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RE-DISCOVERING URBAN SLABS. TOWARDS A NEW UNDERSTANDING
OF MULTI-LEVEL PUBLIC FACILITIES.

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RE-DISCOVERING URBAN SLABS.

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Multi-Level Public Facilities.

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ABSTRACT

This thesis discusses Urban Slabs, understood as built grounds that generate an ensemble of accessible new public places for recreation in the city. Research identifies two parts in an Urban Slab: 1) an above-slab well-delimited public space; and 2) an ensemble of below-slab spaces that are turned into public interiors. The above-slab space is a direct descendant of the long lineage of well-delimited central public voids representing the political and gathering spaces of the city, the *Heart of the city*, like public and market squares. The below-slab spaces, originally created for functional needs like the construction of storage spaces, the evacuation of used waters or the insertion of other flows and technologies deriving from the urban densification and congestion, have become new public spaces from the last hundred and fifty years onwards.

The research hypothesis is that these multilevel and three-dimensional public facilities which Urban Slabs are constitute contemporary opportunities acting as spaces for meeting and reassembling the collectivity in the city. Through case studies, research highlights different categories related to the above-slab space first and to below-slab spaces after. The collection of categories identifies possible strategies and overlooks design solutions that architects and planners can put into practice. The goal is to inspire not only the conception but as well the reinvention of public grounds in the city and the transformation and re-use of existing urban vacancies. In this way, the notion of Urban Slab emerges as a convenient tool for contemporary and future reinventions of public spaces, where the collectivity can gather in a nonproductive context around recreational activities. Urban Slabs appear then as functional and symbolic hearts, centrally located in the city in which the urban collectivity can exercise its right to recreation in a democratized way, making use of public spaces for walking, playing, doing some sports, performing, or just gather as political acts. The topics of recreation and diversion, to which these Urban Slabs are functionally dedicated, become relevant in this research.

The thesis concludes with a design project as an open conclusion, exemplifying the possibility of providing the collectivity with an ambitious network of public facilities, in response to the contemporary need and duty of accessibility and availability of public spaces, which planners and institutions are asked to promote.

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INTRODUCTION

This thesis begins from a special attentiveness regarding the contemporary state of central and open public spaces, where the main social gatherings and collective life have traditionally happened. It emanates from the hypothesis that, in denser urban landscapes, there is an increasing need for more adequate and wider open public spaces that the collectivity has the right to use for exerting recreation and spend free time in the city. More in particular, this research addresses a specific kind of open public places that were imagined in denser urban scenarios from the nineteen fifties as generous and diaphanous pedestrian slabs at the scale of the city. Research proposes for these public spaces the definition of Urban Slabs and are studied and addressed in particular because they are believed to hide big potentialities for answering, when properly re-discovered, to contemporary demands.

Urban slabs were conceived as radical multi-level urban facilities which proliferated in Europe and abroad during the second after war. One of its main achievements was to segregate pedestrians from motorized transportation, offering on one side new, free, and open surfaces on top of which people could gather again. They were meant to generate a multitude of new connections that would save individuals from isolationism, and would let them exist and interact not having to worry about cars hogging the public space. On the other side, the same design strategy permitted to hide below these surfaces technical and transportation flows, generating a below-slab territory and doubling like this the available square meters in denser urban displays.

It is important to state that some Urban Slabs have shown themselves as being unsuccessful or incomplete facilities, and not having been able to adapt to most of the basic needs that users or citizenship had in general. Nevertheless, most of the fundamental approaches found at the conceptual genesis of these public facilities that are Urban Slabs, are considered along this work as still revolutionary and carrying advances in the right direction. That is the reason why this thesis strongly aims to prove that many of the designs and strategies that have been pushed forward in the direction of Urban Slabs, materializing in the past decades the public facility of the slab as a built reality, can now be re-discovered and used as a starting point for imagining and re-interpreting existing vacancies or unsuccessful Urban Slabs in the city.

The theoretical background that modern architecture has bequeathed us, amid other references, is crucial for this research. This work has as its main goal the one of contributing, thanks to a design driven research methodology, to enhance the present and future design of public open spaces, that should be able to host a more successful collective life and fulfill many of the social needs of the contemporary collectivity.

By focusing on particular literature reflecting on open and central public spaces, together with a collection of precise references that feature tentatives in the direction of offering generous and diaphanous places for the collectivity, this thesis will draw the origin of Urban Slabs back to very early public facilities. It will as well highlight the qualities and potential of the spaces Urban Slabs generate both above and below-slab. As a novelty, below-slab spaces are identified here as additional public places to the ones above-slab, and are featured as well as usable by the collectivity to meet, gather and exert their right to recreation and not only for technical matters. Even if below-slab places have their origins in the segregation of motorized traffic from pedestrian flows, as well as hiding many technical equipment, they will be re-discovered along this work into public interiors.¹

Central and open public spaces have been used by ruling forces in a self-beneficial way from ancient times up until the present. Back at the time, the goal of the ruling classes was to promote their power as well as to model a specific and imposed civil behavior through the spatial design of such spaces.² This is something that has been a constant throughout history. The Greek Agora, the Roman Forum, the medieval market square or the colonial “Plazas de Armas” have been examples of this along history. During the 16th and 17th century in Europe for example, the decision of establishing central public spaces especially designed for acting as symbols of a collectivity under the influence of a king, was once again used as part of a strategy for strengthening the power of the ruling classes.³ Up until the 20th century similar strategies have been undertaken by either communist or fascist regimes, as well as by many modern democracies in the world that went through or got reborn after the war and that wanted as well to influence the public sphere. In consequence, it is believed that contemporary democratic ruling forces should then sustain, promote, and clearly finance initiatives that aim to offer a better network of public spaces for the collectivity of today. Through the spatial design of such spaces, their accessibility, publicness and gathering potentialities, a fertile ground for fruitful and meaningful meetings of today’s society can be set for a present and future better city-life.

The first chapter of this thesis initiates focusing on the notion of the *Heart of the City*, first highlighted after CIAM 8, as a crucial concept for this research.⁴ It runs through a genealogy of open and central public spaces along history that goes back until the ancient Greek Agora and reaches the 20th century. The reason why the first roots are identified in Ancient Greece is because the Agora represents a

1 See Pimlott, Mark, *The public interior as idea and project*, JAP SAM Books, Heijningen 2015.

2 For example, roman emperors of the first century AD made use of Forums to promote urban classes, like the local bourgeoisie or the soldiers of the army, to promote their power against the former elite of the Senate. See Chueca Goitia, Fernando, *Breve Historia del urbanismo*, Alianza, Madrid 1969, pp. 58-59.

3 See Giudici, Maria Shérhézade, *Government and the Emergence of Architecture d'Accompagnement*, 1584-1765; in Aureli, Pier Vittorio, *The City as a Project*, Ruby Press, Berlin 2013, pp. 140-169.

4 See Tyrwhitt, Jaqueline (ed.), *The Heart of the City : Towards the Humanization of Urban Life*. Congrès Internationaux d'Architecture Moderne CIAM 8, Lund Humphries, London 1952.

primitive reassembling of people in the city, it being an essential fact that constitutes the conceptual origin of Urban Slabs. However, what becomes of particular interest in this work is the historical period going from the begging of Modern Architecture until our days. From this period onwards, Urban Slabs became the complex urban facilities they are due to the integration of motorized transportations and other technologies issued along the 20th century.

