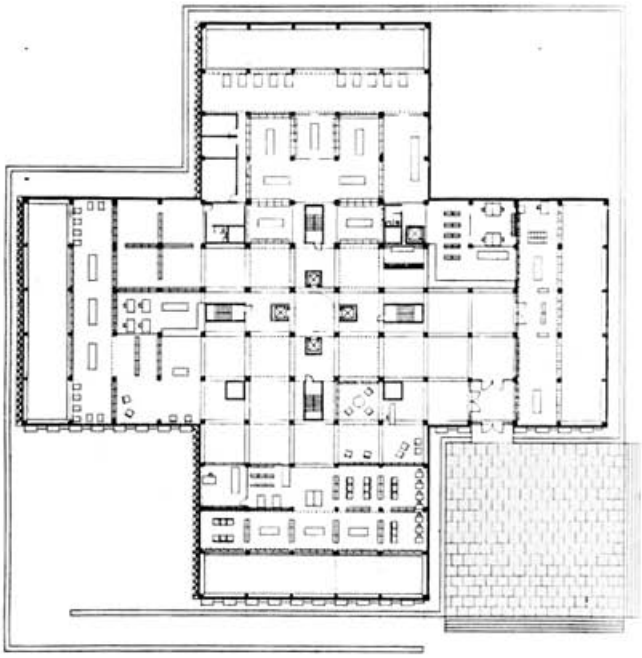


Mies Van Der Rohe, *Illinois Institut of Technologie*, Chicago, United States, 1943-57

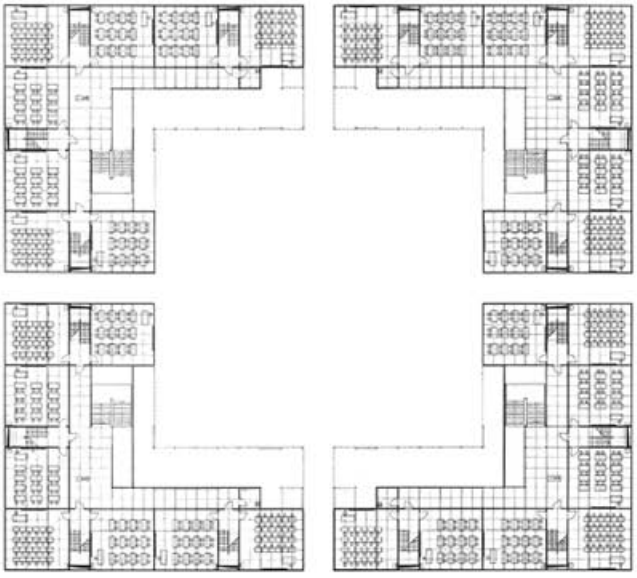


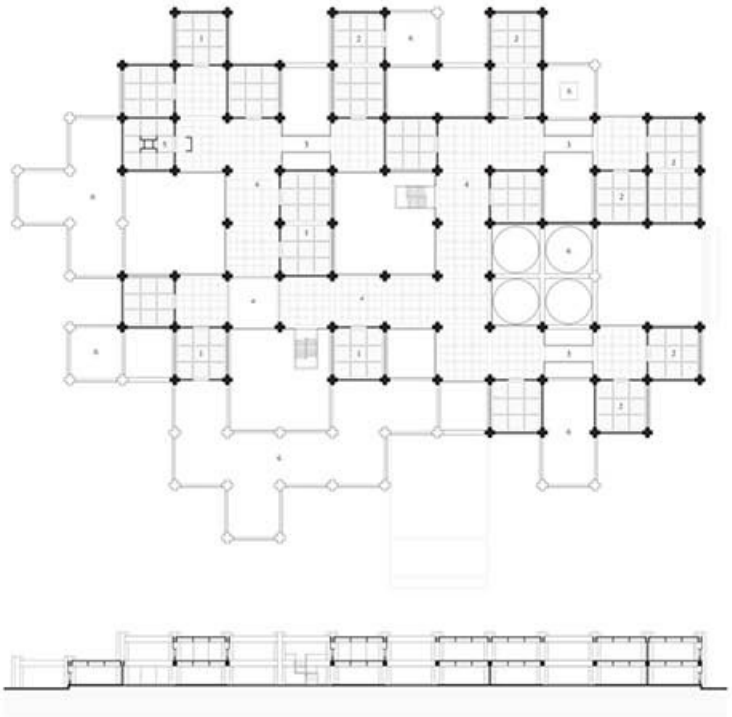
Alison and Peter Smithson, *Hunstanton School of Norfolk,* United Kingdom, 1948-1954

Louis Kahn, *Project for the Library of Washington University*, Washington, United States1956



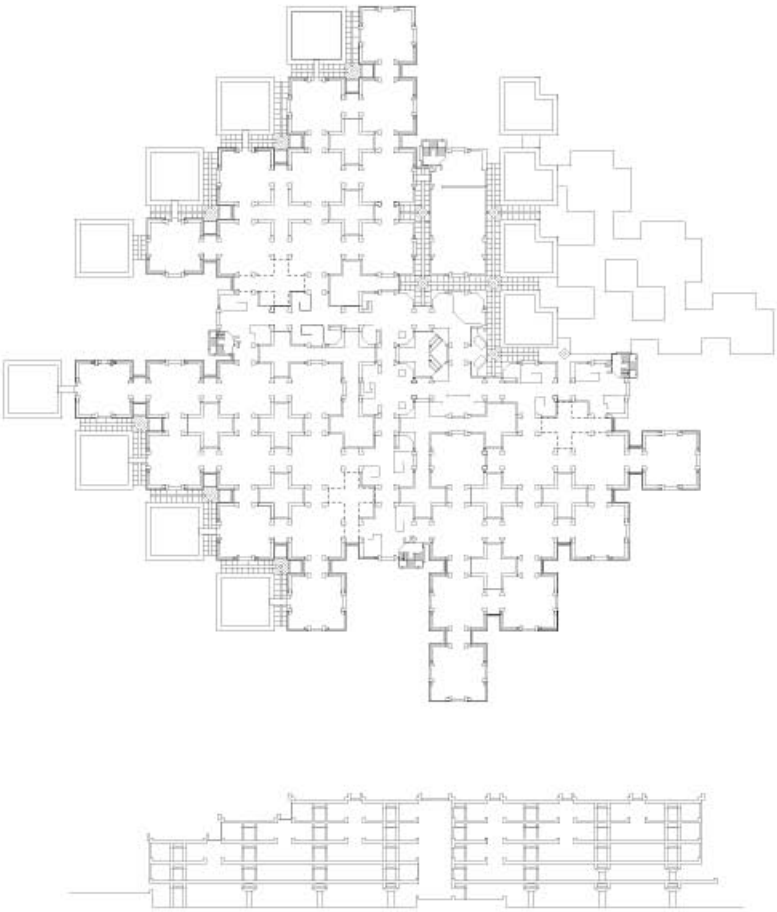
Livio Vacchini and Aurelio Galfetti, *Secondary School,* Losone, Switzerland, 1973-1975

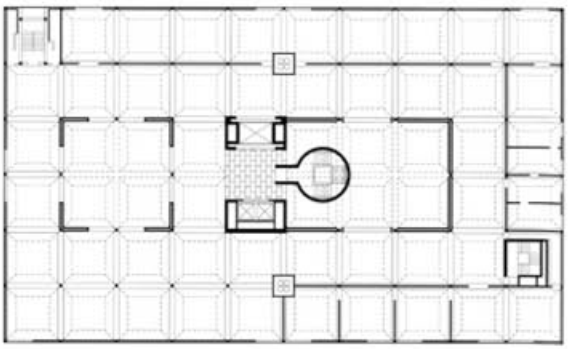


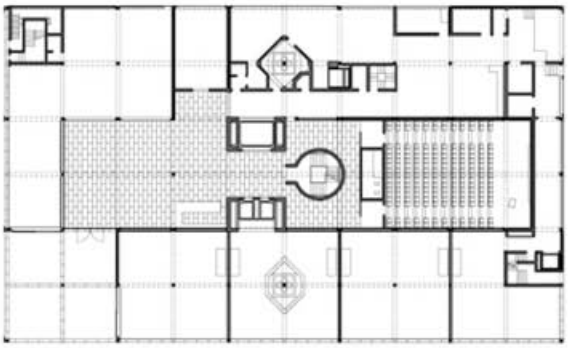


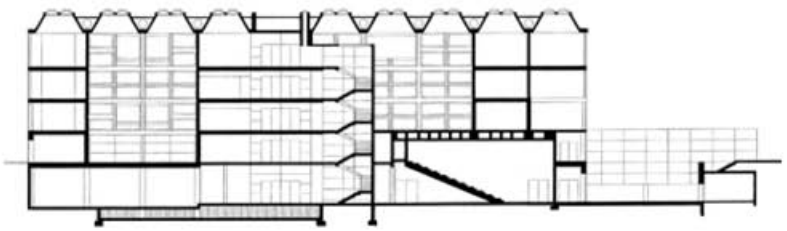
Hasmukh Patel, St.Xavier's Primary School, Ahmedabad, India, 1967

Central Beheer, Herman Hertzberger, Apeldoorn, Netherlands, 1972



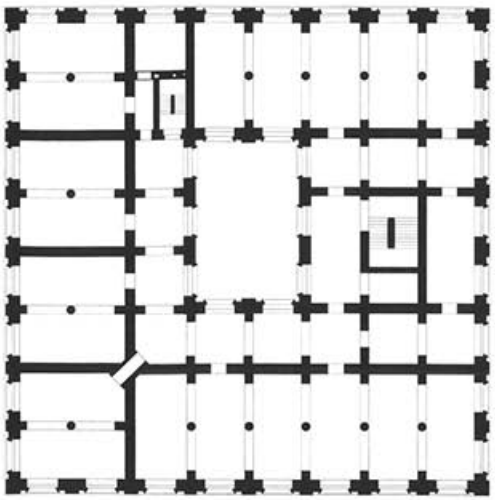


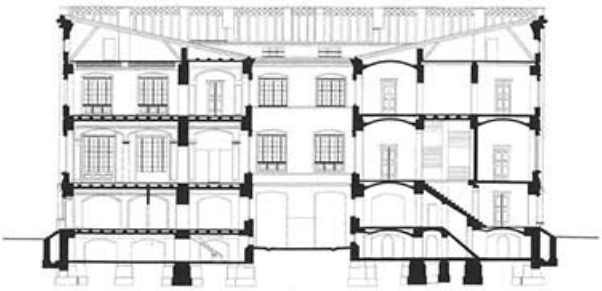




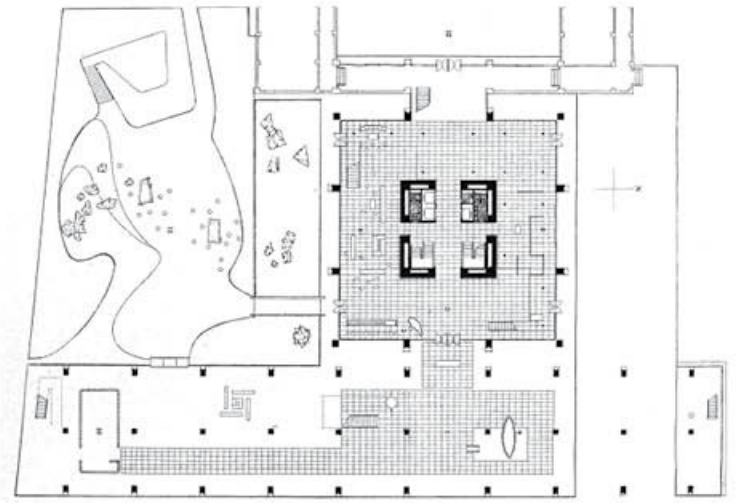
Louis I. Kahn, *Yale Center for British Art, New Haven, United States,* 1974

Karl Friedrich Schinkel,
Bauakademie, Berlin,
Germany, 1832-1836

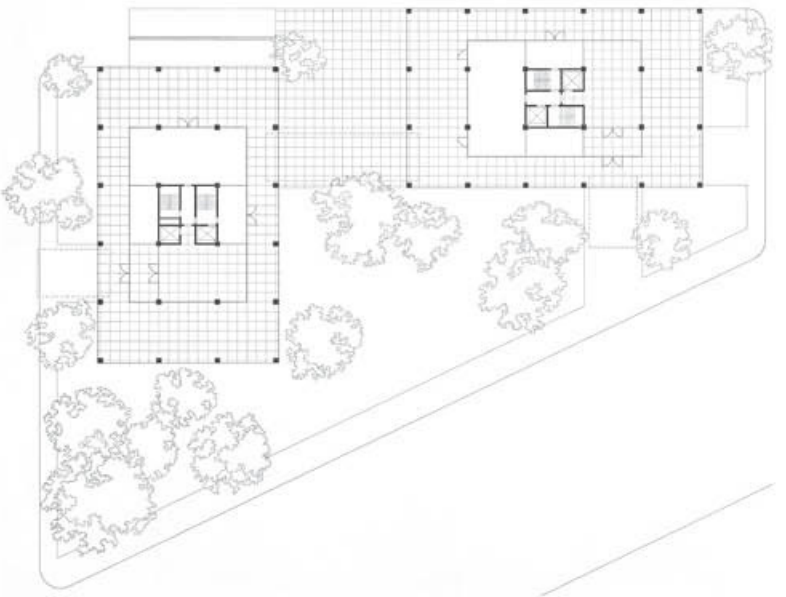


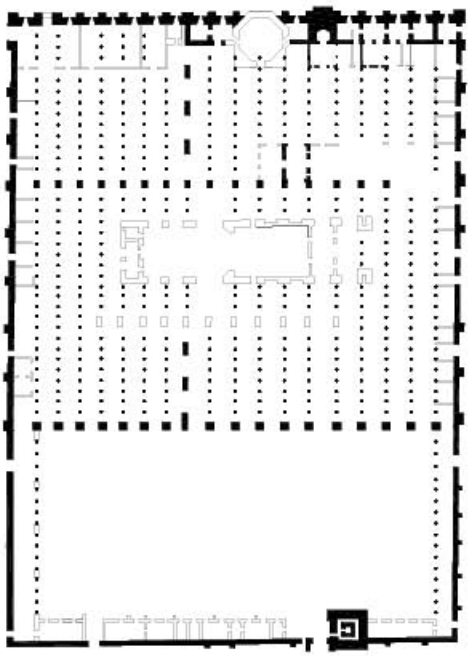


Kenzo Tange, Kagawa Prefectural Government Hall, Japan, 1958



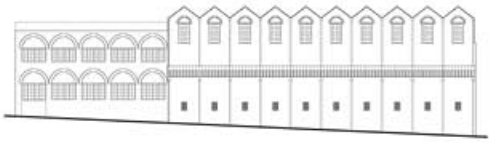
Mies van der Rohe, Lake Shore Drive, Chicago, United States, 1951

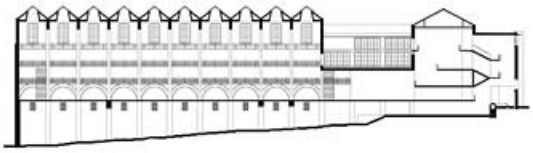


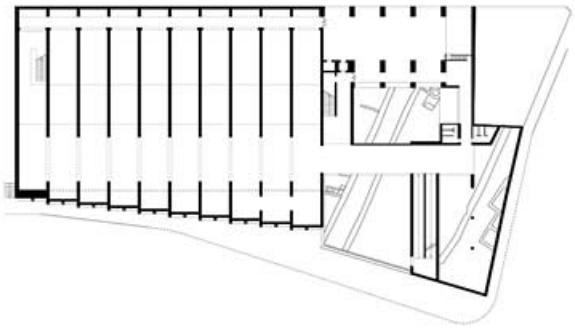


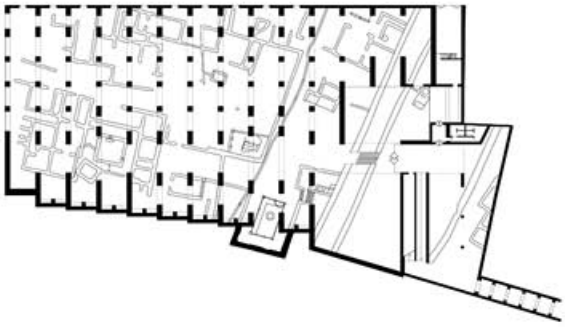
Mosque of Cordoue, Palimpsestious developpement, Spain, 786-1523

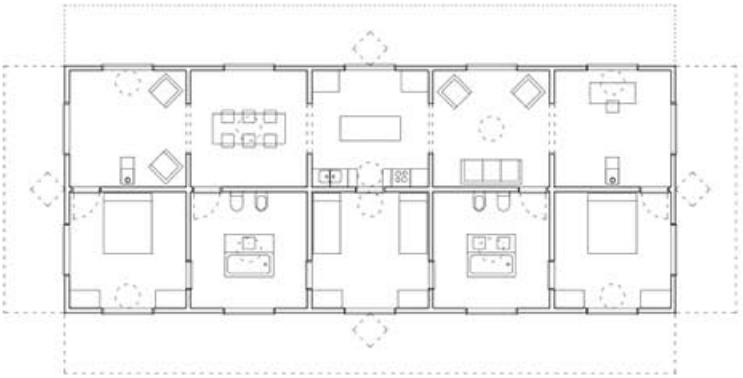
Rafael Moneo, *Museo Nacional de Arte Romano*, Mérida, Spain, 1986