The International Congresses of Modern Architecture (CIAM), have been taking place in several occasions during the 20th century. These congresses consisted in a series of eventful meetings organized to discuss about the present and future state of architecture and the development of the city along the decades. One of the congresses that recalls a particular interest for this work is the 4th edition in Athens, where Le Corbusier presented “The Athens Charter.”⁵ Already in 1933, the year when the congress took place, the charter was exposed as being organized in four blocks. Starting by the one of Housing, the second one was devoted to Recreation, which was revealing. Le Corbusier diagnosed in the first line of the second block, already ninety years ago, that free space was generally insufficient in the city. He demanded thereupon that every neighborhood should count with adequate open and free space where to play, do sports or ultimately, to exercise everyone’s right to recreation as citizens in public spaces.⁶

The concept of public space, which only started to be used from the nineteen seventies onwards, was preceded by the one of “civic area”⁷, or civic center. At the 8th CIAM congress celebrated in 1951, twenty years and a Second World War after the Athens one, CIAM members referred to this notion of civic center as “the Heart of the City.”⁸ The concept “heart” was understood by the congress participants as the open place in the city where collective life was happening, representing at the same time the personality of a city in a symbolic way. Having as its main goals to recompose the collective sphere, allowing for people to meet again in public places, to end with individualism and isolation in favor of making part of a collectivity as human individuals, or to promote a collective unity, for example, the output of the congress and the reflections of its participants was aiming *Towards the Humanization of Urban Life*.⁹ When imagining to recentralize the city and *fighting against the lack of compactness* of the urban landscape, the concept of the *Heart* it was used by the congress participants as being the functional and as well symbolic *Core* of urban life.¹⁰ This was identified as one of the

5 See Le Corbusier, *La Charte d'Athènes*, Éditions de Minuit, Paris 1957.

6 Ibid. p. 30.

7 See Tomas, François (ed.), *Espaces publics, architecture et urbanité de part et d'autre de l'Atlantique*, Publications de l'université de Saint-Etienne, Saint-Etienne 2002, p. 7.

8 See Tyrwhitt, Jacqueline (ed.), *The Heart of the City : Towards the Humanization of Urban Life*. Congrès Internationaux d'Architecture Moderne CIAM 8, Lund Humphries, London 1952.

9 Ibid.

10 See Zuccaro Marchi, Leonardo, *CIAM 8. The Heart of the City as the Symbolical Resilience of the City*, conference report “17th International Planning History Society Congress”, Delft, 2016, pp. 135-144.

main goals and outputs of the congress.

In this same direction, and parallel to the congress, the commercial center appeared as a clearly suburban or regional type of building along the North American territory. On one side, commercial centers perpetuated the relationship between commercial activity and the development of cities in an extreme way, but on the other side, they were able to offer to the suburban population *crystallizations* of urban places where *more significant life experiences could take place* amongst higher quality and more adequate environments and places.¹¹

The work of Austrian born architect and planner Victor Gruen, known as well at the end of his career as the “Mall Maker” because of his expertise in designing and building commercial centers, has always add up on the legacy of the 8th CIAM congress to the point that Josep Lluís Sert, the curator of the congress, considered it a trend in the right direction because of being *attempts that explored the contemporary design of the hearts of our cities*.¹² Gruen understood that these collective spaces, around which the design of commercial centers was orbiting, were very powerful and could be exported from the suburban landscape to city centers. He somehow continued with these ideals of cooperative actions or having a civic spirit inherited from the 8th CIAM and its historic context but having at the same time a limited but certainly critic vision of a weaker after-war collective awareness amongst society. From his initial commercial centres designs, where commercial activity was organized around the scheme of a covered central free collective space, most of the times trying to artificially simulate outdoor gathering spaces to the help of glass ceilings, artificial plants or urban furniture and beach umbrellas, Gruen’s project for the renewal of the city center of Fort Worth in 1956, in Texas, sums up another level of complexity in the design of the heart of a city through the commercial center experience, imagining the construction of a raised slab that would offer a new man-made exclusively pedestrian level.¹³ Through this *podium-like* construction, like Reiner Banham would define it, and on top of which pedestrians could meet freely and gather together, increasing like this the collective interaction between individuals, a new underground is imagined below the main surface for goods deliveries and parking garages, doubling like this the available surface in the same footprint.¹⁴ Fort Worth’s city center would have become like this a multi-level urban facility using the slab principle, implementing a potential solution for proposing open spaces for the collectivity

11 See Gruen, Victor, *Centers for the Urban Environment : Survival of the Cities*, Van Nostrand Reinhold, New York 1973.

12 See Sert, Josep Lluís, *Centres of Community Life* ; in Tyrwhitt, Jaqueline (ed.), *The Heart of the City : Towards the Humanization of Urban Life*. Congrès Internationaux d'Architecture Moderne CIAM 8, Lund Humphries, London 1952.

13 Zuccaro Marchi, Leonardo, *Victor Gruen : the Environnemental Heart*, “The Journal of Public Space”, vol. II (2017), p. 75.

14 See Banham, Reiner, *Megastructure. Urban Futures of the recent Past*, Thames and Hudson, London 1976, p. 42.

in a denser urban scenario, and having a specific spatial thickness below such spaces with additional places for serving functions, whose urban potential was not yet fully explored back at that time.

Urban slabs started to be a big topic in urbanism from the nineteen sixties. The same strategy that Gruen imagined for his Fort Worth's city center was implemented at many other places, offering a new exclusively pedestrian level to the collectivity and segregating motorized traffic as well as many other services below it, increasing the urban density with such facilities. In France for example, many have been the examples of cities or quarters that got planned and built to the help of Urban Slabs, that constituted the most radical urban facility defining the projects. These examples feature how Urban Slabs orbitate ambiguously between the scale of the building and the one of the city. Front de Seine, Argenteuil, Les Olympiades or La Défense are just some of the possible examples of what was defined some years later as "*urbanisme de dalle*" or *urbanism on slab*.¹⁵

However, this kind of *urbanism* has been diagnosed as extremely controversial shortly after the appearance of these many built examples. Nevertheless, and even if considered by a multitude of architects, thinkers and other experts as well as by parts of the population as out-of-scale, unsafe and even dirty spaces, lacking amongst many other things of vegetation, shade, or other amenities, many of the ideas, strategies and principles behind such urban facilities could still be useful when re-discovered in our days. Many of the original ideas behind such designs are still up to date, like for example the pedestrianization of city-centers, the need to manage all transportation flows in a way it does disturb the minimum to public spaces, or the need of proposing wider and bigger public places for people to use them. Ideas and concepts will be extracted from a collection of examples as potential assets to keep on designing better public spaces in more and more congested cities and where stronger and more attractive and pleasant collective gatherings could take place. Additionally, the exploration of the not-fully-discovered-yet urban potential of the thickness of these urban facilities becomes of particular importance in this work, having as a very close-in-time precedent example the competition that Paris La Défense organized in 2020 whose goal was to reinvent the value that the unexploited and vacant spaces below the slab of La Défense could have.¹⁶

¹⁵ See Picon-Lefevre, Virginie, *Les Dalles Urbaines de la Défense et de Maine-Montparnasse* ; in Gargiani, Roberto (ed.), *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire de la Construction*, Presses Polytechniques et Universitaires Romandes, Lausanne 2012, pp. 845-849.

¹⁶ The winning proposal was the project of Baukunst, a Brussels based office directed by Adrien Verschuere and is getting implemented in the present, transforming the available underground spaces known as "The Cathedral" into public places suitable for arts, events and sports.

In evermore dense urban landscapes, where congestion has taken over many of the presuppositions that architecture and urbanism have had along modernity, a possible new urbanism, as Dutch architect and thinker Rem Koolhaas has speculated with, could try to *lighten up by accepting what exist* and by *manipulating infra-structure for endless intensifications and diversifications*, and as well for new *shortcuts and distributions*.¹⁷ In this sense, and understanding a still growing need for free spaces in the city within which to exercise recreation, this thesis will list, select and critically guide along possible strategies for re-appropriating existing vacant places and to render them accessible for more convenient, generous and more pleasant collective gatherings.

A specific case study is introduced at the end of the first chapter in order to help understand the utility of this design driven research. The selected case study is the first urban Commercial Center of Spain that opened its doors in 1982 in Valencia, a regional city situated at the east coast. Called “Nuevo Centro” or *New Center*, and it was designed by Fernando M. García Ordoñez, probably the biggest representant of Valencian modernity. This commercial center, that at first was located in the limit between the city center and the new periphery of Valencia, is nowadays completely integrated in the center of the town. This particular example has been selected because of being an existing infrastructure designed following the commercial center experience, recalling of the 8th CIAM Heart of the city and according to the paradigm of the Urban Slab too. As well because of it counts with vacant places that can be manipulated and re-appropriated as additionally accessible public spaces in the city. It has been chosen for setting a specific precedent, and to concretely show at the end of the work many of the outputs of the research, potentially structuring and guiding the work of this thesis and exemplifying many of the critically selected design strategies that will be explored along the whole text. *Nuevo Centro* is used then at the end of the thesis as a paradigm, elucidating on how could one implement the strategies issued from a critical analysis along this work.

The over-dimensioned and underused spaces that were imagined, designed and built for proposing sufficient parking places in the eighties, represent today an opportunity and an additional spatial asset, generated through the urban paradigm of the slab, that can be re-imagined, re-discovered and re-appropriated, rendering these unused spaces accessible for the broad public as it is being done already in other cases like for example in La Défense in Paris.

For re-discovering the potentials that urban slabs have and how can they be re-imagined and re-appropriated as up-to-date urban facilities capable of making designers produce and propose better and additional public spaces in the city, the methodology used in this research on architectural design resolves not only on the use of academic sources such as secondary literature, but also on

¹⁷ See Koolhaas, Rem, *Whatever Happened to Urbanism?*, “Design Quarterly”, no. 164 (1995), pp. 28–31.

the recourse to *pop* references and culture, as a way to reflect contemporary concerns over public space. This has served to establish a more metaphorical and analogical discourse based on the power of images.¹⁸ In this sense, research parallels recent attempts at enriching the outcome of theoretical studies and reflections in the architectural field from the 1960s onwards, featuring along these years authors from Reyner Banham or Robert Venturi and Denise Scott Brown to Andrés Jaque. In addition, Rem Koolhaas is a figure of particular importance in this work because of sharing closely his vision in several aspects and because of considering the existence of shared interests along the topics treated along this work.

The second chapter clarifies and enunciates a sort of state-of-the-art on which this work is based. Through the act of collecting different materials and classifying a multitude of images, projects and references the goal is to generate knowledge on how to look at urban slabs from a design point of view.¹⁹ The relationship between urban slabs and the rest of the city is crucial to understand how the design of such public facilities can be re-invented and executed. The notion of border becomes essential and is present along the whole second chapter. It is only through these borders within which Urban Slabs can be delimited that it is possible to understand these urban facilities as clearly delimited spatial entities, conceptually existing because of these delimitations.²⁰ Along all the case studies, precedents, metaphors and images selected, five design operations are retained or enunciated. These design actions or operations help understand urban slabs as plastic and tectonic entities that interact with the urban fabric in five different ways.

A first possibility would be to understand urban slabs as sorts of organic continuities of the existing public surfaces and grounds of the city. This conception could bring us to understand the paradigmatic public facility of the slab in a sort of *landscape* logic, whose main action that drives its design would be the one of *shaping* the slab, to give it a form, to sculpt a radical continuity between the existing urban fabric and the free open surface offered by the urban slab.

A second possibility can be to conceive urban slabs as sorts of stages, as open surfaces that are radically detached from the ground of cities, that generate a separated spatial condition and whose continuity within the rest of the urban fabric is to be reinterpreted. The action of *rising* the slab from the existing ground level of the city is making understand urban slabs as sorts of *podiums*, as exceptions, as highlighted places, on top of which something can be staged.

The third possibility is to see urban slabs *overhanging* at places in which natural topographic accidents or specific morphologies of the urban landscape allow for it, as sorts of collective *balconies*. On one side, such urban facilities would keep

18 See Ungers, Oswald Mathias, *Designing and Thinking in Images, Metaphors and Analogies*; in Ungers, Oswald Mathias, *Morphologie : City Metaphors*, König, Köln 1982.

19 Ibid.

20 Dogma, Aureli, Pier Vittorio and Tattara, Martino, *Platforms*, Black Square, Milano 2021, p. 7.

a direct connection with the city, because of the natural existence of a continuity with the existing ground level of the city. On the other side, a break between the city and the urban facility can make slabs understandable as particular places, of a certain importance, being half way between the full continuity that shaping slabs confers and the radical break that rising them gives.

Forth action would be the one of *superimposing* these slabs over the city like sorts of metaphorical *flying carpets*. This fourth action brings the possibility to imagine urban slabs completely detached from the ground of cities and propose or are open to imagine different ways of offering free open public spaces for collective use.

The last possibility would be to understand urban slabs as depressions in the existing ground of the city, *digging* like this sorts of *pools* in which it would be possible to gather collectively.

All the five possible design actions that have been extracted from the work of collecting and classifying can of course be mixed amongst each of the ones, up until being able to conceive or interpret Urban Slabs that could have the five different readings at the same time.

The third chapter identifies precise examples and explores the potentialities of below-slab spaces. Initially related exclusively with the insertion of technical equipment in the city, these spaces started being used by the public at the beginning of the 20th century. At the same time, the examples of early urban slabs and some other precedent case studies of the 20th century collected in this chapter, clearly show an increase in complexity. A bigger attention is devoted here towards an ensemble of questions, for instance, the structural systems sustaining such spaces, the coexistence of different kinds of below-slab mobility or the multitude of devices needed to adapt below-slab spaces to human needs such as ramps, stairs or escalators providing accessibility, skylights bringing natural light, ventilation systems or the materials and urban furniture employed for the design of such public interiors.

Finally, and after having extracted many design tips and actions from the collection and analysis of all the referents, the last chapter proposes a demonstration of the potentialities that re-discovered Urban Slabs could have in today's cities. Acquiring the status of new central open public spaces, the paradigm of the Urban Slab as a public facility is featured here as an important asset to count with sufficient free and open surfaces where to gather collectively and exert one's right to recreation, in an evermore denser urban landscape. The re-interpretation and re-discovery of existing spatial resources in the city for turning them into publicly accessible urban slabs is conferring to the design actions of re-interpretation a big relevance because they mean progress for the contemporary society. The spatial design used for transforming vacancies into public facilities, becomes a powerful weapon that can fight against egotism, social injustice and inequalities

in contemporary scenarios.