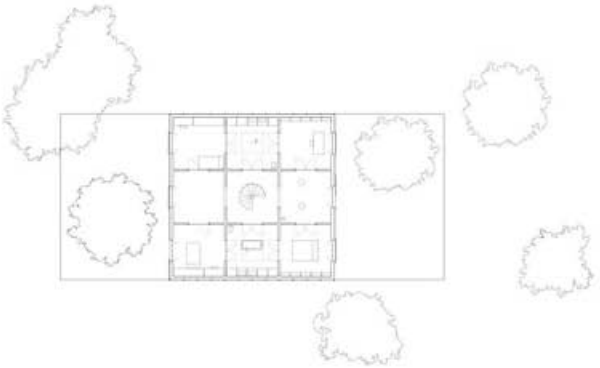




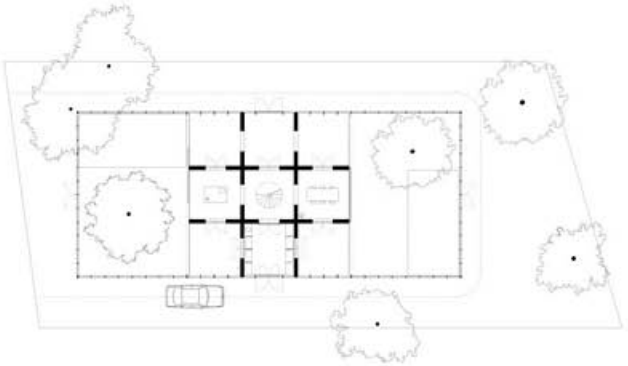




Pezo von Ellrichshausen, *Meri house,* La Florida, Chile, 2014

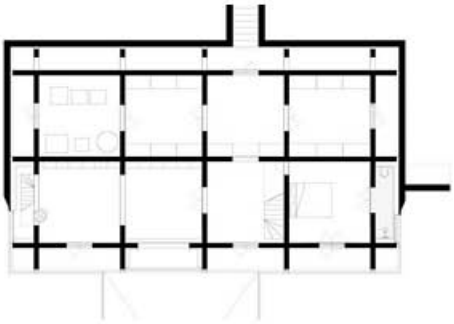


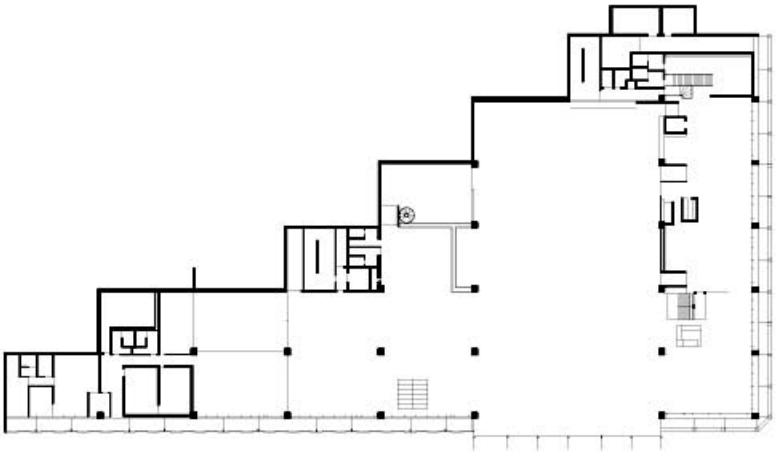
Office KGDVS, *Buggenhout, Villa,* Belgium, 2007-2012



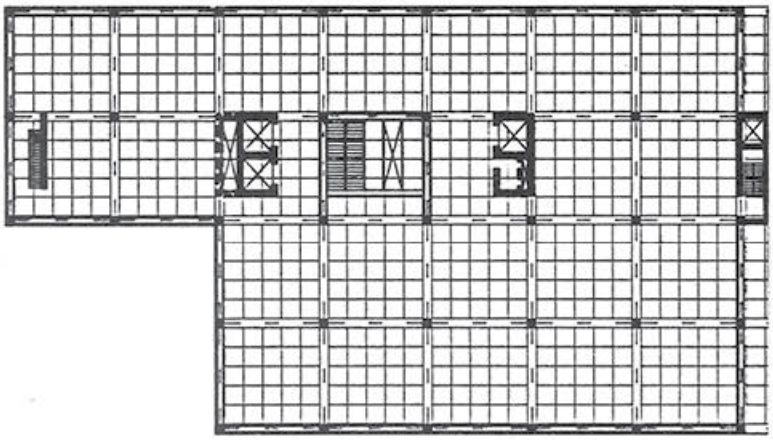
WerkBundStadt Berlin, Housing complexe, Berlin, Germany, 2016

Office KGDVS, *Villa (Der Bau)* Linkebeek, Belgium, 2011 - 2015



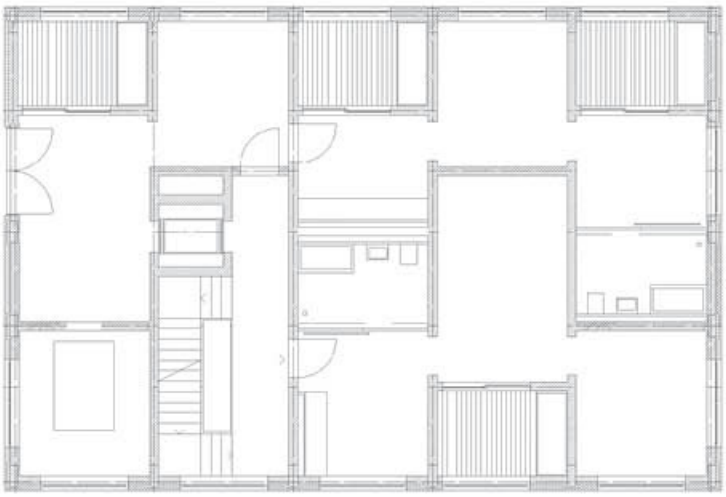


Lacaton et Vassal, *"Le Grand Syd", Polyvalent theater*, Lille, France, 2013



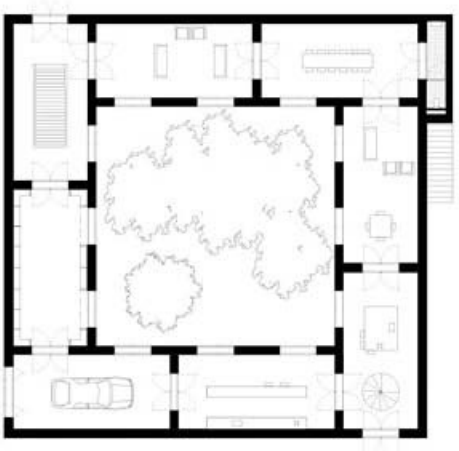
OMA, *Morgan Bank,* Amsterdam, Netherlands 1985

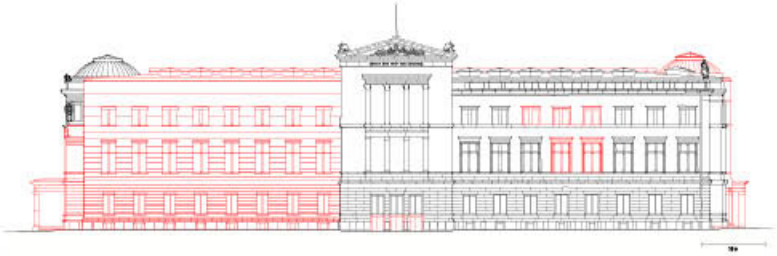
Diener & DIener, Casa A1 at Olympic Village Turin, Italy, 2006



Office KGDVS, *Weekend House,* Merchtem, Belgium, 2009 - 2012

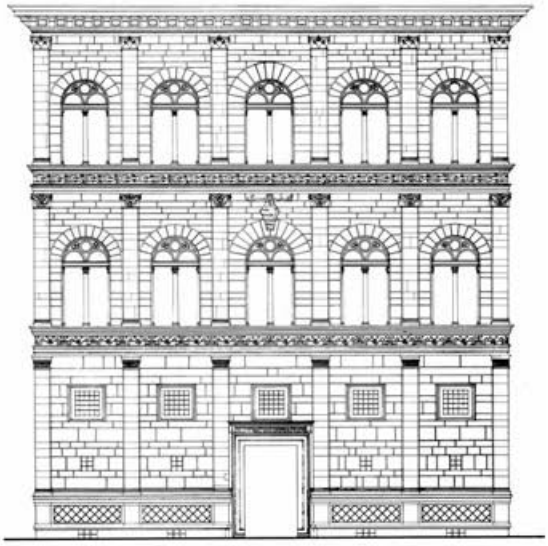
Office KGDVS, *25 Rooms,* Ordos, 2008 - 2009

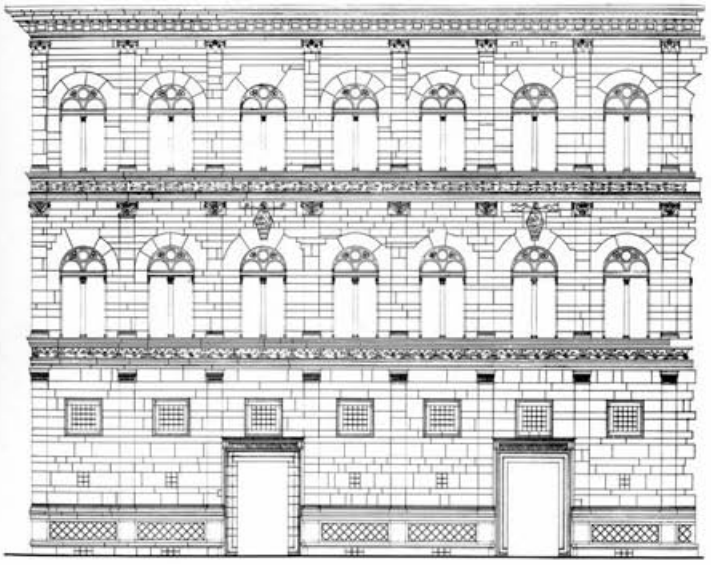




David Chipperfield Architects, *Neues Museum restauration*, Berlin, Germany, 2009

Leon Battista Alberti, *Palazzo Rucellai*, Florence, Italy, 1446-51





VENUSTAS

Durée de la signification : *Venustas*

As previously mentioned, architectural permanence is linked not only to firmness and usability, but also to what Vitruvius refers as *venustas*. If the primary sense of « venustas » is « beauty », it would be very reductive not to define it with a wider meaning. Beauty is relative to every epoch, community, and person and is strongly linked to the signification we grant it. The physical persistence of a building is always linked to the duration of the sense we attribute to it, to the intelligibility of its signification, even beyond its functional *raison d'ëtre*.
Aware of the ephemeral destiny of their creation's aesthetic, architects – and in a wider perspective, artists – have tried to address the issue through various means.

We will see in the following chapter that developing a permanent aesthetic often means addressing only permanent conditions and defining the constant, essential, and primary elements of architecture. One of the most recurrent consensus on the way to create the most perennial aesthetic is that of the search for a balance between particular and universal. Many architects believe that their building will only persist if it addresses universality on top of addressing the particularity of the site and project.
While trying to understand the origins of the great artistic works, Luc Ferry gives a clear explanation of this idea : « Il en va ainsi de toutes les grandes oeuvres et même de tous les grands monuments de l'histoire: [...] ils se sont élevés jusqu'au niveau suprême de la "singularité", parce qu'ils ont accepté de ne plus s'en tenir ni au particulier qui formait, comme pour tout homme, la situation initiale, ni à un universel abstrait et désincarné [...] L'oeuvre d'art digne de ce nom n'est ni l'artisanat local, ni non plus cet universel dénué de chair et de saveur [...] Et c'est cela, cette singularité, cette individualité ni seulement particulière, ni tout à fait universelle que nous aimons en elle »[72].
If the search for a balance between particular and universal is recurrent, the way to reach this balance can be different for everyone. Even the interpretation of what is particular and what is universal is open for debate. When for some universality can only be reached by rationality, for others it can only be created by intuition. Here our aim will be to explain the various ways to reach some universality and try to see if some can be of stronger interest for permanence.

72
Luc Ferry, *Apprendre à vivre: Traité de philosophie à l'usage des jeunes générations*, 2006

The search for scientific truth

The search for scientific truth is based on the idea of addressing only permanent conditions imposed by nature. In contrast to tradition — which is an empiric process of extracting the essential — this approach proposes to distinguish the permanent conditions imposed by nature in order to address only these essential determining elements in a scientifically precise way. The aphorisms of August Perret in *Contribution à une théorie de l'architecture*, are again clear explanations to understand this position: « Permanent are the conditions which nature imposes, transitory are those which man imposes »[73] — « Climate, its intemperateness; materials, their properties; stability, its laws; optics, its distortions; the eternal and universal meaning of lines and forms impose the conditions which are permanent »[74] — « Function, usage, rules, style impose the conditions which are transitory »[75].

In the realm of form and materials the quest for the perfect response to build according to gravity is a way to establish permanence — not only as a solid construction — but as a language of exactitude and "truth". The second part of the 18th century is the theatre of numerous tests on the resistance of materials and the efficiency of their shape. This investigation of materials, which continued until today, first started with the study of wood. Being light and resistant, wood was the most useful material at the time; it was used for buildings as well as boats which required a precise knowledge of its capacities. Soon, the rupture of other materials such as stone will be studied for building constructions. In the case of the *Eglise de Sainte Geneviève* of Paris in 1764, Jacques-Germain Soufflot pushed the resistance of stone to its limits; he reduced the walls to the minimum and refined the columns as much as he thinks is possible. This refinement raised the question of the resistance of stone. In 1802, Jean-Baptiste Rondelet published his *Traité théorique et pratique de l'art de bâtir*[76] in which he described the machines he designed to test stone resistance for *Sainte Geneviève*. Even is some mistakes were made in the protocol, this path lead to the precise definition of forms according to materiality: dimensioning the minimum quantity of material required soon made any excess of material inconceivable.

More than a century later, the rise of modern architecture led to acclaim the advance taken by engineers in the realm of architecture and aesthetics over the architects. Figures such as Le Corbusier consider engineering and industry as an immense source of inspiration for the reformation of the profession. In his famous book *Vers une architecture*, he explains that « Les ingénieures font de l'architecture, car ils emploient le calcul issu des lois de la nature, et leurs oeuvres nous font sentir l'HARMONIE [...] Or,

73
Auguste Perret, *Contribution à une théorie de l'architecture*, Paris, 1952

74
Ibidem

75
Ibidem

76
Jean Rondelet, *Traité théorique et pratique de l'art de bâtir*, 1830

lorsqu'on manie le calcul, on est dans un état d'esprit pur et, dans cet état d'esprit, le goût prend des chemins sûrs »[77].

77
Le Corbusier, *Vers une architecture*, Paris, 1923

Robert Maillart incarnates one of the heirs of an architecture based on dimensioning. Educated at the polytechnic school of Zurich and especially appreciated by architects, he is one of the most acclaimed of the time. Built in 1930, the bridge of Salginatobel represents an attempt to find the form that would cross the gorge of Salvina with the least material possible. Built out of concrete, the bridge functions more as a whole than as the assembly of parts: the deck stabilizes the structure while the arch support the bridge against gravity and the payload of the road. At the same time the arch gives a stronger lateral stability thanks to its larger dimension on each of the anchors. The structure is hollowed as much as possible and the parapet serves as a beam to reduce the material to a minimum. This vision of construction is based on the search of an ideal form: on the bare essential and the strictly necessary. A language which escapes time and fashion obsolescence thanks to its rational search of "truth". However, this "truth" refers to a purely scientific dimension of architecture which also depends of the technical capacity of construction of an epoch.

Pier Luigi Nervi understood the importance of technics along with abstract science. Motivated by the same will to establish permanent architecture thanks to a scientific approach, he writes in 1965 an article entitled « Is Architecture Moving Toward Unchangeable Forms? »[78]: the goal is clear. For Nervi, « the most important and determining factor for the architectural and constructional tendencies of today and tomorrow is given by certain absolute elements which technical progress, and above all the requirements of aero-dynamics have established, and which are stable and unchangeable within the continuous fluctuation of the tastes and aesthetic aspirations of man »[79]. But Nervi goes even further and postulates that the refinement of architecture according to technics and the laws of nature will lead to an atemporal language, where human tastes and technics will converge to generate a singular form: « In fact, I would say that humanity is heading toward forms, and perhaps toward a "style" which, once reached, will forever remain unchanged and unchangeable in time »[80].
However, if equations are considered as guides for the genesis of architecture to find in each situation the most appropriated solution — as an imitation of the way nature is generated — Nervi does not believe that calculation alone can solve any situation.

78
Niervi Pier Luigi, « Is Architecture Moving Toward Unchangeable Forms? », *Structure in Art and in Science*, 1965

79
Ibidem

80
Ibidem

In each project he first starts with an intuitive drawing which, due to his accumulation of knowledge, is often approximately correct with regard to

the laws of physics. For him, intuition has to be reasoned and emerge from a high scientific knowledge. Nervi believes intuition — when it is well-supported by logic — can transcend knowledge. The superimposition of technics and aesthetics on science blur the clear path of calculation and cannot be solely resolved by pure logic. In the introduction to the book of Mario Salvadori, *Le strutture in architecttura*, Nervi confirms that « Both the intuitive and the mathematical way are necessary to invent and proportion exactly a resistant structure »[81], fruit of a « harmonious fusion of personal inventive intuition and impersonal, objective, realistic and inviolable science of static »[82]. Therefore, while identifying immutability in the laws of physics as a way toward "truth" and permanence, Nervi also acknowledges the importance of intuition and objectivity.

81
Mario Salvatori et Pier Luigi Nervi, *Le strutture in architettura*, Milano, Etas libri, 1964

82
Ibidem

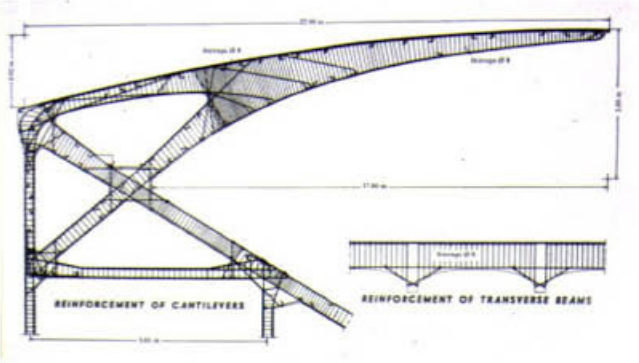
At the dawn of the 21rst century, the numeric revolution gave the promise of an architecture resolved by calculation and logical form finding. Computers can make the ideal form of a structure easy to be found according to the type of construction while scripting allows the generation of an architecture according to various parameters. However, these new languages only respond to technical needs in regard to gravity and construction, and sometimes to additional chosen parameters, but are in no ways answering to social or phenomenological needs. Therefore, the search for "truth" as understood here can only be a partial direction toward a permanent architecture. Knowing that this answer would only be partial, many architects are now investigating other paths where subjectivity takes greater importance instead of techniques that suggest a maximum of rationality and objectivity (which often serve scientific logic or functionalist approaches).