These places are understood along this work, more in particular, as open public spaces whose design should be aware of the increasing complexity of the city both, as a collectivity of citizens and as a built environment. Since cities have never been as built and as congested as they are nowadays, with ever less and less free and available open spaces amid their physical complexity, the design initiatives that would be pushed forward in this thesis would re-discover existing but unused or inadequate built resources in the city in order to devote them to nonproductive and recreative activities. Even if it seems paradoxical, a big percentage of available places, unused open surfaces and unreachable spaces are found in denser and more congested contemporary urban environments. The thesis proposes to reflect then on how to use the knowledge produced along the previous classifications and analysis of the precedents in order to transform existing places in the city into open and publicly accessible Urban Slabs.

An ensemble of activities, and their newly designed frames, would be potentially able to generate stronger relationships between individuals and to promote the associative nature of humans, all this being able to happen in places rendered accessible to the broad public and especially thought for that.

A design project showcases how *Nuevo Centro* in Valencia becomes a fertile ground in which recreational and nonproductive activities take place ideally thanks to the fact that unused free and open surfaces have been rendered accessible to the collectivity and re-designed by means of different operations. Some of the reasons that have made of this example a particularly pertinent one in this thesis are, first of all, the fact that it is a building that was designed through the use of the paradigm of the Urban Slab and that can be re-interpreted as a contemporary public facility. As well, it is a commercial center that was designed in the second half of the XXth century, sharing lots of the concerns of the 8th CIAM congress and by an architect, Fernando M. García-Ordoñez, that counted with an extensive knowledge on Gruen's work at the United States too. Being part of an operating Commercial Center in the city center of Valencia, this newly accessible and re-discovered Urban Slab re-uses a big quantity of square meters, that previously were completely unused, in order to offer them for the enjoyment of the collectivity and their free time.

1

A GENEALOGY OF URBAN SLABS

Central and Open Public Spaces along History

1.1 THE HEART OF THE CITY

Only some years after the end of the Second World War, a war that destroyed so many cities including the oldest centers of European cities, the members of CIAM (International Congresses of Modern Architecture) got reunited again in 1952 in the UK. After the physical destruction of cities and their centers, it seemed a very important matter the fact of recomposing the collective life of cities, of taking actions towards allowing people to meet again, to behave as a collective unity, to have access to infrastructural resources and more important, to exist as part of a collectivity inside of public places. Such traumatic facts, together with a generalized *process of constant and unchecked decentralization and land speculation (which was) a real menace to all our cities and to the stability of civic values*,¹ as Josep LLuis Sert defined the actions taken under the concept of the garden city, brought the group of architects to reflect in their 8th reunion on the *sense of community* (J.L.Sert), and on the *element which makes a community a community* (MARS), on the *moment of the Core* (J.B.Bakema). All these reflections had as a common output the need of re-generating public voids in the destroyed urban fabrics because in such central public places it was found the potential to reconstruct a broken society, together with their values, cultural activities and collective rights.

The title of the congress is as well revealing: “The Heart of the City: Towards the Humanization of Urban Life.” According to Leonardo Zuccaro Marchi,² the concept *Heart* would work both as a *functionalist metaphor* of the restoration of connections, and as a *humanist symbol*, of the idea of a social collectivity. Both are important concepts to understand the complexity of the idea of the *heart of it all*,³ brought back into the spotlight at this specific moment among the century. The components of the MARS group defined such concept in the sense of a *functional metaphor* already, as the *physical heart of the community, the nucleus, the Core*,⁴ as the community place where to meet, being a frame where a new civic life could be developed. It is a concept directly related with *places of public gatherings such as public squares (...) where people can meet freely* and that, according to Sert, *are not things of the past (but), properly replanned for the needs of today, should have a place in our cities*.⁵ The goal of discussing back then

1 See Sert, Josep Lluís, *Centres of community life* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

2 He is an architect and a researcher, who carried research on this specific congress of CIAM. Zuccaro Marchi, Leonardo, *CIAM 8. The heart of the city as the symbolical resilience of the city*, 17th International Planning History Society Congress *History, Urbanism, Resilience. Vol. 2. The Urban Fabric*, Delft 2016, pp.135-144.

3 See Gideon, Sigfried. *Ciam 8: The heart of the city: A summing up* in *Ekistics*. Vol 52, N°314/315. Mary Jacqueline Tyrwhitt: In Memoriam. 1985, pp. 475-477.

4 See Sert, Josep Lluís, *Centres of community life* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

5 Ibid.

around the notion of the Heart was clear. There was an aim to *recentralize the city* according to Sert, fighting against the lack of compactness of cities. Such *hearts* can be seen as the public voids this research talks about, as *artifacts*, and *man-made constructions* and as *architectonic-urbanistic solutions* whose goal is to allow people to move and interact in a specific place among the city.^{6,7} And they cannot be rigidly drawn spaces, they should allow for permanent reinterpretation of the social habits and ways of interacting but, at the same time, they have to propose a specific-enough architecture that would act as a physical frame to be reappropriated by the society. In Metropolis, polycentric structures per se, a multiplicity of hearts could as well be created analogously and in addition to the historic ones.

On the other side, the Core is the *symbol* of the sense of community. According to Jacob Berend Bakema, participating at the congress too, *the moment of the Core is the moment we become aware of the fullness of life by means of cooperative action*.⁸ For Bakema, in *capitalism*, [...] in which it was said that the goal of life is to possess things, the ethics of to own and to possess, made people confused about life. Things became more important than the relationships between them, (and) in the town itself there was no longer a clear expression of the value of relationships.⁹ He actually diagnosed a lack of the symbolic core in society, where, already back in the Fifties, individualism and isolation had started becoming an obstacle for a healthy functioning of the community. Probably the goal of such reflections was to look for a symbolic new *collective strength* (force collective)¹⁰ that would allow reconstructing a healthy public life through collective unity especially after the war.

According to several of the participants at CIAM the values of community are at stake on the future of the city-to-come. For it, it is believed that only through taking-part into collective activities one would become aware of the so needed collective relationships.¹¹ The Core is then the moment where the individual sphere meets the collective one, and frees the individual of isolation and *laziness*, making the individual an active member of a very-much-needed free collectivity.¹²

6 See Gideon, Sigfried, *Ciam 8: The heart of the city: A summing up* in *Ekistiks*. Vol 52, N°314/315. Mary Jacqueline Tyrwhitt: In Memoriam. 1985, pp. 475-477.

7 See Nathan Rogers, Ernesto, *The Heart: Human problems of cities* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

8 See Bakema, Jacob Berend, *Relationships between men and things* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

9 Ibid.

10 Collective force or « force collective » in French is the name that Proudhon gives to the politico-economic new way of thinking discovered after the raising of the Luxor obelisk in Place de la Concorde in Paris (1836) where he understands that it is not the same thing paying 200 days of salary to a single man than to pay a day of salary to 200 men at the same time. See Gargiani, Roberto, *Multitude et force collective. Proudhon et le chantier de Lebas pour l'érection de l'obélisque sur la place de la Concorde*, in Gargiani, Roberto; Korbi, Marson, *Grand Dessein du Rationalisme*, Accatone, Brussels 2021, pp. 18.

11 Ibid.

12 See Nathan Rogers, Ernesto, *The Heart: Human problems of cities* in Tyrwhitt, Jaqueline (ed.) *The Heart*

The ideals of freedom, spontaneity, civic spirit or cooperative actions are intimately related with a politically critic vision of the world, understanding the fact of being a citizen as the sine qua non condition of life, opposing it to the figure of the *paganus* which in Latin, and in its early Christian adoption meant *country dweller* or *not of a city*, evoking an inherently anti-city connotation.¹³ Human extensive relationships like conversation, discussion, but as well contemplation, or leisure, all of them made from the freest point of view, are believed to be the keys for a very much wanted integrated society of individuals that share a community life and where men are capable of being different. These should create cities for *free and living man where liberty would consummate itself and explain itself*, according to Ernesto Nathan Rogers, who participated in the CIAM 8 congress as well. It is then where the *Heart of the City* is reclaimed as a place against egotism and social indifference. A place where to be in touch with the others in a fruitful way. Unfortunately, and even if these are reflections that appeared already seventy years ago, many of the social problems already exposed back then are still up-to-date, like for example: individualism, the loss of the awareness of communal strength or a generalized isolation bringing political indifference towards any life matter. This is why, and coinciding with Leonardo Marchi, *the idea of the heart with its countless interpretations (metaphorical or symbolic) remains a theoretical ground that is still fertile and open for further interpretations and investigation*,¹⁴ especially nowadays. Because, agreeing or not on the significance of the Core of cities, it might be expressed that this thesis is based on the belief that, through a critical confrontation of the history and present facts, and through producing theoretical knowledge, architecture has a real power of action on the actual state of things.¹⁵ The theoretical systematization and intellectualization of the discipline allows for it to have a real impact on the construction of the city, using as a main tool the Project, that, in words of Architect and theorist Pier Vittorio Aureli, *is exactly as anticipation of a reality yet to come that the project is also a reality in itself*. Such an affirmation goes in the direction of the fundamental aim of CIAM congresses, that, according to Bakema, *must today anticipate the day of tomorrow*.¹⁶

of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8, Lund Humphries, London 1952.

13 See Khosravi, Hamed, *Camp of Faith. The Political Theology of the Islamic City*, in Aureli, Pier Vittorio (ed.) *The City as a Project*, Ruby Press, Berlin 2013, pp. 70-100.

14 See Zuccaro Marchi, Leonardo, *CIAM 8. The heart of the city as the symbolical resilience of the city*, 17th International Planning History Society Congress *History, Urbanism, Resilience. Vol. 2. The Urban Fabric*, Delft 2016, pp.135-144.

15 "(...) Architecture as a discipline was conceived as a nexus made of governance, organization and authority. In order to perform in this way, architecture must become more logos than matter. The passage from building to writing represented (already) by Vitruvius's *De Architectura* means precisely this: a shift from empirical practice to theoretical rationalization." See Aureli, Pier Vittorio, *Means to an End. The Rise and Fall of the Architectural Project of the City* in Aureli, Pier Vittorio (ed.) *The City as a Project*, Ruby Press, Berlin 2013, pp.14-38.

16 See Bakema, Jacob Berend. *Relationships between men and things* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architec-*

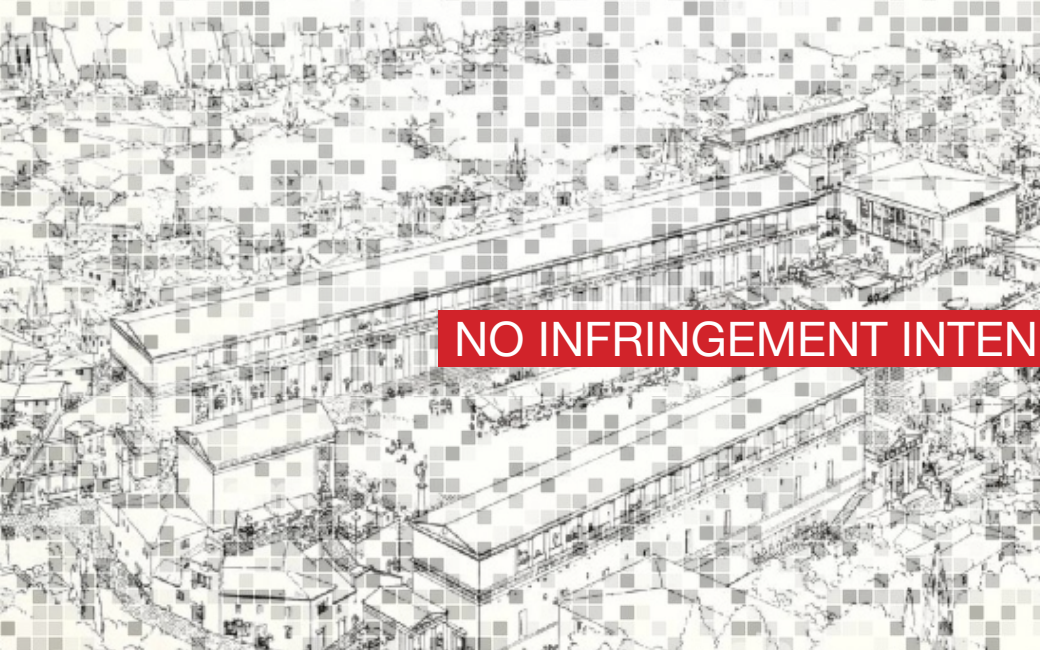
The *Italian plazas*, and the squares from the past which were the ancient centers of cities, directly related with the original Greek Agora, are seen and revisited by the CIAM 8 members with a certain attitude of reinterpretation, trying to learn from things considered positive in past times. They are believed in this period to be a ground for more contemporary visions of the public space per se, and able to work thanks to a reform of such concept, injecting into squares the use of technologies such as TV screens or other kind of visual stimulus, taking the commercial advertisements as reference (Sert), being aware of a balance between permanent and temporary elements (Giedion) and capable of being flexible adaptable to the rapid mutations of life (Rogers). The concept of Core or *Heart* that CIAM 8 members refer to in their texts, can easily be compared back, metaphorically and symbolically, to such an ancient urban void like it is the Greek Agora.