As Rem Koolhaas explains in the presentation text for the National Library of France, the essential desires of humans are also possible permanent factors to address: « The final function of architecture will be to create symbolic spaces responding to the persistent desire for collectivity »[83]. The aspirations are different depending on the people, the culture, the places and the epoch because of the unstable character of human life. However, some conditions seem invariant and do not suffer the passage of time. Therefore, concepts such as life, death, and time are atemporal; those dogmas could be the base of an architecture. In contrast, ephemeral human conditions cannot constitute the base of architecture without risking to make it as ephemeral as human habits and fashions. Of course, this is easier said than done. Identifying the essence of human life has been a quest of philosophers for millenia and is still as ungraspable as it was two thousand years ago. For that reason, we will not further investigate this thread here and will let qualified volunteers try to achieve this unattainable goal.

83
Rem Koolhaas, « Presentation text for the National Library of France, in OMA/Rem Koolhaas »

Robert Maillart, *Bridge of Salginatobel*, Switzerland, 1930

Pier Luigi Nervi, *Stadio Comunale Artemio-Franchi,* 1929-1932



The search for constructive truth

This approach claims that the materials used in construction have their own proper ways to be used; a true way to construct. Louis Kahn used to tell his students that they should ask their materials for advise while looking for inspiration. As he said, "Even a brick wants to be something", and if you want to know what they aspire to; «You say to a brick, 'What do you want, brick?' And brick says to you, 'I like an arch.' And you say to brick, 'Look, I want one, too, but arches are expensive and I can use a concrete lintel.' And then you say: 'What do you think of that, brick?' Brick says: 'I like an arch.' And it's important, you see, that you honor the material that you use. [..] You can only do it if you honor the brick and glorify the brick instead of shortchanging it »[84].

84
Nathaniel Kahn, Transcribed from the 2003 documentary « My Architect: A Son's Journey », 2003

Indian institute of management, 1974, Louis Kahn, Photocredit; Alexandre Pavlidis

Therefore, materials have their own will for Kahn; there is only one true way to use them properly in every situation. And if this way is found, and the material is respected, then the building will have an aesthetic that will never be outdated because it will always be true to the material. Like Louis Kahn, other architects such as Mies van der Rohe and Tadao Ando have tried to develop a constructive truth with different materials such as steel and concrete. Japanese architecture has also developed a tradition toward the true use of wood through centuries of refinement. This truth is not only based on the physicality of the material, but also on more subjective values such as their expression. Once established, the constructive system can be applied indefinitely in an atemporal manner.

Japanese architecture has developed over centuries a very precise way to use wood. The quality of detailing and carpentry is not only famous for its precision but also because of the way wood expresses itself. Treated with much care, the wood veins are highlighted by brush with grease. The intrinsic character of wood — the way it grew, the way it was cut, and the way it was assembled — emerges through the manner of construction. In this way, Japanese architecture tries to attain an atemporal language; a truth of construction. The usage of a single measure inspired by the dimension of the human body, the "tatami" of 180 by 90 centimeters, also express this immutable standardization of an ideal construction.

As Kahn, Mies believed that « Architecture starts when you carefully put two bricks together »[85]. Therefore, the simple act of construction is not enough to produce architecture; only a 'careful' use of materials will belong to the realm of architecture. It is to this truth of construction that Mies refers when he quotes St. Augustine as the best expression of architect's work; « beauty is the brightness of Truth »[86]. After the Nazi rise to power, Mies van der Rohe emigrated to the United States in 1937. There he started the second part of his carrier. In the U.S., a clear shift in the architecture of Mies appeared when he realized that the rise of industry had to lead to a new architecture. For Mies, « Each material has its specific characteristics which we must understand if we want to use it. This is no less true of steel and concrete »[87]. The rise of the new materials through the generalized industry needed to be guided by a new manner of construction: those industrial materials were asking for a proper way to be used; an industrial construction truth. During the rest of his carrier Mies worked on finding the proper details for every construction situation. His famous open corner steel details were the result of hundreds of sketches and research aiming for a constructive truth. However, the 'truth' sought by Mies is not the same as that of Kahn. If the skyscrapers of Mies van der Rohe appeared as a rationalist quintessence of construction, Kahn in fact famously pointed out that the Seagram Building — or any other of his skyscrapers — was hiding the shear supports of the buildings. In opposition to the City Tower[88] of Kahn, all diagonal supports were hidden in the core walls of the skyscraper. If Kahn considered this abstraction as an act of dishonesty, Mies chose to hide the diagonals to reinforce the clarity of the appearance of his construction; he lied to intensify the 'truth'. The case of the Seagram Building's diagonal is not an exception in the method of Mies, who use this strategy in all of his buildings. The case of the constructively-unnecessary I-beams on the façade of the Seagram building — or the similar Westmount Square buildings — is one of the clearest examples. Frustrated by the necessary covering of the structural I-beams for fireproofing requirements, Mies

85
Ludwig Mies van der Rohe, «Architecture starts when you carefully put two bricks together. There it begins.», quotation, 1959

86
Ludwig Mies van der Rohe, «there›s nothing that shows the sense and the aim of our work better than St.Augustine's profound expression: beauty is the brightness of Truth.», *Confessions* of Augustin D'Hippone, 397-401

87
Mies van der Rohe, From his inaugural address at the Illinois Institute of Technology, 1938

88
Louis Isidore kahn, City Tower, project, Philadelphia, Pennsylvania, 1952-57

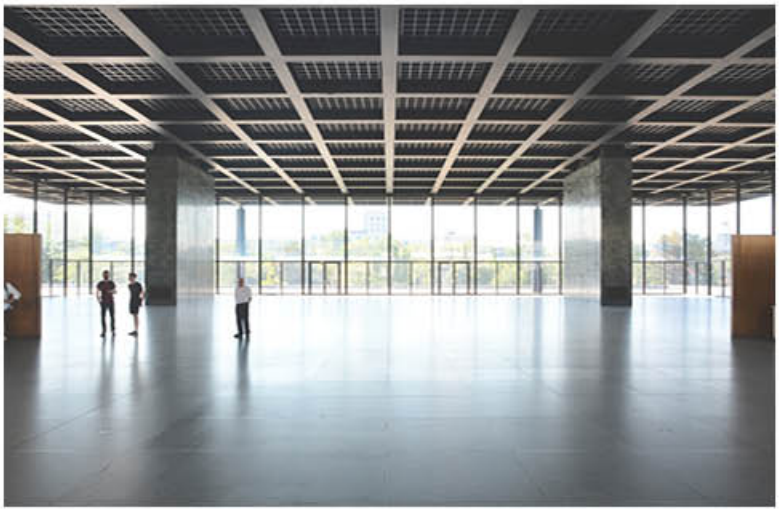
decided to use smaller I-beams on the façade to re-establish the visual clarity of the skeletal frame of an unfinished skyscraper. By the use of I-beams all across the façade as mullions between glass bays — and at a higher rhythm than the actual structural pillars behind the curtain wall — Mies intended to create an idealized structure that expressed honesty further than the bare truth could have. As William J. R. Curtis explained later on, *« Just as Sullivan, over half a century earlier, had adjusted appearances to express an idea of* structure, so Mies 'lied in order to tell the truth' about the steel frame »[89]. In this sense, Mies gave a higher value to the production of the clarity of construction he aimed for than to the pure honesty supported by Kahn. On the one hand one could say that the pure 'truth' of Kahn's work is an attempt to express the will of eternity by its disconnection to any particular epoch; his 'truth' is supposed to be timeless because of its purity. On the other hand, Mies also aims to attain a state of timelessness while he tries to transcend the simple 'truth' by what he believes to be the higher 'truth' of expression. In some projects, the honesty of Kahn seems to attain an incredible state of clarity that would be difficult to challenge (even for Mies...). However, in the case of the skyscrapers, maybe that Kahn's City Tower does not reach the high level of clarity and timelessness that the Seagram Building of Mies succeed to provide with his 'corrupted' truth.

89
William J. R. Curtis, *Modern Architecture Since 1900*, 1982

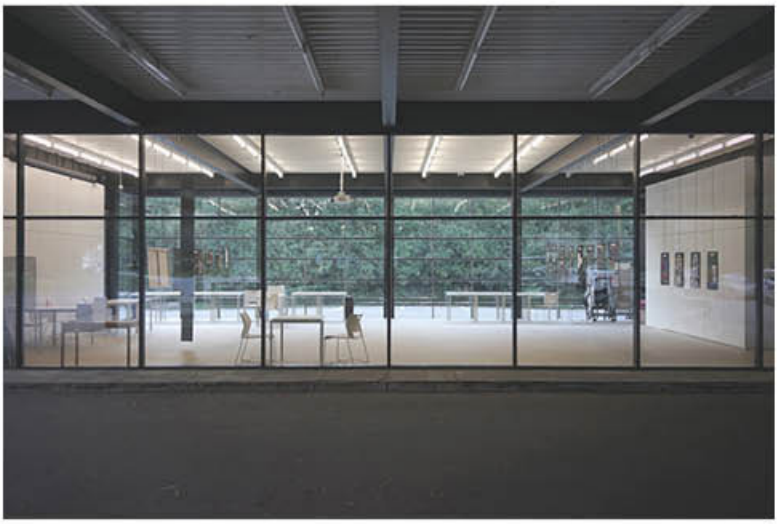
In Japan, Tadao Ando was inspired by his country's precise use of wood when he tried to find a new language for the emerging material: concrete. In his first project — the Tomishima house built in 1972-74 — he experimented with concrete for the first time, making tests by

Mies Van Der Rohe, *Neue Nationalgalerie*, 1968, Photocredit; Alexandre Pavlidis

himself. From the beginning he embraced the molded character of the material and gave a importance to the impressions of the formwork. The character of the building is strongly defined by the eight tie holes on each of the large formwork panels. In his following projects, Ando studied the solidity of concrete and chose a rather typical grey color that he then used throughout his carrier. At that time, a few projects allowed him to test the dimensions of the formwork module and the number of ties until he determined in 1976 the final concrete language that he uses in all his works. For Ando, the Azuma house is a real manifesto that defines the essential elements of his architecture. The definitive formwork measures the same size as the Japanese tatami, while 6 ties are spread regularly on the surface of the concrete. The repetition of the same modular formwork expresses the pouring system of concrete molding and is highlighted by the regular ties. To be sure of attaining a perfect concrete quality, Ando conducted tests using cones to verify the density of the material and avoid excess water in the recipe. What is so specific about Ando's architecture is that he defined a language expressing what concrete wanted to express and then used it as an unchangeable and atemporal expression, following the Japanese culture of wood construction. He attempted to express the true nature of concrete in order to advance toward a permanent expression that could persist through time.



Mies Van Der Rohe, *Neue Nationalgalerie*, 1968, Photocredit; Alexandre Pavlidis



Mies Van Der Rohe, *Gas station*, l'Île-des-Sœurs, Montreal, 1969, (Photocredit; Alexandre Pavlidis)

Mies Van Der Rohe, *Gas station*, l'Île-des-Sœurs, Montreal, 1969, (Photocredit; Alexandre Pavlidis)

Mies Van Der Rohe,
Westmount Square buildings,
Montreal, 1969, (Photocredit;
Alexandre Pavlidis)

Mies Van Der Rohe,
Westmount Square buildings,
Montreal, 1969, (Photocredit;
Alexandre Pavlidis)

Kongōbu-ji temple, Koyasan, 1593, (Photocredit; Alexandre Pavlidis)

Kongōbu-ji temple, Koyasan, 1593, (Photocredit; Alexandre Pavlidis)

Tadao Ando, *Section, Azuma House*, Osaka, 1976

The Absolute Architecture of Hegel

G. W. F. Hegel postulates in his *Lectures on Aesthetics* that art is not a simple imitation of nature but rather a materialization of the platonic word of ideas — in opposition with the usual vision that emerged since the Roman philosopher Seneca declared that « All art is but imitation of nature »[90]. In the Hegelian sense, art « emanates from the absolute idea »[91]. The 'Absolute' comes from the latin *absolutus* — set free, made separate — it is what is 'not determined by something else' aside from itself. Therefore, its materialization emanates from its essence, its 'idea'; « the determination of shape is its own completed totality, it is the pure concept. »[92]

Elaborating on this logic, the artist is the one who tries to grasp the essence of a 'thing' — the idea — and reveal it through materialization in the most direct way possible. Consequently, the 'idea' and its materialization should be one and the same thing; « the Absolute is an identity that does not differ from subject and object »[93]. In this vision of art, the usual questions regarding beauty and meaning are put on hold. The meaning is the idea; finding the absolute relation between the object and the subject — the form and its content — is the ultimate goal. Generated by itself, the form of an Absolute art is not defined by any relation to the world and is thus entirely a-contextual; accordingly, its autonomy makes any modification of its environment consequence-less and provides to Absolute art a timeless character of permanence.

If Nietzsche says that « The price of being an artist is to experience that which all non-artists call form, as content, as 'the real thing' », the role of the artist is also to reveal it to others. And therefore, to provide to the user a superior consciousness of the object, to enrich him, and, in the case of architecture, maybe even give him a state of higher consciousness.

Including architecture in the realm of art, Hegel cites the temples of the ancient Greeks as an example of absoluteness for its disconnection from nature and its autonomy as an object that self-contains its entire logic, outside of any relationship. An Absolute architecture is created when form and content — materialization and idea — merge into a singular entity where meanings are identical to their appearance.
But what does this approach really mean in terms of design and how could such a singularity be attained? How does one attain what Paul Valérie defines as « Those masterpieces that are due entirely to the One and of which I have just told you that they seem to sing of themselves. »[95]? The first step in this methods seems not easy but quite clear; it will be to define what is really the essence of a 'thing', what is the 'idea'. To do so, one needs to try to attain this definition by the use of various characteristics

90
Lucius Annaeus Seneca, *Moral Letters to Lucilius*, middle of 1rst Century

91
Georg Wilhelm Friedrich Hegel, *Lectures on Aesthetics*, 1835

92
Ibidem

93
Georg Wilhelm Friedrich Hegel, *Wissenschaft der Logik II*, 1812-1816

94
Paul Valérie, *Eupalinos or the Architect*, 1921

that can only translate an approximation of the 'idea'. To provide an example, in the case of a project for a library in Paris; before thinking of its materialization, the exercise would be to grasp what the idea of a 'Parisian library' really is. What does it represent? What is it really here for? What does it mean to be a library in Paris? Some architects such as Zumthor will try to address this question in a phenomenological way; how should a library in Paris feel? What smell should it have? What lightness? What texture? What atmosphere? The finding of the essence has something mystical which goes beyond a strict logic and will only be attained by a complex dialectic of rationality and intuition based on knowledge and memory. It is a long and rigorous process which hopes to force the emergence of a transcendence that will reveal the true self of a 'thing'.

However, after the finding of the true 'idea', comes the difficulty of its materialization. On this matter, Louis Kahn's process of creation proposes a path to realization. Expressed with different words, his quest for meaningful « Beginnings »[95] also follows the intention to reveal the essence of the object. Kahn's method is based on the dichotomy of the 'form' and the 'design'. For him, the definition of the 'form' is close to Hegel's definition of the abstract 'concept' or the 'idea' ; it is an un-measurable and form-less will — « What characterize one existence will from another »[96]. Filled with spiritualism, Kahn's 'form' includes feelings and thoughts because it is a human's creation and should therefore also evoke the feeling and symbolism of timeless human values common to all mankind. It transcends the individual and conventions is order to express the conceptual essence of a project. Ultimately, the 'design' is the realization of the 'form'; it belongs to the realm of the measurable and takes in consideration the specific circumstances of the context and the program. 'Design' concerns the practical and the functional. If the 'form' has been correctly defined, the design should emerge smoothly and almost cannot be wrong. The realization of the project should keep the 'form' and its meaning intact. For Kahn, the essence of a project is also in being a creation of human will, and should therefore also explicit what he calls the « desire to be—to express »[97]. Accordingly, « Everything that man makes must be fundamentally un-measurable, the measurable only being the servant of the un-measurable »[98]. In this sense, the process of a project is not only a search for the essence of architecture but also for the essence of human beings.

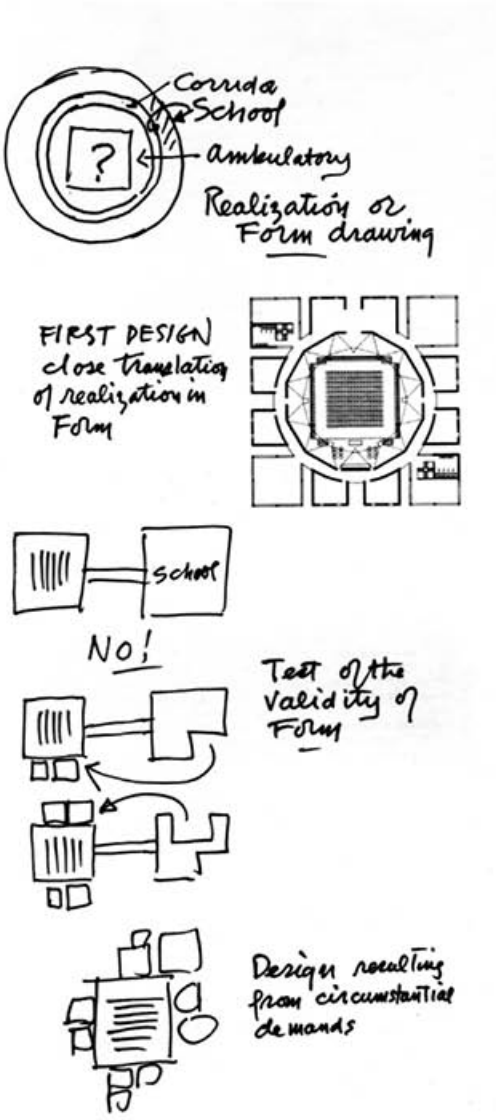
With these considerations, one can say that Kahn's method proposes to materialize the abstract 'idea' through its combination with the practical concerns of 'design'. In this sense, he proposes to create a balance between the particular and universal — making his architecture functional and yet timeless and un-measurable.

95
Louis Isadore Kahn, « I love Beginnings », *International Design Conference in Aspen, Colorado*, 1972

96
Louis Isadore Kahn, « Silence and Light », *Lecture at ETH Zurich*, 1969

97
Ibidem

98
Ibidem



Louis Kahn, *First Unitarian Church, Rochester*, Sketch Design phase, 1962-69
Explanation of the 'form' and 'design'

The search for emotional truth

The 19th and 20th century are marked by attempts to rationally understand what causes people to believe that something is beautiful. Questions on proportions, colors or any factors that could affect our perception of beauty are analyzed.

During the 1920s, the review *L'Esprit Nouveau*[99] expressed a strong will to link apparently opposed temporalities: contemporaneity and intemporality. Mainly directed by Le Corbusier and Amédée Ozenfant, the articles were driven by a desire for the avant-garde and a return to order. Of course this strategy related to the challenge of the epoch to reconciliation the industry and the arts. If — as he wrote in *Vers une architecture* — Le Corbusier believed that « the American engineers crush the agonizing architecture with their calculations »[100], he still interrogated the durability of the new aesthetic offered by technical constructions. In the article « Pérennité » (1924), Le Corbusier specifically raised questions about the Eiffel Tower effect; « This emotion; of what quantity? and for how long? »[101]. Elaborating on this matter he dissociated issues that any work must address: at the same time be in phase with the spirit of the epoch and conform to the great and eternal laws of art. To highlight the recurrent principles of composition that had survived the passage of time, the articles reassessed great works from the whole of history.
Since the mid-19th century, the idea of a « scientific aesthetic » based on constant laws such as the laws of perception helped the emergence of a rational aesthetic that is objective and eternal. Articles such as the famous *Introduction à une esthétique scientifique*[102] of Charles Henry from 1885 are provide a strong base for Ozenfant and Le Corbusier.

99
Le Corbusier et Amédée Ozenfant, *L'Esprit Nouveau*, 1920-1925

100
Le Corbusier, *Vers une architecture*, 1923

101
Le Corbusier, « Pérennité », *L'Esprit Nouveau*, 1924

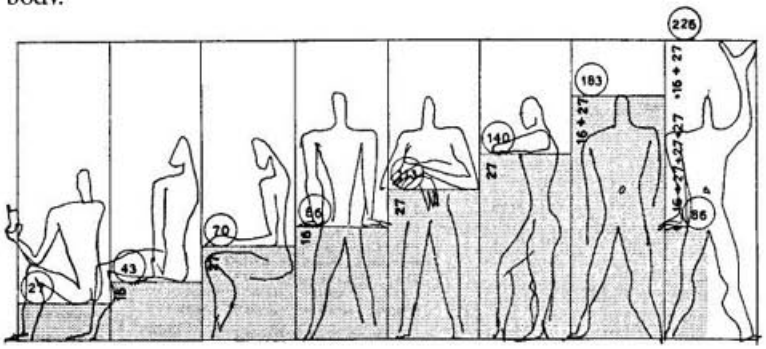
102
Charles Henry, « Introduction à une esthétique scientifique », La Revue contemporaine, 1885

The review made a simple distinction between two functions in any work. First, the utilitarian in a large sense: including strictly functional needs and technics, and also symbols and documentary or social needs. This first function is also at the base of the apparition of any 'style' produced by the collective force of the era. Defined by relative sociological criteria, it has an instable character which is constantly changing and adapting to society. Secondly, the emotional function, the scientific aesthetic: linked to universal criteria. This definition assimilated the artistic emotion to perceptive mechanisms and processes identical for any human. Considering the variations between individuals negligible, the approach allowed Le Corbusier to investigate the possibility of using regulating lines or primary geometries as a trans-historic composition technique. The study of ancient art enabled to identify absolute aesthetical values; permanent principles of composition. As Le Corbusier declares in *Vers une architecture,* « Architecture is the art which par excellence, reaches the

state of Platonic grandeur, mathematical order, speculation, perception of the harmony by the proportionate relations »[103].

The first emerges from the collective and addresses the collective, whereas the second is created by the individual and addresses the individual. The aesthetic value is deeply human but not social. For Le Corbusier it is a superior emotion going beyond the epoch which can appear in individuals such as Phidias or Michelangelo.

Later on, Le Corbusier's aim to define universal rules of aesthetics is clearly declared by the subtitle of his book Le Modulor, published in 1945: « Essai sur une mesure harmonique à l'échelle humaine applicable universellement à l'architecture et à la mécanique »[104]. Using the famous golden ratio defined by the Fibonacci sequence, Le Corbusier establish a series of measures based on declinations of human dimensions. His search finds its roots in the Renaissance pursuit of a style based on the translation of the humanist ideal of the human body and its relation to geometry as the measure of all things; represented in a paradigmatic way by Leonardo da Vinci's *Homo Vitruvianus* (1490). To justify his claim, Le Corbusier explains that the golden ratio is already present everywhere in the human body and that the series is based on the height of the belly button, the top of the head and the height of a human with his arm raised. If this ratio is defining all the relations of the body, it should therefore also define the relation of the body to its environment. Following this logic, architecture should also be measured by the specific Fibonacci sequence of the human body: the Modulor.
To provide ancient roots to his theory, Le Corbusier develops an entire chapter entitled « Vérifications Matérielles et coda »[105]. In this chapter, he describes many existing buildings that are considered beautiful and in which he highlights the existence of the golden ratio in the design. From Chaalis abbey to the doors of the Great Seraglio of Istanbul and the Temple of the forum of Pompeii, for him, the beauty emerged from the use of the golden ratio and its relationship to the measures of human body.



Le Corbusier, Illustrations extraites de l'article « Tracés régulateurs », *l'Esprit Nouveau*, n°5, fév. 1921

103
Le Corbusier, *Vers une architecture*, 1923

104
Le Corbusier, *Le Modulor*, 1945

105
Ibidem

Primary forms and elements

Le Corbusier defined architecture as « the masterly, correct and magnificent play of masses brought together in light »[106]. He continues and highlights the potential of those forms to be seen as universally beautiful; « cubes, cones, spheres, cylinders or pyramids are the great primary forms which light reveals to advantage; the image of these is distinct and tangible within us without ambiguity. It is for this reason that these are beautiful forms, the most beautiful forms. Everybody is agreed to that, the child, the savage and the metaphysician »[107]. Therefore, he considers that any architecture should be based on this geometry and that every element of a construction should be made to reinforce their form rather than diminish it; « The surface is in most cases a wall with holes for doors and windows. These holes are often the destruction of form; they must be made an accentuation of form »[108]. In *l'Esprit Nouveau* N°1, Le Corbusier writes an article on the « examination of primordial conditions »[109]. He declares that « There are simple forms triggering constant sensations. Modifications intervene, derivate, and lead to the primary sensation [...], with all the intermediate range of combinations »[110]. In this sense, everything can be described as a derivation of primary elements. As he says « Everything comes down to spheres and cylinders »[111]. This will to reduce any construction to a limited number of essential elements testifies to his search for universality as a way to create permanent architecture which could not only address the present but also the future.

106
Le Corbusier, *Vers une architecture*, 1923

107
Ibidem

108
Ibidem

109
Le Corbusier, « Article », *L'Esprit Nouveau N°1*, 1920

110
Ibidem

111
Le Corbusier, *Vers une architecture*, 1923

While looking for primary elements, architects hope to find the origins, and therefore, the quintessence of architecture or even the quintessence of human expression in the case of primary forms. Squares, circles, triangles, and many other simple geometrical shapes along with their three-dimensional versions, are all quite rare in nature. While walking in a landscape, we are surrounded by very complex elements whereas humans seem to build their own environments using the most intelligible forms as possible. In this sense, human creations seem to follow the rules of legibility, and are therefore specific because of the excessively simple geometric character. Orthogonality is the most common relation in architecture and expresses an intention to reach control and order. Could it not be said that the use of primary forms has a common purpose in the establishment of order? In both cases, architecture holds the role of an enclave of control for the inhabitant, a frame of reference: the clarity of its design is necessary for them to face the wild and complex character of life and nature. In an ungraspable world where one cannot understand the laws that are directing one's life, architecture proposes an enclave of control and understanding. And that is precisely what architecture has to offer, a comfortable frame, a frame of reference to live in a healthy

denial. Somehow, primary forms are extremely human and using them is an attempt to reconnect with an original human need which happens to also be one of the permanent purpose of architecture; producing a frame of control and comfort in opposition to nature.

In 1950-51 and later in 1959, the career of Louis Kahn encountered a clear shift[112] that lead him to the emergence of a very active architectural production after his trips to Europe. Travelling around Mediterranean – Italy, Greece and Egypt – his vision of an architecture based on a balance between the particular and the universal blossomed. During his trips he identified the 'particular' as the site condition and harmony: a unified and identifiable character of the buildings, territory and light. To grasp this harmony his sketches became a crucial tool. Later on, Rome, Greece and Egypt gave him the answer to his search for universality. As the cradle of occidental architecture, Kahn saw in the old Mediterranean civilizations the possibility of connecting with the origin and, therefore, the primary architecture, the universal. The purity of the Egyptian volumes and the Greek use of archetypal elements caused him to realize the power of the primary forms as a universal language. These influences will later be very obvious in designs such as the famous tetrahedral ceiling of the Yale Art gallery, or the composition of the Dhaka Parliament of Bangladesh. He did not make historical quotations in order to touch collective memory but rather to return to the fundamental values of architecture.

112
Marta Pieczara, « Louis I. Kahn: l'influence du voyage sur l'évolution de la théorie »; Bruno Marchand (dir.), *Perennites: textes offerts a Patrick Mestelan*, 1ere ed., Lausanne, Presses polytechniques et universitaires romandes, 2012

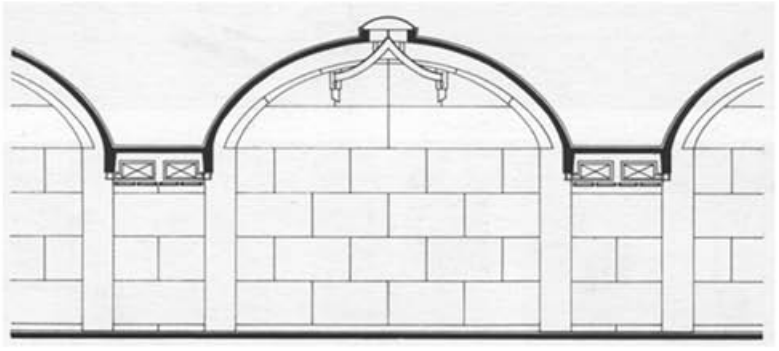
The contact with the ruins of Rome lead him to think that – as August Perret declared – « Architecture is what makes beautiful ruins »[113]. For Kahn, the passage of time relieved the Roman architecture from their functions, let them wide open to reveal their quintessence; the ruins are the very image of an architecture that lasts despite the flow of time. This belief will lead him to work on the bareness of open structures that would let the wind pass through its openings in the same way as in ruins. For the unbuilt Meeting House of the project of the Salk Institute, he imagined double walls that would serve for climate control — through the filtering of the sun and wind — while at the same time giving the building the timeless expression of the ruins of Rome. In this sense, we could say that in parallel, Louis Kahn also tries to attain universality by addressing only permanent constrains such as sun, light, temperature, wind and water. The perforated walls of the Dhaka building reinforce this interpretation; protecting the interior spaces from direct sunlight and allowing passive ventilation, they are a vital tool for the usability of the project.

113
Jean-Louis Cohen, Joseph Abram, et Guy Lambert (dir.), *Encyclopédie Perret*, Paris, Monum, éditions du patrimoine : Moniteur, 2002

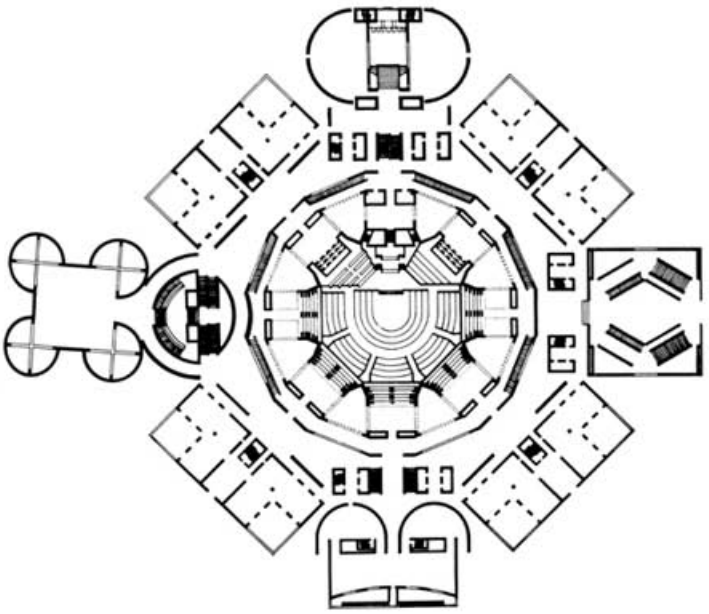
During his trip to Carcassonne and Albi in 1959, Kahn focuses on the potential of the thick walls surrounding the castle and the cathedral. He is fascinated by their gravity and recognize in them the potential to generate any architecture. After his trip, instead of primary forms he starts to base his work on the fundamental elements of architecture:

columns, walls, slabs, vaults, cupola. Through this process he hopes to reduce his language to an invariant and universal base for all architecture. Conforming to this logic, he uses a thick hollow wall to protect the central space of the Unitarian Church of Rochester and develops the concept of servant space. Thereby he reduces the elements of his design to the minimal element of the wall, while maximizing its utility. His project for the Kimbell Museum is another telling masterpiece expressing his aim for an essential architecture. The building is made solely of long vaults supported by simple walls, and attention is focused on making them as simple and grand as possible. The vaults are positioned to create a rhythm that alternates two dimensions; one for the primary spaces and one for the servant space which is sometimes occupied by partially thickened and hollowed walls to receive secondary programs. The precast concrete vaults are carefully constructed to produce a smooth surface, generating an ideal reflection for the lighting system to illuminate the artworks, while the secondary section provides air ventilation, circulation and storages. Through this refinement, Kahn is able to produce beauty in the timeless aesthetic of the simplest primary elements under the flow of light that he holds in such high esteem.

Louis I. Kahn, *Kimbell Museum*, Fort Worth, United States, 1972



Louis I. Kahn, *Kimbell Museum*, Fort Worth, United States, 1972

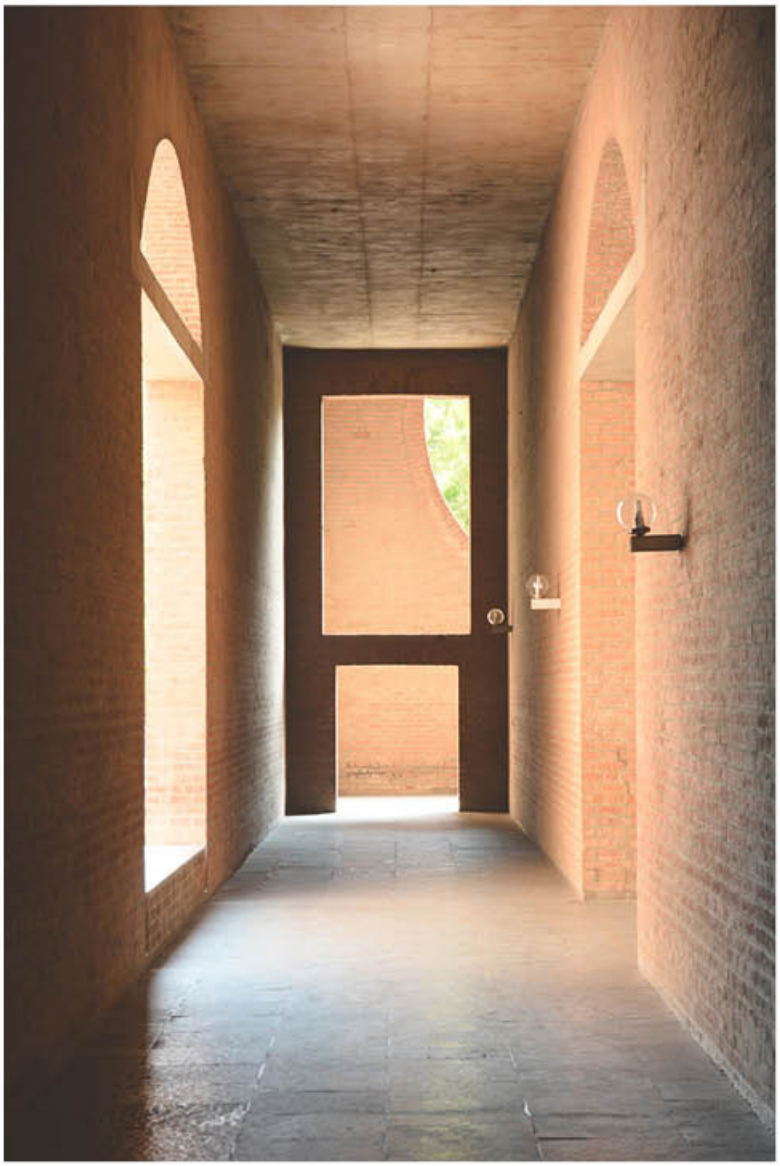


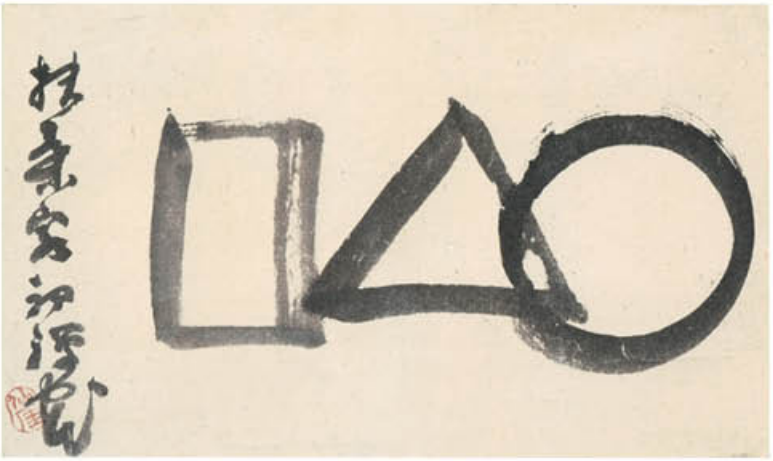
Louis I. Kahn, *National Assembly Building of Bangladesh*, Dhaka, Bangladesh, 1961-1982