ture = *Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

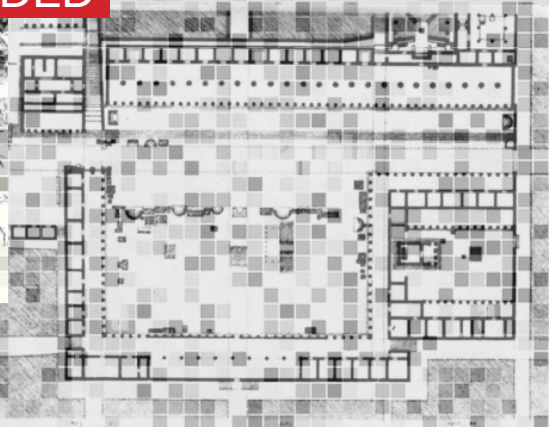
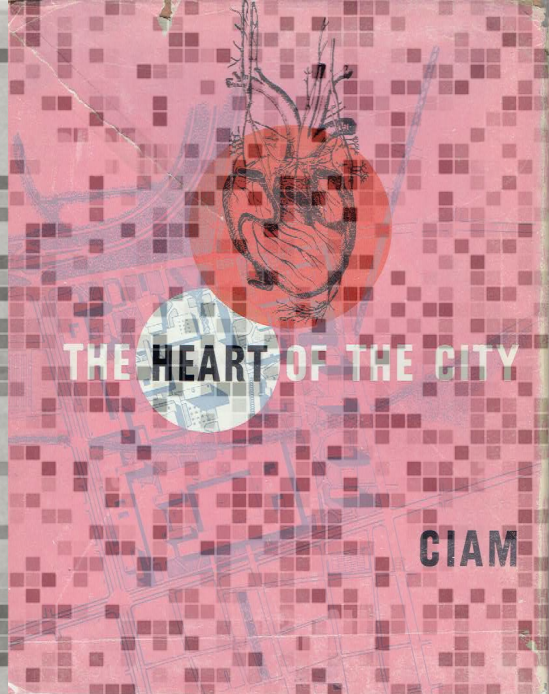
Figure 1. Illustration suggested by José Luis Sert to Jaqueline Tyrwhitt, for the cover of the publication of the 8th CIAM congress, *The Heart of the City*. / Figure 2. The Agora of Assos. Drawing: Courtesy of the New York Public Library. See Guren, Victor. "The heart of our cities" / Figure 3. Agora. Poster of Alejandro Amenabar's film. (2009) Figure 4. Front cover. *Ciam 8 The Heart of the City: Towards the humanization of urban life*, 1952. / Figure 5. The Athenian Agora c. 100 B.C. (American School of Classical Studies at Athens./ Figure 6. Priene, the Agora. (von Gerkan, *Griechische Städteanlagen*, Fig. 11) / Figure 7. Colour lithograph. Men vote to ostracize a fellow citizen in the Athenian Agora. Herget, Herbert M. (1885-1950) National Geographic Creative. Getty images. / Figure 9. Fort Ricasoli (Malta) during the filming of *Agora*.



THE ACROPS OF ATHENS.
Drawing: Courtesy of the New York Public Library



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1.2 FROM ANCIENT TIMES UNTIL MODERNITY

The origin of the collective public places this thesis carries research on is believed to be represented by the Ancient Greek Agora, the word agora directly meaning *gathering place* and *assembly*.

The Agora represents a paradigm whose fundamental reason of existence is a voided free space in the middle of the city, flexible enough to be able to host from a market to exchange goods in its early days, to many other economic, political and social exchanges later, even related with several activities for recreation and diversion.¹⁷

This fundamentally commercial void that appears in the Greek ancient city as its center, seems to be the most original precedent of what today is understood as public space in the occidental city. In a second phase, such voided central spaces started constituting the real politic centers of Greek Polis.¹⁸ With the development of democracy in the Greek city-states started appearing several new buildings dedicated to the public or common wealth and the development of democracy which indicated a much closer collaboration between citizens and the matters of community. Such politic-administrative-economical elements like the ekklesiasterion, the bouleuterion or the prytaneion, made for public and municipal assemblies, together with the Stoa, reserved for interrelations and commercial functions, were usually built around the Agora becoming its perimetral enclosing, constituting like this the nucleus or center of the city.^{19,20}

In Ancient Greece, cities were conceptualized as finite entities. According to Aristotle a city was what politically could be managed, what one's eyes could enclose.²¹ In opposition to the 20th century urban sprawl and the concept of the diffuse city that is extended on an ideally isotropic territory, Ancient Greek cities had a more or less clear border, sometimes even radically incarnated by a city wall. The Agora of each of these cities had as well a finite size corresponding proportionally with the size of the city. Since Greek cities had a limited size because of their condition of finite entities, it is possible to find an equivalent scale amongst many examples of Agoras. Like cities, Agoras were as well delimited by borders, which in particular were proportioned by all the politic-administrative-economical elements cited above.

17 See Chueca Goitia, Fernando, *Breve historia del urbanismo*, Alianza, Madrid 1998.

18 The concept of public space only appears in the 1970's, only preceded by the 1950's notion of civic center. Previous to this, public space was not defined as such, so not having in mind a collective ownership of it. See Tomas, François, *L'espace public: Un enjeu pour la ville*, in Tomas, François (ed.) *Espaces publics, architecture et urbanité de part et d'autre de l'Atlantique*, Publications de l'Université de Saint-Etienne, Saint-Etienne 2002.

19 Fernando Chueca Goitia would define them as such in his book *Breve historia del urbanismo*. Chueca Goitia, Fernando, *Breve historia del urbanismo*, Alianza, Madrid 1998.

20 See Chueca Goitia, Fernando, *Breve historia del urbanismo*, Alianza, Madrid 1998.

21 Ibid.

The notion of the void is closely related with the notion of border.²² A void exists and can be expressed when it is enclosed by another or other entities. It is at this point that it becomes understandable that what delimits such voids becomes almost as important as the void itself, since these edges are the ones that make the void significant. Through the wall, a basic apparatus of separation, the Greek Polis gets delimited, and the space of the city becomes defined by this division from the rest of the territory.²³ Likewise and in an analogous way, the entities that enclose the Agora define it generating borders that allow a political collectivity to exist, for masses of people to gather for celebrations, demonstrations and to interact together creating a unity, an ensemble of people that can be understood as a collectivity conformed by political subjects to which a set of norms, rules but as well rights are applicable.²⁴ The Agora then represents a paradigm which is, on a general level, a portion of existing ground delimited by several buildings, often public, and that stands up as the center of the city.

The word Agora is overrepresented in today's society. The term has been undermined especially during the second half of the 20th century, having generated a polysemic collection of places named after the concept of Agora such as sports or commercial centers, civil associations or several kinds of business and projects. This use of the concept has sometimes skimmed to become even junky.²⁵ Nevertheless this means that the general understanding of the word Agora as a place for meeting is that anchored in the collective imaginary that it is not only used for naming places of society but for example a movie as well that is not even centered in Greek culture. *Agora*, the 2009 film directed by Chilean-Spanish film director Alejandro Amenábar somehow recreates a fantasy of what this public space could have been, proposing a quite confrontational space between jews, newly born Christians and romans.²⁶ What it is possible to extract from the

22 The notion of "border" becomes crucial in this thesis, allowing always the public ground to exist as an entity and because of allowing it to politically belong as well to a certain ensemble of population. "The boundary is an edge where things end: the border is an edge where different groups interact." Sendra, Pablo; Sennett, Richard, *Designing Disorder: Experiments and Disruptions in the City*, Verso, London, 2020.

23 A wall is defined as such by Hamed Khosravi in Khosravi, Hamed. *Camp of Faith. The Political Theology of the Islamic City*, in Aureli, Pier Vittorio (ed.) *The City as a Project*, Ruby Press, Berlin 2013, pp. 70-100.

24 The fact of defining a specific political collectivity because of being within a precisely delimited physical space is something that is inherent along many of the texts and speeches of Dogma. It is exemplified in particular with the case of mosques in the Arab world. See Khosravi, Hamed. *Camp of Faith. The Political Theology of the Islamic City*, in Aureli, Pier Vittorio (ed.) *The City as a Project*, Ruby Press, Berlin 2013, pp. 70-100.

25 The word junky makes reference directly to the potential Rem Koolhaas finds in certain kind of spaces generally one doesn't study or look at, catalogued by them as junkspace. See Koolhaas, Rem, *Junkspace*, October, vol. 100, 2002, pp. 175-90.