Louis I. Kahn, *National Assembly Building of Bangladesh*, Dhaka, Bangladesh, 1961-1982

Louis Kahn, *Indian institute of management*, 1974, Ahmedabad, India, (Photocredit; Alexandre Pavlidis)

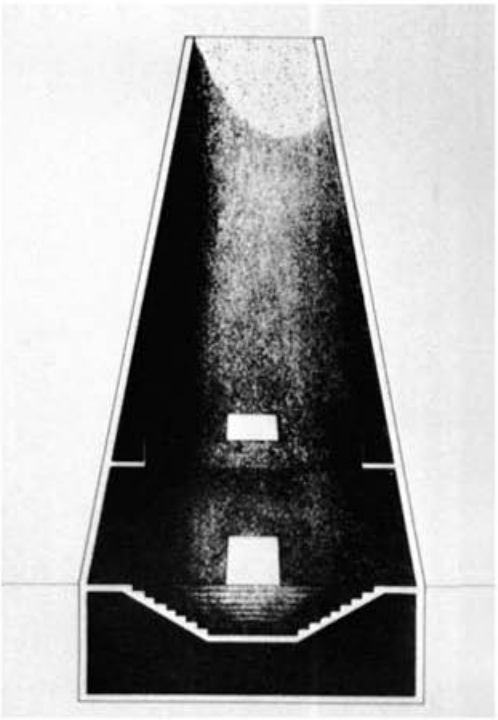
Louis Kahn, *Indian institute of management*, 1974, Ahmedabad, India, (Photocredit; Alexandre Pavlidis)





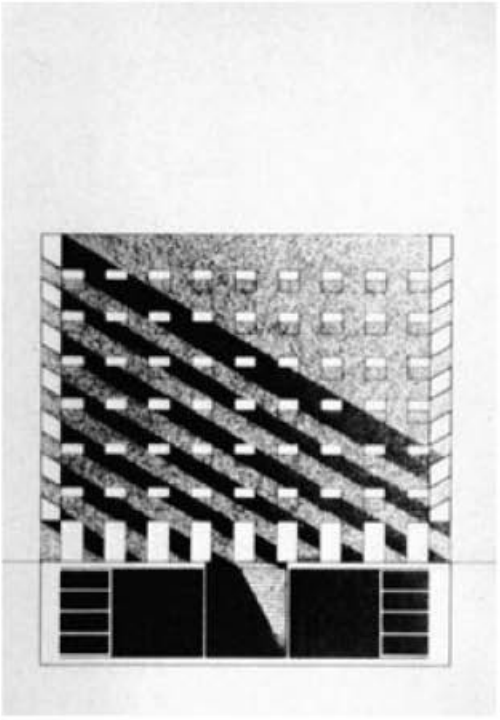
Sengai Gibon (1750-1837), *The universe, The circle-triangle-square is Sengai's picture of the universe*

Aldo Rossi, *City of the Dead*



Aldo Rossi, *San Cataldo Cemetery,* Modena, Italy 1971

Aldo Rossi, *San Cataldo Cemetery,* Modena, Italy
1971

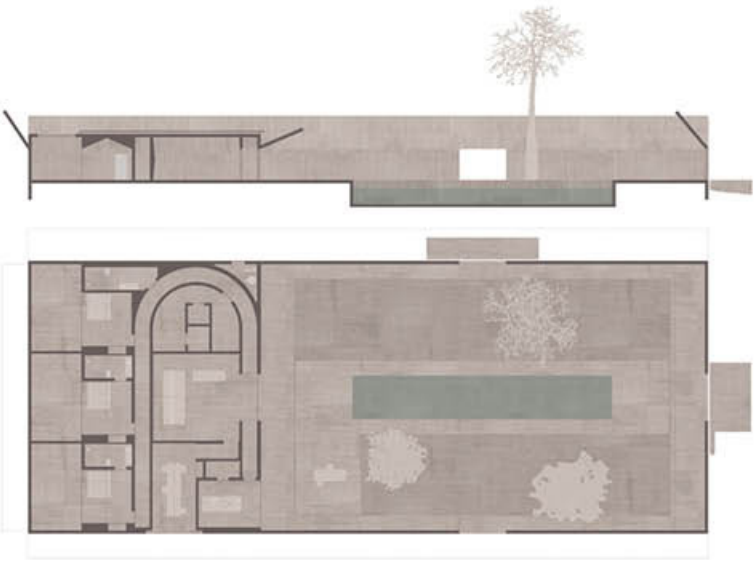


Tadao Ando, *Amphitheaters, UDEM campus in Monterrey,* Mexico, 2013

Tadao Ando, *Chichu Art Museum,* Naoshima, Japan, 2004

Valerio Olgiati, *The Yellow House,* Switzerland, Flims, 1999

Valerio Olgiati, *Villa Além,*
Portugal, 2014



Tradition, Time as the Revealer of Truth: *Veristas filia temporis*

Tradition holds a very important position in the search for a permanent architecture. It represents an architecture legitimized through the passage of time and thus belonging to a very long time frame addressing universality. In this sense, tradition is specific to a locus, but not to a time frame; tradition emerges thanks to the continuity of history and can serve permanence in an empiric way.

If time can be seen through a Petrarchan prism as the always triumphantly irresistible destructive power, it can also be seen as a powerful ally. The Latin aphorism *Veristas filia temporis* affirms that truth is the daughter of time; and by doing so, supports the Renaissance theme of Time as the Revealer of Truth by the paradoxical destruction of false ideas. Time is the strongest design tool of tradition; it is the tool of purification. Only the most appropriate evolutions resist its passage. To distinguish the traditional from the rest of the production, one needs to study the permanent recurrence, the invariants, the common.

After the world war two, the question of the reconstruction of Europe along with the reconsideration of the legitimacy of the Modern architecture led to the revisiting of traditional architecture. With its strong cultural patrimony, its largely destroyed cities and an active avant-garde, Italy offered an ideal setting for the research of invariants and their potential to be accommodated with new technologies. Lead by Ernesto Nathan Rogers from 1953 to 1965, the magazine *Casabella* changed its name to *Casabella Continuità* to express the strong will to re-establish the continuity of history through the re-interpretation of tradition. Articles such as « Continuità »[114] or « La responsabilità verso la tradizione »[115] are part of a recurrent series of Rogers' influential texts that will define the Italian context of reconstruction. In 1966, the publication of Aldo Rossi's *L'Architecttura della Città*[116] quickly becomes a cornerstone to understand the importance of the recurrent typologies in the city. He presents the courtyard and the corridor typology as traditional unchanging elements in the Italian environment. However, it is interesting to note that the courtyard is not only an invariant in the Italian cities, but also in almost every culture; independently from any style, climate, period, or construction tradition. In this sense, some typologies seem not only timeless but also universal because of their independence from any region. Rossi will continue this study later on with *La costruzione del territorio nel Cantone Ticino*[117]. Plans of villages from the Canton of Ticino highlight the regular repetition of typologies with a striking simplicity. Entire villages such as Brontano seem to be generated by the same simple base and developed by infinite variations; showing the timeless character of an

114
Ernesto Nathan Rogers, « Continuità », *Casabella continuità n.199*, 1953

115
Ernesto Nathan Rogers, « La responsabilità verso la tradizione », *Casabella continuità n.202*, 1954

116
Aldo Rossi, *L'architettura della città*, Milano, 1966

117
Aldo Rossi, Eraldo Consolascio, Max Bosshard, et Daniele Vitale, *La Costruzione del territorio: uno studio sul Canton Ticino*, Milano, Clup, 1979

elementary architecture that only become stronger with time, refinement and declination. The shape and the type of construction emanates from the empirical research of vernacular architecture; only time can purify the design, eliminate the unworthy details and maintain what is needed. Accordingly, the unstoppable character of temporality can be seen once again as the powerful ally of design; the 'Time as the Revealer of Truth'.

Tradition produces buildings which are somehow banal and therefore discrete. While extravagant and inventive architecture can fall out-of-fashion as soon as the trends change, tradition produces architecture which has already proved its value and its persistence through time.

Auguste Perret declares in his *Contribution à une théorie de l'architecture*: « He who, without betraying the constraints of a modern building programme, nor the use of modern materials, creates a work that will always seem to have existed, that is, in a word, banal, is entitled to feel content »[118]. Therefore, the difficulty is to balance the traditional elements of the past and the new elements what will become traditional in order to produce an architecture anchored in the continuity of history. Of course, discovering the future of tradition in the contemporary production is not an easy goal to reach.

118
Auguste Perret, *Contribution à une théorie de l'architecture*, 1952

For Adolf Loos, the only tradition worth using is classicism. However, his vision explains quiet clearly the importance of discretion and banality for durability. According to him, one must follow the principle of discretion; « An article of clothing is modern if, having dressed for a particular occasion, and being at the center of culture and in the best society,

Plan extracted from *La Costruzione del territorio: uno studio sul Canton Ticino*, Aldo Rossi, Eraldo Consolascio, Max Bosshard, et Daniele Vitale, Milano, Clup, 1986

one attracts the least possible attention »[119]. For Loos, the same logic applies for building than for clothing, « a building must have a discreet appearance. Did I not say one day that is dressed in a modern way the one who attracts the least attention? »[120]. Loos describes an important link between discretion and durability. For him, the incessant renewing of ornaments is like an ephemeral fashion reducing the durability of objects. « The functional object endures as long as the material from which it is made; its modern value comes from its solidity. When a functional object suffers an ornamental digression, its durability is abridged, because then it is submitted to fashion »[121].

119
Adolf Loos, « DIE HERRENMODE », *Spoken into the void 1897–1900*, 1898

120
Adolf Loos, « Ornament and Crime », *Cahiers d'aujourd'hui (issue 5)*, 1910

121
Ibidem

A new definition of Classicism

Historically, Classicism considered the classical language to be universal and atemporal because it was the origin of architecture and thus its quintessence. However, the new interest expressed by contemporary architects toward Classicism carries a very different meaning and might even lead to a different definition of Classicism that could inform our search for long term signification.

The universality proposed by the usual interpretation of traditions is very specific to a region and a culture. Therefore, the study of tradition could remain very circumscribed to its locus, however taking one more step toward its understanding opens an entirely new door to its potential. If the search for invariants in architecture leads to the discovery of tradition, what does the search for invariants in all traditions leads to? Dimitris Pikionis explains in « Casabella N°638 », that the « search for the invariable, [is a] search to find the essence, what makes all tradition pretty similar at the end, the essence, the only part that worth being built »[122].

122
Dimitris Pikionis, « Identità della tradizione », *Casabella N°638*, 1967

Eclecticism considers traditions to be all different — from different spaces or different times — and therefore uses them complementarily for different needs. This vision leads to the creation of hybrid architectures such as the work of Jože Plečnik. Using languages from various horizons as well as old and new materials, his work produces an impossibility of being linked to a single epoch. Accordingly, his frequent use of materials from existing ruins found on site, reinforces the timeless character of his constructions. The title of the monograph dedicated to his work – *Architectura perennis*[123] — confirms the desire to reach an atemporal architecture through Eclecticism. However, this approach seems to be taking what is specific to each referenced architecture rather than what is common to all those references. But could it not be possible that the intersection of traditions be leading to the essence and therefore to an architecture with stronger and more stable signification?

123
Jože Plečnik, France Stele, et Anton Trstenjak, *Architectura perennis; Jože Plečnik 1872-1927*, 1941

The vision proposed by Eclecticism on traditions is opposed to the vision of Dimitris Pikionis; that all traditions converge. In this sense — as Pier Paolo Tamburelli explains in San Rocco 4 — classicism could be considered as the ensemble of traditions, « because they are the same »[124]. The original attempt to extract a Classical and atemporal language with regard to a classical period such as the ancient Greek or Roman was based on the aim to establish a fixed language: « as an unchanging and readily re-usable repertoire »[125]. Salvatore Settis explains in *The future of the Classical* that it is « inherently static in that it designates an historical period that is by definition over »[126]. In opposition, classicism as « a conscious backward glance toward the 'classical' »[127] is by definition changing and subject to interpretations. As Europe has a «recurring obsession» to interpret classical periods in order to establish a common ground for arts and architecture, this analysis becomes denser with time. For Tamburelli, this infinite refinement allows classicism to be considered as a tradition. Contemporary researches study the architecture of the Renaissance as the architects of the Renaissance studied ancient Greek and Roman architecture. The vision of Classicism of Tamburelli — among many others contemporary practicing architects — is a wider definition than that of Settis. For them, Classicism is a conscious backward glance toward past productions rather than toward a classical period. In this sense, the works of the past constitute a whole repertoire which has been refined by the passage of time and can be used at any time to produce new architecture.

Their Classicism tries to gather the complexity of the realm of architecture and to extract clarity from it — it is a tradition which accumulated experiments and evolved through time — a very rich ensemble with no need for inventions. As explained before, Classicism is not fixed and will always be evolving, but it mainly requires precise observation and careful use rather than novelty. For them, the refinement of Classicism tends to allow an architecture immune to fashion obsolescence, and therefore to allow the creation of permanent works. The Classicism that they propose is an eclectic one; not referring to a single classical period, but to all past architecture, because they believe that the past is singular and unified. However, the difficulty of the approach lies is the finding of the common denominators in all traditions; only thoroughly careful studies of the plans of history may be able to reveal the essence of an atemporal architecture.

To accept this vision of tradition, one must believe that they are all similar and comparable; that the essential is invariable. In the review El Croquis dedicated to Office KGDVS, Christophe van Gerrewey, explained that « what architecture is all about led them to the conviction that architecture has worked with more or less the same principles over centuries »[128]. Following this path, Kersten Geers quoted in San Rocco 1, an afterword

124
Pier Paolo Tamburelli, *Article in San Rocco 4, FUCK CONCEPTS! CONTEXT!*, 2012

125
Ibidem

126
Salvatore Settis, *The future of the « classical »*, Cambridge, UK ; Malden, MA, Polity, 2006

127
Ibidem

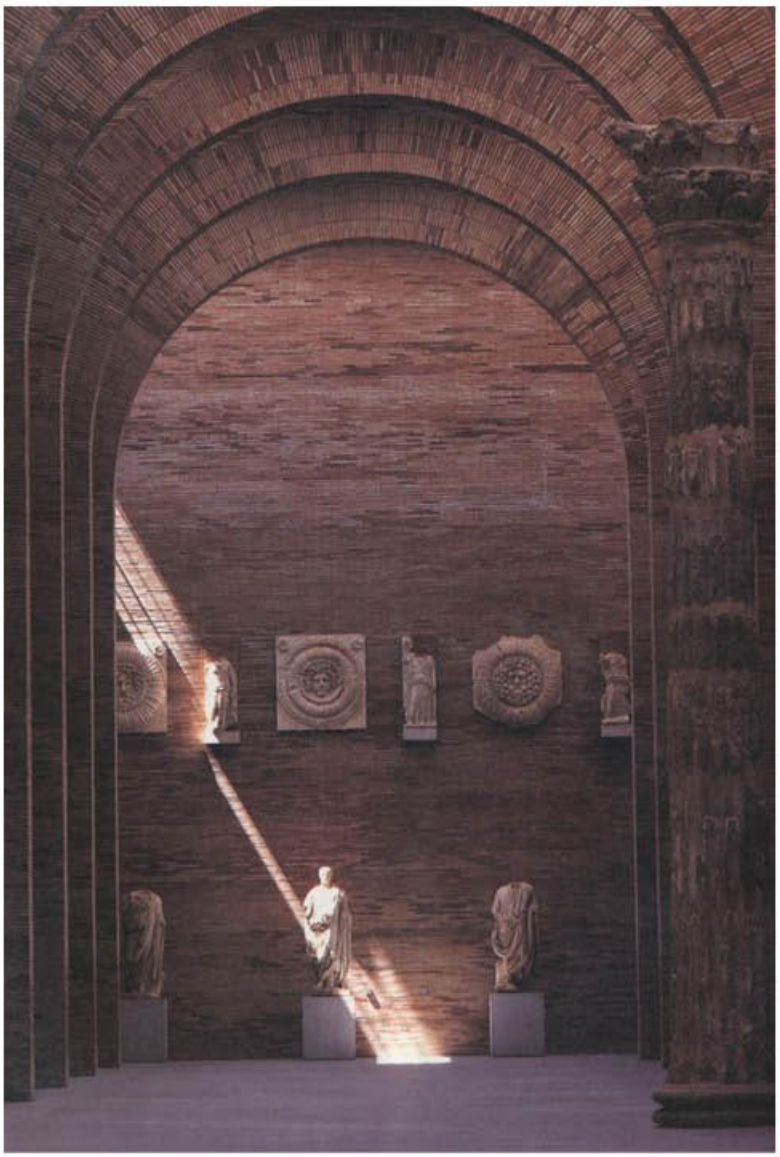
128
Office - Kersten Geers, David Van Severen, Fernando Márquez Cecilia, Richard C. Levene, Kersten Geers, et David Van Severen (dir.), *Office - Kersten Geers, David Van Severen, 2003-2016: acciones priomordiales - primary actions*, Madrid, El Croquis Editorial, 2016

from John Hejduk to the monograph of Stanley Tigerman in order to try to highlight the consistency of plans through history — and therefore the continuity of any architecture as one indivisible discipline:

« When I examine his plans it occurs to me that, throughout the history of architecture, plans have changed the least. This, I think, is a curious phenomenon. It is sometimes stated that the plan is a horizontal section, in relation to the well-known vertical section of architecture. So it may be, but I think architectural plans are something else. I think they are architecture in a state of sleep. Plans are sleeping architecture that, in the extreme, are architecture in death. We tend not to want to disturb architectural plans, for they are so still and so quiet, abstract and awesome. The plan shows the death of the soul of architecture. It is an X-ray of the soul. The plan returns architecture to a state of timelessness. The plan has no need for clothes or ornamentation; it carries with it an inevitability. The plan is sacred and inviolate. »[129]

129
Stanley Tigerman (dir.), *Stanley Tigerman: buildings and projects, 1966-1989*, New York, Rizzoli, 1989

Rafael Moneo, *Museo Nacional de Arte Romano*, Spain, 1986
The understanding of the persistent buildings of history and their common denominator inspires the designs of Rafael Moneo



Silence, the theatre of nature

The proverb says « speech is silver; silence is golden ». Many architects often refer in different ways to an architecture which would be silent. An architecture of modesty. In some cases, this silence refers to a certain extends to banality whereas in some others it refers to simplicity and essentiality (which is far from being banal). But in both cases they claim that this silence is an essential element to avoid the possibility to be one day outdated, and therefore, to try to reach permanence. If different visions of this approach exist, none of them can ignore that the highest quality of silence is to leave open the possibility for others to speak.

In the first part of this writing we have explained the vision developed by Aldo Rossi of an architecture that would be the theatre of possible scenarios that life could unfold. In such a vision, architecture is a scene, and not an actor. It should therefore remain silent and only allow or induce the action. An excessively talkative architecture would necessarily restrain the possibilities of action and therefore limit its permanence. In the case of Rossi, the silence takes the shape of primary geometric forms put in relation to create complexity and a full of tension environment. This poetic drives to an atmosphere of suspended reality[130]; a moment out of time; a stretched present charging for the upcoming events.

In this sense, the approach to a silent architecture of Tadao Ando could be related to the one of Rossi — as he actually did express himself on the matter in similar terms. Once asked to explain what was the nature of architecture for him, Ando responded in a straight — but accurate — way; « Chohatsu suru hako », translated as « the box that provokes »[131]. Which should not be understood as a rhetorical provocation but rather as the catalyst of the action; the same belief than Rossi in an architecture as a scene that could induces the action. A confirmation of this interpretation can be found in one of his interview that highlights the potentiality of the void and its so-called 'silence'; « If you give people nothingness, they can ponder what can be achieved from that nothingness »[132].
The idea of an architecture that would function like a scene also applies to the expression of a building itself. For Ando, the absence of expression in a building is desirable to let nature — the true ornament — express life and its cycles to provoke inner reflection: « I do not believe architecture has to speak too much. It should remain silent and let nature in guise of sunlight and wind »[133]. With these considerations, one can assume that the attempt to express through ornamentation is doomed to generate architectures that will one day be outdated and will anyway never be as strong as the expression of nature. Therefore, the architecture of Ando is simplified to

130
Can Onaner, *Aldo Rossi architecte du suspens en quête du temps propre de l'architecture*, Genève, Metis Presses, 2016

131
Tadao Ando, « *Tadao Ando 1995 Laureate Biography by Edward Lifson », The Pritzker Architecture Prize*, 1995

132
Ibidem

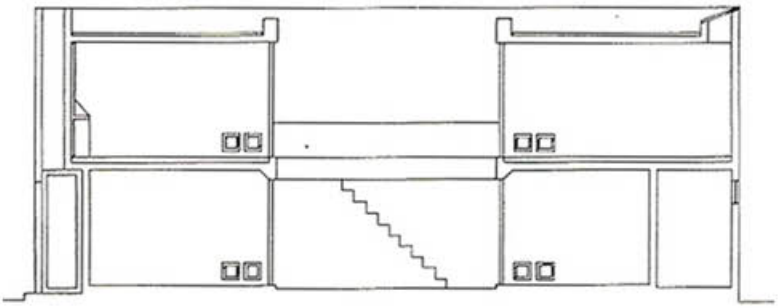
133
Tadao Ando et Michael Auping, *Seven Interviews With Tadao Ando*, Third Millenium Pub, 2003

the minimum variety of material — mostly concrete — chosen partially for their capacity to reflect nature; « The colors of nature that enter the edifice through the glass, it is already enough color I believe »[134]. Studied very carefully, he developed his one specific use of concrete, with his own formwork normalization. Using the same material in every project, his work neutralizes materiality to provide an ideal canvas for nature to express itself. Very introverted, his designs limit the interaction with the exterior world in order to only let the primary natural elements react on his architecture: water, light, wind. His position could be condensed in this large — but necessary — quotation: « Such things as light and wind only have meaning when they are introduced inside a house in a form cut off from the outside world. I create architectural order on the basis of geometry, squares, circles, triangles and rectangles. I try to use forces in the area where I am building, to restore the unity between house and nature that was lost in the process of modernizing Japanese houses during the rapid growth of the fifties and sixties »[135]. In this sense, what some people describe in Ando's work as reductive is not depriving the user from its sensory richness. On the contrary, his restraint focuses the senses on the play of light and nature on his silent architecture.

134
Tadao Ando, « *Tadao Ando 1995 Laureate Biography by Edward Lifson », The Pritzker Architecture Prize*, 1995

135
Ibidem

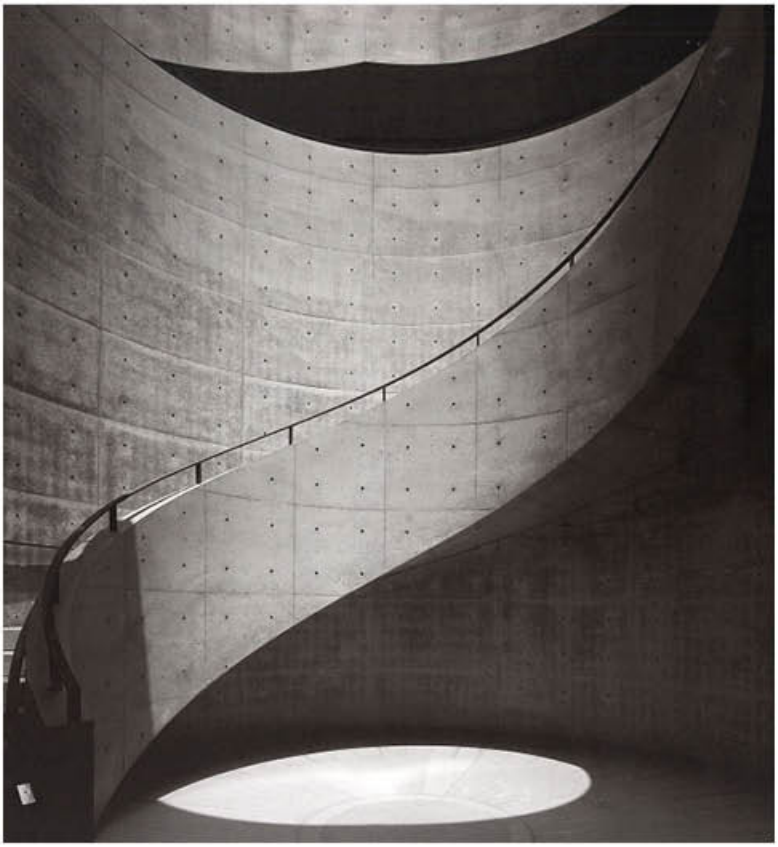
The case of the Azuma house could be considered as a real manifesto for Tadao Ando concerning this matter. Entirely made of concrete, the project has no windows toward the exterior but has large opening towards a two story courtyard. For such a small city house, the importance given to the courtyard that uses one third of the site and divides the building in its center is very telling. Ando provides to nature the space to express itself into the house; letting le wind, the water and the light interact with the exposed concrete.
We can fairly assume that this approach derives from the architectural heritage of Le Corbusier and Louis Kahn since they explicitly opened the path of designing with shadow and light (After Etienne-Louis Boullée).



Tadao Ando, *Section, Azuma House*, Osaka, Japan, 1976

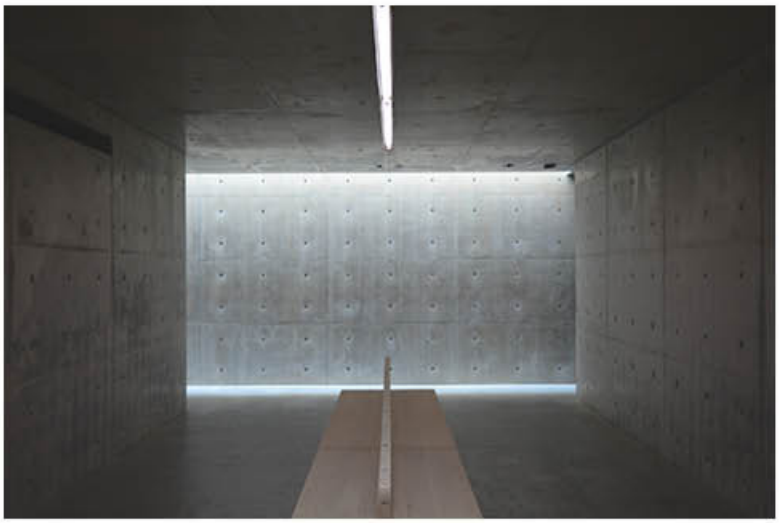
Many among the contemporary architects also developed the use of nature as a way of expression for buildings; including Peter Zumthor with the Therme of Vals, Axel Schultes with the Baumschulenweg crematorium or Alberto Campo Baeza who once said in his lecture that « Architecture built of time and light is resistant to time and change, and aspire to classical permanence ».

Cases like the Pantheon of Rome are standing examples of the timeless aesthetic that an architecture based on the display of nature can procure. It is one of a rare example of ancient architecture that can be appreciated by everyone without needing any distance and knowledges to be understood. Its open oculus, along with the simplicity of the coffering of the ceilings and its general form, provides an ideal receptacle for the light, wind and water that drip through the open sky. Its signification is ungraspable, and yet, displays a simple and timeless clarity.

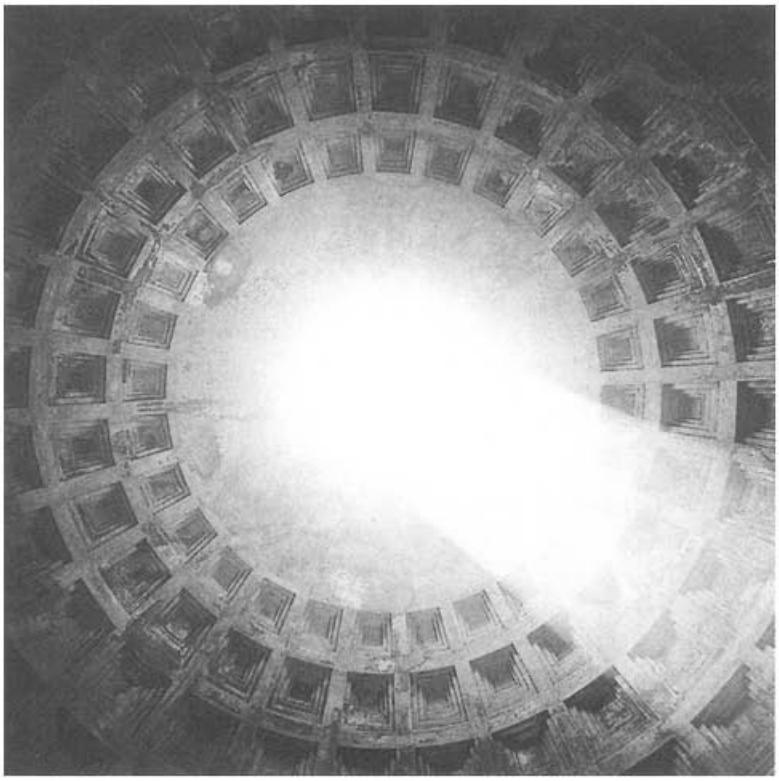


Tadao Ando, *Hyogo Prefectural Museum of Art*, Japan, 2002

Tadao Ando, *Chichu Art Museum,* Naoshima, Japan, 2004, (Photocredit; Alexandre Pavlidis)



Pantheon, Rome, Italy, 113–125 AD



Signification always renewed

Most of the approaches that we have highlighted in this chapter address the idea of an architecture the never loses its signification because it remains relevant through the changes of time. However, in a book published in 2012 and entitled *Pérennités*[136], an analysis by Martin Steinman of the work of Diener & Diener reveals another perspective on this matter; an architecture which — as a work of art — would never be outdated because it would never be fully grasped.

Henri Focillon explains in *Vie des formes*, that « the character [of the work of art] is to welcome all the possible [...] and, so to speak, it is the eternity of its present »[137]. In this sense, he defines a great work of art as an ever-renewed present; a work which can always carry new signification every time it is viewed. Therefore, the action of vision is non-passive and can change depending on the state of mind or context, and also changes phenomenologically.

The idea of the perennial character of a building is similar to Focillon's vision of the work of art. In regards to the *Domus* building by Rasser & Vadi in Basel, Roger Diener expresses his fascination for a silent building which has multiple significations when interrogated. The building is a very simple prism at street corner. The same band of windows goes crosses the length of both façades at each of the floors above ground floor. However, a bit of attention leads one to realize that the framings and divisions of the windows of each floors are different. Vertical mullions separate zones of clear and sanded glass while the intensity of their rhythm change at every floor. As Diener says, this complexity gives the impression of «light movement» in the facade. At any instant the logic of the facade is ungraspable; as soon as its sense seems understood, an exception is found and another reading appears to replace it.
Steinman finds the same intentions in the office building of Kohlenberg built by Diener & Diener in Basel in 1992-1995. As the *Domus* building, it sits at the street corner and has five floors above ground floor. Identical windows are positioned on the two facades at every floor, however, their horizontal position shift. The windows lean against one or the other edge of the facade. The simple dual possibility for every windows allows enough variety to give it a complex reading. Furthermore, its apparent simplicity produces the feeling that you can understand the rules directing the positioning of the windows — however, trying will soon lead you to realize that any attempt produces a new signification.

The ambiguity between an apparently readable system and a more complex interpretation is the key to their attempt toward an atemporal character in architecture.

136
Martin Steinman, « Forme et Durée », Bruno Marchand (dir.), *Perennites: textes offerts a Patrick Mestelan*, 1ere ed., Lausanne, Presses polytechniques et universitaires romandes, 2012

137
Henry Focillon, *Vie des formes*, Paris, 1934

Dierner & Dierner, *Office building of Kolhenberg*, Basel, Switzerland, 1992-1995

Rasser & Vadi, *Domus*, Basel, Switzerland, 1959

FIRMITAS

Construction of Permanence: *Firmitas*

Locating «Firmitas» as the centre of architecture, Auguste Perret's aphormism declares that « It is by construction that the architect fulfills both the permanent and transitory conditions »[138]. Therefore, a robust construction is of primary importance for the establishing of permanence because « Architecture is, of all the expressions of art, that which is the most subject to material conditions »[139].

But what really makes the physical persistence of a building? One possibility is a solid construction with qualities —static, sealing, insulation, usability, comfort, etc. — that do not decrease over time. This means a construction which would either not age or would age well. One cannot ignore construction if he aims to create a permanent architecture; the example of Aldo Rossi, who was developing a language addressing eternity shows proves this rule. Even if buildings like the Modena cemetery or the Gallaratese housing complex were trying the reach universality and atemporality, their materiality and construction made them ruins soon after completion. In comparison, the brick buildings of his colleague Giorgio Grassi are still in perfect state and could pretend for a sort of permanence.

It is interesting to note that natural and artificial materials have a different relation to time. Natural materials — wood, stone, metal — often age well when they are treated and assembled properly. Natural materials are already part of a process of evolution which incorporates changes without losing qualities. Artificial materials, however, have a different temporality; manufactured, they are not part of a natural process and tend to be unable to age without damage. Artificial materials tend not to age at all or to age badly. Whereas aluminum seems to be entirely immutable and permanent, some plastics lose their properties in a few years.

Evolution of the notion of solidity

Throughout history, the notion of solidity has changed dramatically. At first, the notion of solidity was empirical and based mainly on the massiveness of construction. From the Egyptian pyramids to the baths of Caracalla, it is the heavy construction of stone or brick which assured the physical as well as visual aspect of solidity. After the famous treatise *De Architectura*[140], the Vitruvian heritage imposed another type of solidity based on proportions as a central principle of architectural theory and an important connection between mathematics and art. For him, proportions that have a pleasant aesthetic were also solid. Elaborating on this argument, Vitruvius set human proportions as the ideal base for the composition of classical orders, thereby ensuring aesthetic harmonization

138
Auguste Perret, *Contribution à une théorie de l'architecture*, 1952

139
Ibidem

140
Marcus Vitruvius Pollio, *De Architectura*, 15 B.C.

and solidity. If it is true that architectural proportions distinguished themselves from the human body in the following millenary, regarding solidity the importance of proportions remained primordial. Why would many architects consider gothic churches to be unstable even as they had stood for centuries? Because the proportions of gothic architecture do not enounce clearly its resistance. Solidity was not only physical, it also included the perception of solidity, which means that solidity was directly linked to forms and proportions. To dimension elements of architecture or even bridges, fixed ratios where established to ensure good construction. Architects never really escaped from this relation between order and construction; a chimera equating form and solidity.