26 Funny fact: no Greeks at all. The movie is based on, amongst many other references, Pedro Galvez's novel "Hypatia, the woman who loved science," and aims to revendicate the role of powerful women in society. With a clear goal of connecting the story to a contemporaneity, screenwriters and director weave an entertaining story with a lot of historical license on how Christians violently impose their religion over romans and jews, marked in the background by the conciliatory figure of the wise philosopher and teacher Hypatia, that at a certain point is not allowed anymore to make use of the public space of the Agora

movie in terms of a further elucidation on the original typology of the Agora is, on one hand, the importance of public space in order for individuals to exist. Hypatia, a woman philosopher and teacher, the main character of the movie, gets at some point her access banned to the public space, to the Agora. By it, the men that hold the power in the movie, eliminate her, almost erase her from existence. The fact of being allowed in public space, to use it and to participate in collective exchanges is powerful. It makes the individual exist inside the collectivity defined by the public place of the Agora. On the other hand, the movie as well recalls the spatial autonomy the Agora has as the main place in the city. In the movie, the commercial activity of the Agora stays always in the background but, what it is represented along the film, is a clear and highly political use of such space, even if violent. The movie was filmed mainly at the esplanade of a 16th century fortress called Fort Ricasoli in the island of Malta.²⁷ The radical esplanade of sanded earth becomes quite of a direct resource to recreate in the big screen how the public ground of an Agora is believed to have been. The piece of sandy esplanade is surrounded with several buildings - with again lots of historical license - like for example, the library or a theater, a free interpretation of what an Agora could have been. Thus, and again, even in an artificial free recreation of an Agora-inspired public open voided space, the notion of the border becomes crucial. The Agora starts existing from these borders onwards. The openness that the Agora proposes amongst the sea of buildings, that is the city, confers to it the spatial autonomy mentioned above and the suitability not only to host commercial activity but to become the main political scene in the city too.

Es Devlin's art installation *Forest for Change* leaves in the middle of it, as it was a clearing in a wood, a circular open air void surrounded by a continuous wall of greenery. Known for creating large scale performative sculptures and environments that fuse music, language and light, Es Devlin participates in the 2020 London Design Biennale installing a forest in the courtyard of the Somerset House that actually could relate to the origin on how the first known Forums were designed and delimited on the ground back in ancient Rome.^{28,29,30}

around which all this confrontations between the different religions take place. The powerful role of the philosopher woman Hypatia is seen by Christians as a clear menace, so this story ends up having terrible consequences for her.

27 This spot has been used for filming other historical super productions like "Gladiator" (2000) or "Troy" (2004) amongst others.

28 Es Devlin is a British artist and designer with a fruitful career full of successes, having worked for famous fashion brands or world-wide known pop stars. <https://esdevlin.com/information>. Visited on 23.06.2022.

29 2020 London art biennale took place in 2021 because of the pandemic.

30 What brought Es Devlin, artistic director of the biennale, to propose a forest in the courtyard of the Somerset House was the actual ban to plant any trees in the courtyard. Jonathan Reekie, director of the Somerset House Trust, told Es Devlin that the only thing she couldn't do when designing the installation was to plant trees: "it's been written into the architectural covenant of the building, based on the Palladian Enlightenment principles of the triumph of human design over nature, that you can't put any living trees in this courtyard." <https://www.dezeen.com/2021/06/01/es-devlin-forest-for-change-london-design-biennale/>. Visited on 23.06.2022

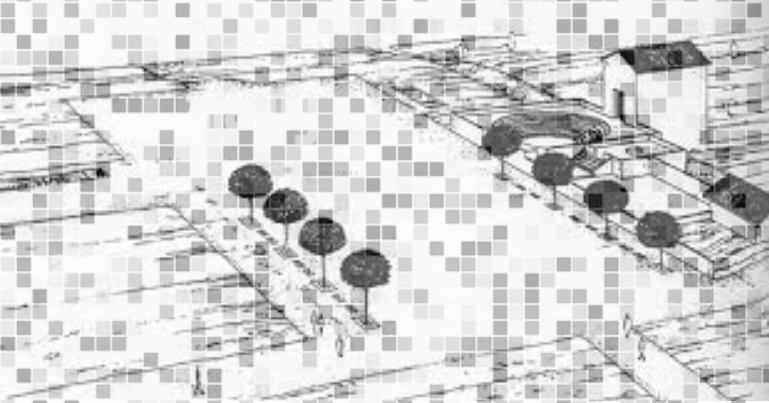
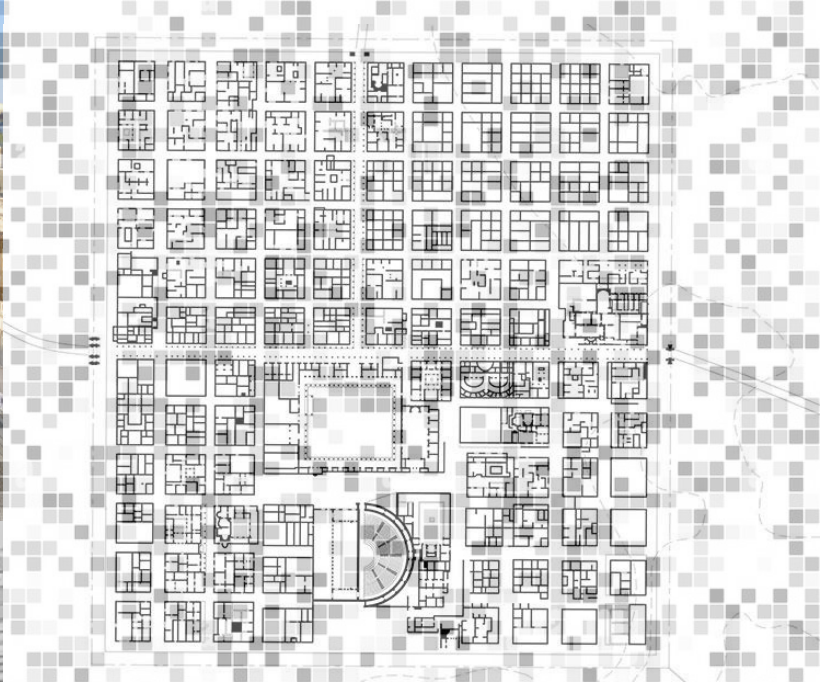
Additionally to the forest there was a collection of seventeen wooden pillars containing statements aligned with the UN Sustainable Development Goals, further highlight the boundary of the circular void in the middle of this artificially planted forest. What British designer Es Devlin does here is to delimit a piece of ground, delivering a void and a free surface in the center of the installation, useful for receiving and hosting visitors: a place for the public to gather. And such an action is the foundational statement at the origin of public voids in the city.