The arrival of the scientific revolution brought a new understanding of solidity. At first empirically and then mathematically, it became possible to determine the strength resistance of every material. Methods are now employed to predict the response of a structure under loading and its susceptibility to various failure modes takes into account the properties of the materials such as its yield strength, ultimate strength, Young's modulus, or Poisson's ratio. Engineers and architects developed a much more complex understanding of solidity which tries to account for every possible influence and to transform the abstract laws of physics into a concrete reality. The assembly of elements became very important. While solidity was previously based on intuition, today the best constructive solutions are sometimes completely counterintuitive: a clear disconnection between perception and solidity have now occurred. Therefore, the perception of solidity often has no more importance: only the scientific solidity defined by engineers behind the scenes is relevant and its expression is opaque for the user.

The search for a material with a perfect resistance

The search for the most resistant material continued persistently over the past few centuries. The development of modern concrete is a good example[141]. During the 18th century, observations of ancient constructions with extraordinary resistance brought about the emergence of the myth of Roman cement. The impressive dimensions of the vaults in the Villa Adriana or the exceptional resistance of the sea walls of the port of Ostia were witnesses of a material of great strength. The idea of an artificial stone that would be more resistant than natural stone pushed the contemporary searcher to imagine that many ancient monuments such as the pyramids, the dolmens of Stonehenge or obelisks were actually not made of natural but rather artificial material; concrete.

If those interpretations were later proved wrong, it remained true that Roman cement possessed particular properties that would soon be

141
Roberto Gargiani, *Concrete, from Archeology to Invention, 1700-1769: The Renaissance of Pozzolana and Roman Construction Techniques*, 2014

discovered. Near Rome, quarries with a specific sand called Pozzolana displayed mysterious resistance to water and a better solidity through time. Carried by the myth of Roman cement, Pozzolana was exported all over Europe during the 18th century — except in places where similar material such as the Hollandaise Trass or the German volcanic Tuff could be found, — until scientific discoveries made at the end of the century allowed provided a better understanding of the material's chemical properties. Knowing that the access to pozzolana was limited, foreign countries such as France tried to find a similar material within their borders. While John Smeaton was building a light house in stone, he discovered that the most resistant mortar was not made out of the hardest limestone as Vitruvius thought. Even if Smeaton did not realize it at this point, the clay present in some of his recipes was the element producing mortar with greater resistance to water and time.

The research of Yohann Friedrich John in Germany or Louis Vicat in France led to the understanding of the importance of clay and the proportions needed to produce a concrete resistant to water; the production of artificial hydraulic lime became widely possible around 1820. From that moment on, concrete began to be used more and more in the field of construction, first with public infrastructures and later for private buildings.

The use of metal immerged in the concrete to compensate for the lack of resistance against tension became more frequent during the 19th century. Two ways to create this hybrid material were developed: either by using a metal mesh homogenously through the form or as metal reinforcements placed specifically within a mold. In 1887, Wayss & Freytag published the Brochure de Monier: a sizing tables which would led to the generalization of reinforced concrete. Construction systems and patents would then be developed on the way to the 20th century by engineers such as François Hennebique and even architects.

Today reinforced concrete is the most used material for construction. Research have led to a level of refinement which makes it a very permanent material: resistant to all types of strengths and natural corrosion, it is also easy to make it a generic material with constant property (as opposed to natural materials). Concrete is clearly revealing the shift from natural material to artificial material that occurred during the last two millenaries. If material were used «as found» in the past, we are now mainly using material which have been processed or/and assembled to make hybrids with numerous qualities; some kind of supermaterials. Glass, insulation, concrete, wood among with many others are all used mainly as composite materials which combined significantly different physical or chemical

properties. Even wooden panels are most of the time plywood panels full of glues and chemicals. Even if those materials seems to have much more properties than the natural ones, their use entirely changed our perception of materiality. While material was an inconstant element that could change and have different properties and defaults depending on the piece or provenance, artificial materials are now constant and predictable. However, natural materials where part of a growing or ageing process and while therefore continue to evolve when used in a construction. Stone is a geological fragment of a process of crystallisation whereas wood is a fragment of a growing process in a tree. In this sense, these materials already exist through duration whereas artificial material such as plastic were made in an instant and are not part of a time process. Is it why artificial material seem to be fixed out of time and lose their qualities as soon as they change (if they do change)? Is it why natural material seem to be able to change without displeasing us?
The consequence of the use of natural or artificial materials on the permanence of architecture are deep and the question is too wide to be elucidated here without oversimplifications. However, the question needs to be opened for debate.

The idea is the most permanent material

« Everything relating to nature, essentially, is doomed to disappearance. We are born, we die, we disappear, only ideas, art, the artificial seem to offer some promise of permanence »[142]. Accordingly, reasons which goes beyond physical materiality might offer a deeper promise of permanence; the Platonic world of ideas might possibly be the fortress of permanence. In *L'Architettura della città*[143], Aldo Rossi gives an example of the most recurrent immaterial permanence in the city; the cadastral structure which perseveres in the urban fabric despite architectural, urbanistic or even political changes. The traces of the original Roman grid system based on the famous Cardos-Decumanus in many contemporary cities are indisputable. Cities such as Côme, Florence or Zaragoza contain/are defined by vestiges of an immaterial decision taken two millenaries ago. Immaterial geometricalization is present not only in cities but also in any division of territory, from agricultural fields to private housing plots. The domestication of the American continent was a great demonstration of the immaterial geometry's power to control reality. Supported by the medium of the law, extremely courageous and visionary gestures applied future city plans on the surface of an empty, wild nature with no assurance of development. When Simeon De Witt formulated the Commissioners' Plan of 1811, the visionary proposal of an immense grid applied on most of Manhattan, what ensured the development of this immaterial system? If development was not determined by any materiality, the common

142
Elias Zenghelis, « « . . . Ou le début de la fin du réel », interview with Patrice Goulet », *l'Architecture d'aujourd'hui 238*, 1985

143
Aldo Rossi, *L'architettura della città*, Milano, 1966

decision to follow this plan and the laws ensuring it proved to be more effective than any restrictive physicality. While it is legitimate to say that roads materialized this grid, they only appeared with time and anchored in a deeper way the planned geometricalization. Here the physicality of the pavement, the sidewalks, the buildings, and the whole city only appeared as a process of sedimentation confirming, years after years, its legitimacy.

In the countryside, it is impressive to observe that lines materialized only by a row of trees can persist through the development of the territory. It is their position and «raison d'ètre» which protect them from destruction. A strategic position such as an alignment with the symmetrical axis of an ancient villa will guaranty their permanence. Cases such as the Palladian Villa Emo or the Castle of Chambord have strong axes — without materiality, but nevertheless with the power to structure the territory.

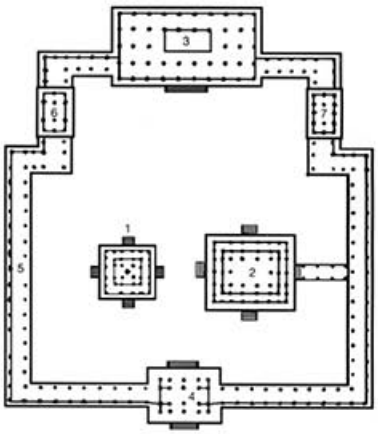
Thus, it is perhaps ideas and consensus that are the materiality of permanence: the only materiality that does not erode through the passage of time; a materiality that can defeat architecture's nemesis. However, it should also be clear that if ideas are never materialized in any ways, their existence remains theoretical and do not have any impact on the physical world. If the idea is the base of permanence, it will always be dependent of the physicality we provide to it.

Maintenance and solidity

The persistence of a material in time depends not only on its intrinsic properties but also in the way it is treated. Maintenance is a primary factor in the permanence of any architecture. In Japan, the entire notion of permanence is based on maintenance. The Japanese use of stone or metal was never an important part of the architectural culture of the country. Instead, the country developed strong knowledge of wood; a material which does not possess the long lifespan of mineral materials. Consequently, they developed a mastery of wood maintenance including the use of oil and various treatments that expended the life expectancy of a wooden construction. However, this alone does not explain why are some of wooden Japanese buildings still standing after centuries. The Hōryū-ji temple, located in the province of Nara in Japan, was built around the middle of the 6th century and is considered to be one of the oldest temple still standing. Yet, the wooden pieces are not the same than the original ones; if they were, the temple would be entirely rotten. Nevertheless, the notion of permanence is different in Japanese culture; in their vision, the recurring replacement of a wooden building's pieces is a measure of perseverance. As numerous fires have highlighted, any degradation or destruction is followed by a nearly identical reconstruction of the original temple. Based on this idea, the permanence of Japanese architecture is made of a perfect and always renewed materiality; an architecture out

of time; atemporal. This denial of the corrosive nature of time is only achieved through maintenance and the shared commitment to repeatedly renew the architecture's elements.

The importance of maintenance is also present in Western culture. The Eiffel Tower, for example, is only prevented from disintegrating by the recurrent application of a protective layer of paint that prevents corrosion. Only the agreement to maintain the tower as a proud symbol for Paris leads to its preservation. In this regard, it is interesting to observe that maintenance is less and less taken into account in the design of new buildings.



Hōryū-ji temple, Ikaruga, Nara, Japan, 607 — Today

Hōryū-ji temple, Ikaruga, Nara, Japan, 607 — Today

However, the way maintenance is processed raises questions on the notion of permanence. If in the Japanese culture, the original form of monuments is conserved and rebuilt identically regularly without conserving the original material, in the western cultures, the focus is made on conserving the original material of the monuments even if it means to let it disintegrate. In this sense, when in the western cultures, materials are preserved an exposed to the eternal cycle of alteration, it is possible to say that the very same piece of material have been here since it was built. However, as in the case of the Parthenon, the monument is not the same anymore; its form has changed, it cannot even be used as a shelter because of its state of degradation. Therefore, the Parthenon as we perceive it now is far from being identical to the Parthenon as the Greek perceived it during antiquity. In the case of the Sanctuary of Ise in Japan, the shrine is being rebuilt identically every twenty years. One could say that the material of the construction is not the same than when it was originally built in 4 BCE, and thus, that it is not the real, original shrine. However, the building as it is now, function, and is perceived in the same way than it was experimented by the Japanese during antiquity. Somehow, Greece maintained the material and thus the singularity of the Parthenon but did not maintain its 'form' — its 'idea'. Japan maintained the 'form' of the Shrine but not the material and its singularity. Whether by the maintenance of material and singularity or by the maintenance of form and idea, both cultures attempted to establish strong permanence that could be a guiding thread for their evolution.

Ise Grand Shrine, Ikaruga, Mie Prefecture, Japan, 4 BCE
Rebuilt every twenty years

Marvin Trachtenberg explains in his book, *Building-In-Time*, that chronophobia has reduced construction time to the minimum; « having thoroughly naturalized the compressed time horizon of modern construction, we can only think in terms of erecting what can be financed and built swiftly and accurately »[144] — in a very limited amount of time. Whereas before modernity and industrialization, construction was generally achieved over a long period, today construction projects rarely last more than a few years. If the construction of the ambitious Empire State Building took only 410 days in 1930 and 1931, a typical building can be built in under one year. On the contrary, the long duration of the construction process before industrialization allowed the design phase to be extended during the construction. Adaptations were made throughout the process, and maintenance had to be incorporated even before completion in order to prevent degradation of completed elements. This temporal regime forced maintenance be taken into account and produced more permanent architecture. This view of architecture did not divide the time of construction and the time of a building's use as clearly as we do today. From its construction to its destruction, a building was one indivisible element. If contemporary architects want the lifespan of buildings to increase, the architectural profession will need to reincorporate intelligent maintenance and stop believing that the end of the construction marks the end of the role of the architect in a building. Buildings could be conceived as elements in constant reconstruction; it is necessary to distinguish what is permanent but also maintained from the elements that will be replaced through the life of the building. On this matter, the new obsession with recycling could be of primary importance.

144
Marvin Trachtenberg, *Building-in-time: from Giotto to Alberti and modern oblivion*, New Haven [Conn.], Yale University Press, 2010

Materiality and Memory

Materiality is an inevitable aspect of the necessity of permanence for memory and identity. As Sigmund Freud explained in *Civilization and Its Discontents*[145], memory, as a palimpsest, needs a support on which to be written. If traces of time are written in the human brain, they are also carved in the city, buildings, doors, and all the materials which compose our environment. When a material disintegrates entirely; its traces, its memory, disappear at the same time. On the contrary, a permanent materiality can carry the complex sedimentation of time with fidelity. Natural materials all carry their own story with them; they are part of a growing or ageing process begun long ago and that continues after being incorporated in human constructions. Stones are fragments of mountains — geological formations — part of the process of crystallisation. They are the aggregation of minerals, shells and various elements making them a concentration of history. When incorporated in the construction of a building, their visible past is taken into account to make the most out of their qualities: the direction of the sedimentation, their way of being

145
Sigmund Freud, *Civilization and its discontents*, 1930

cut and assembled is pursuant to their history. During the daily life of a building, the contact with water, wind, air, light, and human life will make them the witness of our history and anchors for society.

In a similar way, concrete also reveals the history of its contents, but its connection to memory is much more literal as a result of its molded manufacture. With the increasing importance of concrete in architecture, the exploration of its capacity to contain memory definitely emerged in 1952 with the *Unité d'habitation de Marseilles*. Le Corbusier's concrete expression records the pouring process and solidifies the texture of the formwork; the imperfections, the unexpected, the spontaneous and random character of the construction site. Reyner Banham talked in 1955 — in an attempt to define the New Brutalism published in the Architectural Design — about « memorability as an image »[146] and about a building's capacity to suggest and touch emotions. This research of a material's true character and its capacity to carry memory and emotion is in essence ethical; it is the possibility to construct with 'honesty' and to show the primary state of materiality and construction. This readability allows the continuity of memory in architecture.

146
Reyner Banham, « The New Brutalism », *Architectural Design*, 1955

In 2012, the artist Rachel Whitehead used concrete to mold the entire interior of a Victorian London house; turning the void into a solid, permanent, concrete mass. The striking of the formwork revealed a witness of the past and wove a physical continuity of time. Whitehead transformed the shelter of the human body into a refuge for human memory. Is it not between those two refuges that the architect oscillates in practice? In an attempt to provide at the same time a physical and a psychological shelter.

Rachel Whiteread, *House*, Concrete molding, London, United Kingdom, 1993 (Photo Sue Omerod)

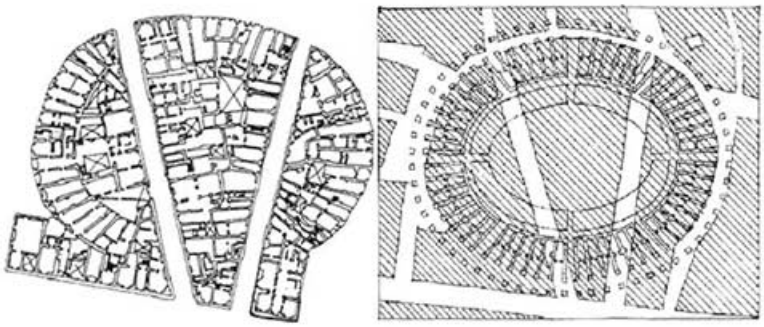
If this approach is particularly clear in the work of Whitehead, it is also found in the work of architects such as Peter Zumthor. Through the use of concrete, the Brüder Klaus Kapelle escapes from pure functionalism or construction to incorporate a narrative. The concrete cast was formed around one hundred twelve tree trunks cut down and assembled by the people of the village. The brutality of the formworks expresses the history of the surrounding nature and the will of those people to erect this place of spirituality. At the same time, the concrete is not poured in a single maneuver but in numerous layers which are not hidden but decidedly expressive, recalling the typical rammed earth construction of the area and the essence of concrete molding.

Peter Zumthor,
Brüder Klaus Kapelle,
Germany, 2005-2007

At the scale of the city, buildings such as Arles's amphitheater or the Teatro di Marcello in Rome have persisted and carried meaning and memory through history. If they persist partially because of their usability for multiple functions, they moreover subsisted thanks to their very strong materiality. Both built of a massive stone construction, they impose their

Guibert, *Etching of the Amphitheater of Arles,* Arles, France, 1686

Palismpsestious plan of the Amphitheater of Arles, Arles, France, 1686



presence as spaces to inhabit and as elements which occupy the collective memory of the city. Only the incredible firmness of the Teatro di Marcello allowed Baldasare Peruzzi to build a palazzo within and on top of the existing structure. Their materiality allowed them to become receptacles of memory and persistent guiding threads in the development of the city; they are at the same time records and catalysts of history.

To balance the focus made on solid, massive materials in this chapter, it is important to remember that light constructions also possess the potentiality to carry memory. Already a material witness of the growth of a tree, wood is also able to be a receptacle of memory. As previously evoked, the wooden Japanese architecture described by Jun'ichirō Tanizaki values the old and lustered; the « polish that comes of being touched over and over again »[147]. The capacity of wood to welcome the traces of life allows time and memory to enter into the realm of construction.

147
Jun'ichirō Tanizaki, *In Praise of Shadows*, 1933

Giovanni Battista Piranesi, *Etching of the Teatro di Marcello and Palazzo Orsini,* Roma, Italy, 1757

Building-Against-Time; The case of San Pietro

In 1995 the publication of an article written by Howard Burns for a seminar that occurred in 1990 describes the construction of St. Peter's Basilica as a « Building against time »[148]. The article narrates a real fight between the various architects who participated in its elaboration, and against time in the very long period of its edification, highlighting the conception and construction process as a series of strategies to assure permanence.

Having been neglected during the period of the Avignon Papacy, the old basilica had fallen into disrepair when the Pope Nicholas V (1447-55) decided to consider its reconstruction and commissioned Leon Battista Alberti and Bernardo Rossellino for modifications or entirely new designs. When he died, little had been achieved, but the foundations for a new transept were completed and a project was launched for more than a century of design and construction. The final decision to destruct the old basilica was made in 1505 by the Pope Julius II and until its completion in 1626 — nearly two hundred years after the decision of Nicholas V — twenty popes were involved in its realization. After, Alberti and Rosselino, many great architects of all time tried to establish their propositions as the final design of St. Peter, including Donato Bramante, Giuliano da Sangallo, Giovanni Giocondo, Raffaello Sanzio, Baldassarre Peruzzi, Antonio da Sangallo the Younger, Michelangelo, Carlo Maderno, and Gian Lorenzo Bernini.

At that time, the fact that it was unlikely for a church of that size to be finished within the lifetime of the patron or the architect required the consideration of the posterity of design after the death of the creator. The patron might lack money — the city could face a war, a plague or a famine —the architect and patron could die young — and in the case of St. Peter the construction was longer than the lifespan of any human being involved. With these considerations, the design not only had to be good, it also had to be able to impose its completion on the future heirs of the project. It is not only that the design could change in the drawings, but even the parts which were already built could be modified by the future architects and popes.

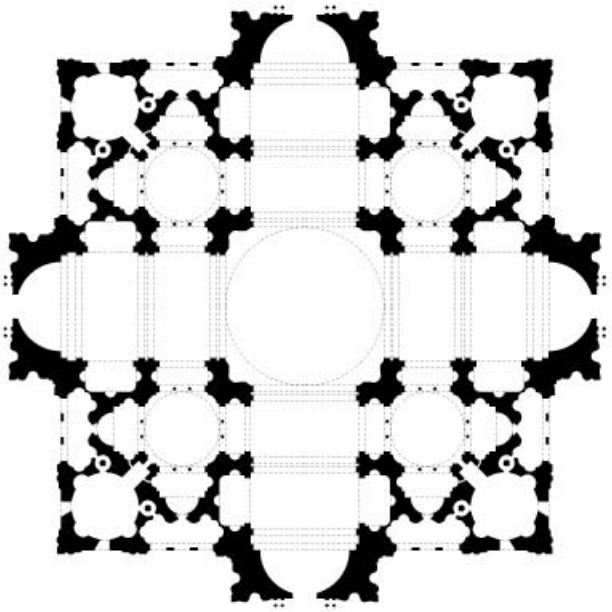
In this sense, design was not reduced to its bare quality but was also a tool of imposition and control over any attempt to modify the realization of a harmonious unified project. Ultimately, to use the words of Howard Burns; various strategies were employed « to tie the hands of posterity, so as to protect the original design »[149].

Among the architects who participated in the elaboration of the Basilica, the contribution of Bramante and Michelangelo hold a higher importance

148
Howard Burns, « Building against Time: Renaissance Strategies to secure Large Churches against Changes to their Design », *in L'Église dans l'architecture de la renaissance*, 1995

149
Ibidem

Bramante, (Donato di Angelo di Pascuccio), *Plan for new San Pietro*, Rome, 1506



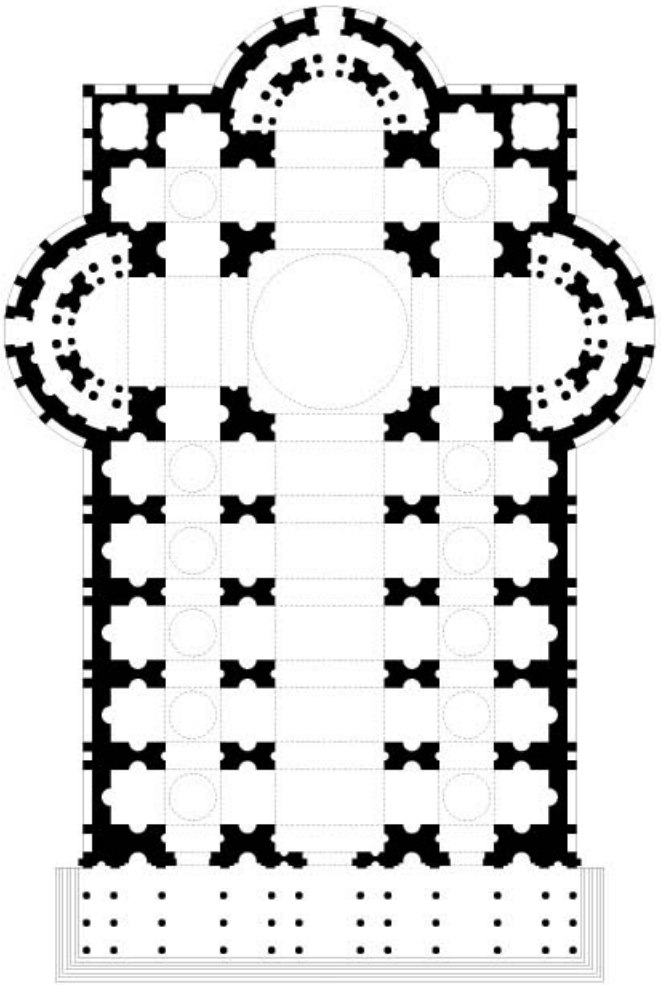
in the final design. In fact, it is not surprising to realize that the higher importance of their contribution correlates with their higher regard to strategies of posterity for their designs.

The design of Bramante (1444-1514) was the first to have a direct influence on the final built Basilica. His strategies to address posterity were first based on common sense; making a building that would be realistic to build considering the foreseen hazards that the future might bring. In this sense, he defined realistic dimensions for the church in opposition to the extravagant propositions that Antonio da Sangallo the Younger would propose later on and that would never be achieved. His scheme tried to offer the largest possible space with the minimum of material in an attempt to provide an economically viable project.
Knowing that he would not be able to see the completion of his design, he establish a hierarchy of importance to define which elements should be built in priority. This hierarchy was not only based on the intrinsic importance of each elements but rather on their ability to force that the rest of the design to be followed according to his design.

Bramante's concern was to define the essence of the building and the rules for any design that would follow. With this considerations in mind, he questioned what the most important church of Christianity should be, defining a central Greek cross generated by a simple grid of nine squares, inscribing the whole church in a larger square. This centric typology dictated the essence of a building focused around the tomb of St. Peter, and defined its relation to the people. In this scheme, the disappearance of the long apse and nave — along with the equalization generated by the grid — left the dome and the nave as the only defining elements of the church. Therefore, the key of the design lay in the intersection of the dome and the nave; the 4 pillars and the choir that took almost all of Bramante's attention. After his death, even when the plan was changed to a more traditional longitudinal basilica, the heirs of the project were never able to escape the strong character of the pure centralized plan of Bramante.

Bramante's architecture of space and mass rather than of ornament, most of his care was focused on the definition of the void, its dimensions and form. Accordingly, he could give greater importance to the general planning rather than its style — giving a stronger permanence to his design rather than to its details — which would anyway be modified by the next architects in charge. The abstraction proposed by Bramante in his drawings is a voluntary one; deciding to draw only the most important elements and limiting the possibilities of what he thought was essential to define. The abstraction of Bramante's scheme should be read as its Latin

Raffaello Sanzio, *Plan for new San Pietro*, Rome, 1540



origin *abstractus*; *abs-* (away) and *traho* (to pull, draw); to draw away from, to separate. In this sense, the architecture of Bramante separated the transient from the permanent universal form of his essential design. The underlying grid sets the abstract universality of order, only defining the link between order and void, between the life that crawls into the void and the mass defined by the building.

In 1547 — thirty-three years after the death of Bramante — Michelangelo (1475-1564) succeeded Sangallo as the master builder of St. Peter's. His contribution is to be regarded as the most definitive for the building as we know it today. In his seventies at the time, Michelangelo had little time to bring the construction to a point where it could be carried through and fixed in a permanent way. If many of the elements set by Bramante had been kept since his death in 1514, the modifications of his design by Rafaello or Sangallo had been far from irrelevant. However, the essence of the building remained as a underlying and unescapable force that could not be ignored. Whereas the plan had been changed to a longitudinal basilica, Michelangelo realized the essential quality of Bramante's plan and decided to re-establish his original Greek Cross. As his elders might have feared, he « physically eliminated Raphael and Sangallo's most visible contribution to the Basilica, namely the massive but far from complete southern hemicycle »[150]. The construction that they had planned was so ambitious that there was little chance it could entirely be built. On top of that, as their designs were not strongly connected to the whole — in contrary to Bramante's method — it was easy for Michelangelo to destroy and disregard it.

As Howard Burns explains in his article, Michelangelo's letters about St Peter's are important for their testimony to his deep commitment to the completion of his design. «His letters also reveal a more specific aim: to fix, immutably and forever, his own design for the basilica, *la mia compositione*[151], so that no-one in the future, Pope or Fabbrica or architect, should be able to change it or spoil it »[152]. «Michelangelo in his letters [...] reveals that in the very conduct of the construction, and not just un his elaboration of the design, he was consciously building against time, seeking to use the resources which he could obtain, and the few months or years of life which remained to him, with the maximum economy so as to leave no opportunity for posterity to alter his project.»[153]

At the same time legal strategies were elaborated by the Patrons to assure the completion of the project after their deaths: testaments and obligations to complete unfinished buildings were often imposed. However the best way to assure the completion of a design remained the continuous presence of the same patron and architect. In the case of St. Peter's, Antonio da Sangallo's long involvement with the basilica was his best insurance

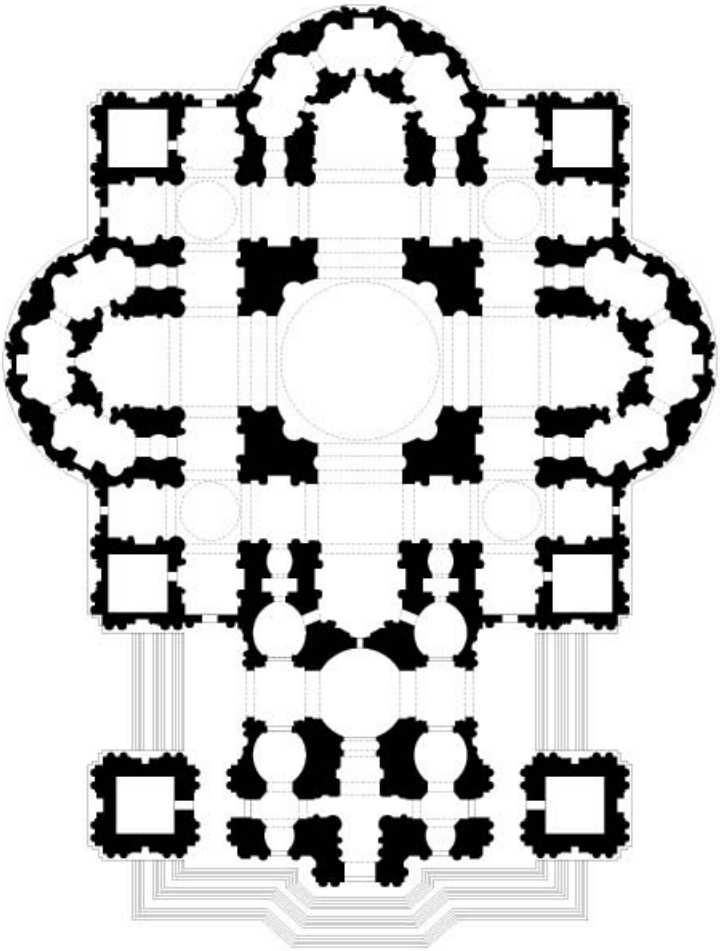
150
Ibidem

151
Michelango, Carteggio, Letter of Michelangelo to Lionardo, Rome, 1 July 1557: quoted De Maio 1990.

152
Howard Burns, « Building against Time: Renaissance Strategies to secure Large Churches against Changes to their Design », *in L'Église dans l'architecture de la renaissance*, 1995

153
Ibidem

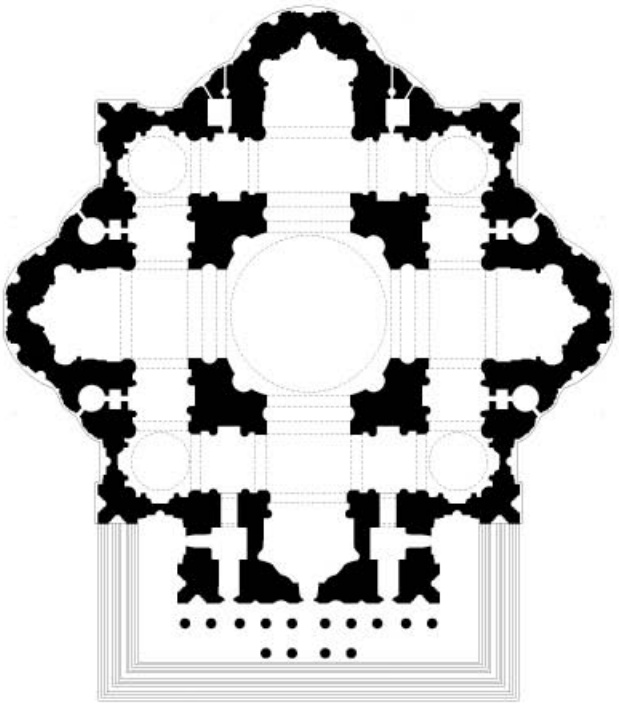
Antonio da Sangallo the Younger, *Plan for new San Pietro*, Rome, 1549



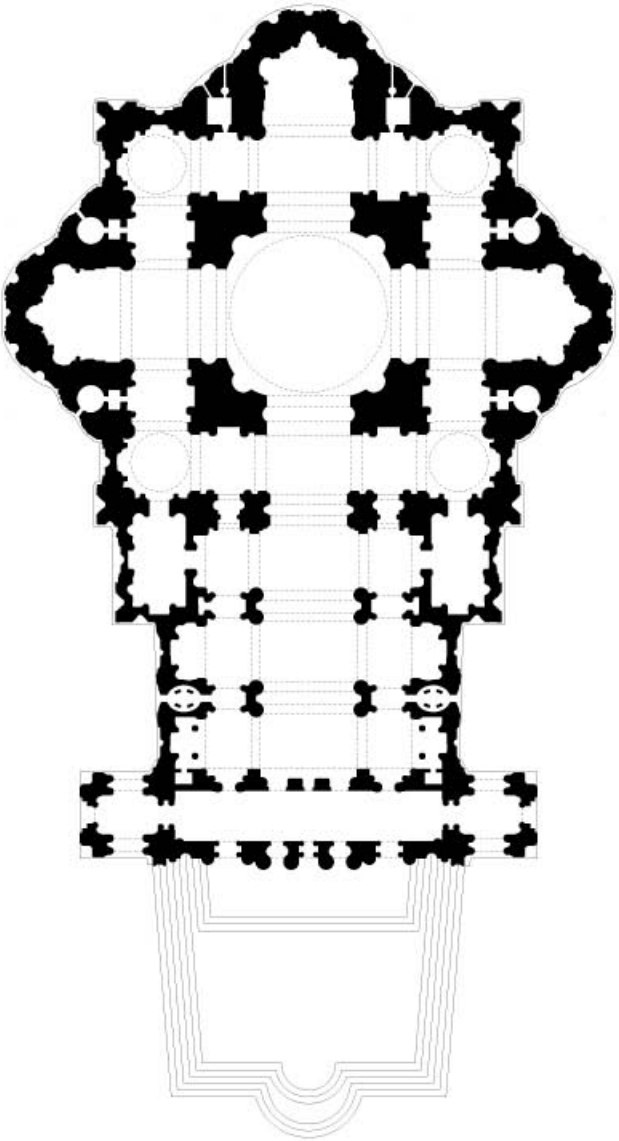
for the completion of his design. However, at his death in 1546, after more than thirty years of service, Michelangelo substituted his scheme with his own. As Howard Burns notes, models and drawings were also ways to ensure the development of the project and could legally force the construction to be accomplish in accordance with the documents. However, nothing could ensure that a design would not be spoiled better than its completion. Therefore, as Bramante did, it was important to establish a hierarchical strategy, to define the permanent elements which could condition the future of the construction. The center of the basilica already in an advanced state, it was understandable that Raphael and Sangallo tried try to establish their massive southern hemicycle on the outer edge of the structure to force the building to develop according to their schemes. However, when Michelangelo became the master builder, their hemicycle was far from being complete and was not too difficult to remove. In the same way as Bramante, Michelangelo became a master in the art of choosing the important elements to build in priority. He constructed at the same time in the north and in the south, on the drum and on the crossing arms; establishing his design as a whole that could not be altered, and would be continued after his death. If the east side of the building was strongly modify by Maderno's addition of the long nave it is precisely because Michelangelo did not have the time to round off his structure toward the future Piazza San Pietro.

The struggle for the completion of St Peter's highlights the importance of establishing strong permanent elements at any time scale, whether it is to conduct the construction of a building to its rightful completion, or to provide a guiding thread for the development of a city through centuries. In any cases, the establishment of permanence will always be a central tool, as well as a daily fight for architects to provide a sense of order — a comfortable frame of reference — a spatial legibility — a receptacle of the possible.

Michelangelo Buonarroti,
Plan for new San Pietro,
Rome, 1569



Maderno (Carlo Maderna),
Plan for new San Pietro,
(completed), Rome, 1615



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"Mes espaces sont fragiles : le temps va les user, va les détruire.[...] Le temps l'emporte et ne m'en laisse que des lambeaux informes. Écrire : essayer méticuleusement de retenir quelque chose, de faire survivre quelque chose : arracher quelques bribes précises au vide qui se creuse, laisser, quelque part, un sillon, une trace, une marque ou quelques signes"

Georges Perec

"Tu cherches la flexibilité? Continue donc à construire tes murs de pierres"

Luigi Snozzi

Enoncé théorique
Master in Architecture EPFL
Projet de Master — January 2018

Alexandre Pavlidis
Followed by
Roberto Gargiani,
Kersten Geers,
Fabrizio Ballabio.

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