Having at least a metaphorical close relationship with this installation, what are believed to be the first known Roman forums were as well voided spaces delimited by rows of trees in their surroundings. The most ancient Forums found were discovered with *planting pits* or *votive wells* in their perimeter, which have been interpreted as the displays that hosted trees or stakes that, at the same time, were the elements enclosing the space: a delineated space by this virtual limit, separated from the rest of the city even before the construction of the first buildings.³¹ That is totally the case of Cosa for example, a Latin colony founded in southwestern Tuscany in 273 BC. The Forum of Cosa is defined by the surrounding trees from its beginning, marking the civic and electoral space. In the definition that Pierre Gros gives of a Forum, what becomes revealing is that a Forum is not a building in itself but a group of buildings, more or less coherently arranged around a square. Gros cites Vitruvius as well to defend that, as Vitruvius explains in his first book of his treatise *De Architectura*, the Forum is essentially a free space being its origin the *arearum*, or a forecasting choice of an area inside the urban fabric that automatically becomes reserved for a collective use.³² In addition, the proportions of the free area that is the Forum are as well mentioned in the treatise, needing to follow the proportion of 3/2 regarding length/width. This more elongated proportion than the Agora for example, characterizes the Forum as being a more defined and geometrically designed shape on the ground. The search for a systematization and simplicity is something that generally can be admitted as definitory when speaking about ancient roman city planning, especially for the orthogonal system applied at colonial cities newly founded on the base of military camps, having their precedents back at least in colonial Ancient Greek cities founded from scratch.³³ In these cases, and along many exceptions, a rectangular Forum was located at the crossing of the two main roman urban axis: the north-south and the east-west, the *cardo* and *decumanus*. And when trying to imagine an archetypical idea of the Forum, it is true that the rectangular proportions are followed in many of them. And, instead of finding these Forums or rectangular reserved areas for collective uses, surrounded by trees, like it has been shown in the origins of Forums like the one of Cosa, what it is found in

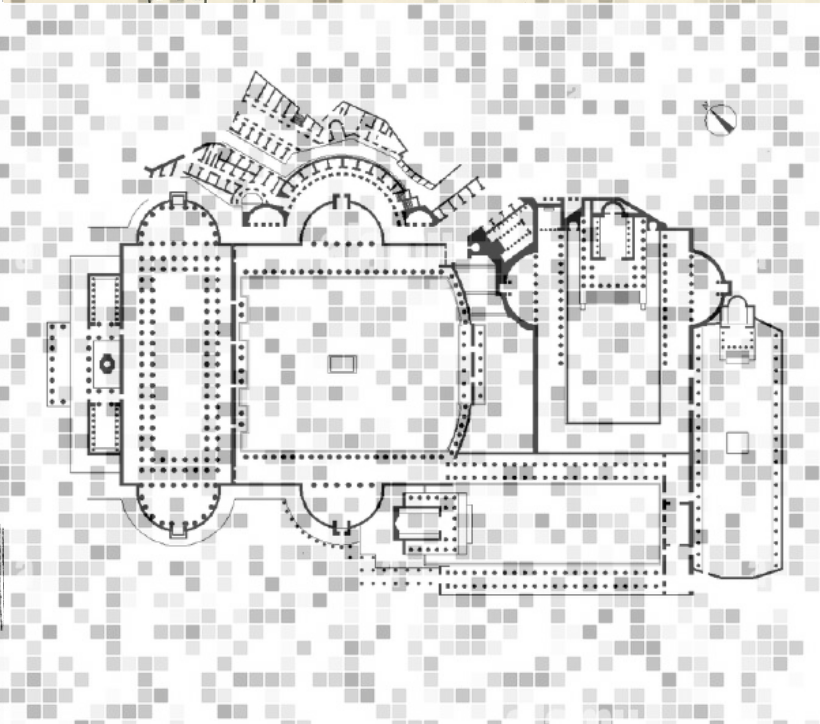
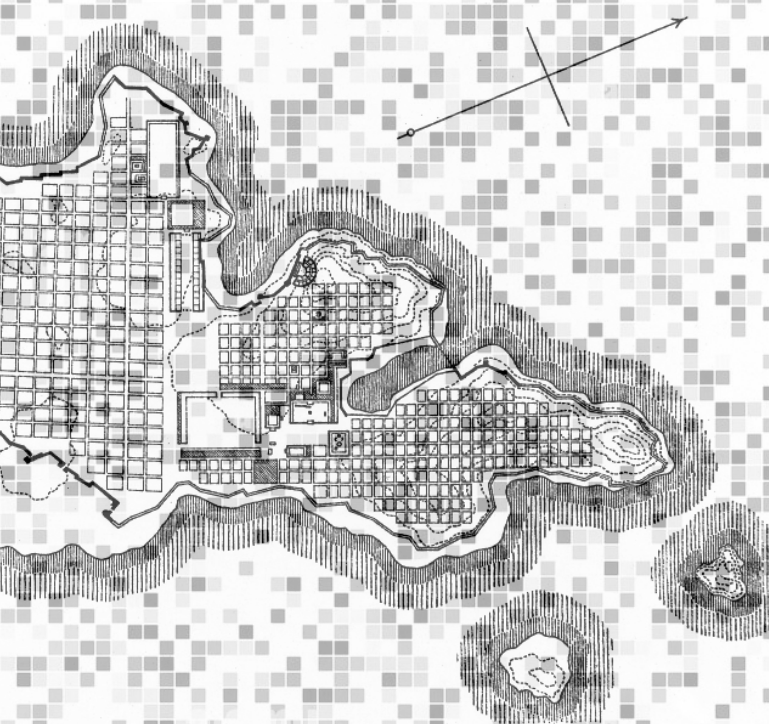
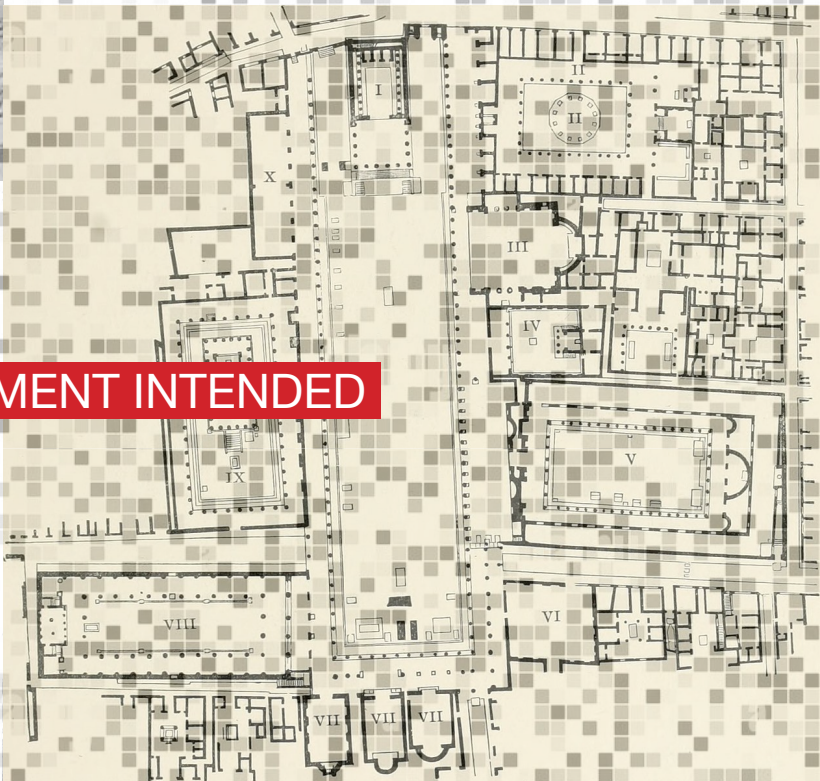
31 Translation from french of the terms used by Pierre Gros in: Gros, Pierre, *Forums* in Gros, Pierre (ed.) *L'architecture Romaine. Tome 1. Les monuments publics*, Picard, Paris 1996, pp. 207.

32 See Gros, Pierre. *Forums* in Gros, Pierre (ed.) *L'architecture Romaine. Tome 1. Les monuments publics*, Picard, Paris 1996, pp. 207.

33 See Stanislawski, Dan, *The Origin and Spread of the Grid-Pattern Town*, *Geographical Review* 36, no. 1 (1946): pp. 105–120. <https://doi.org/10.2307/211076>.



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many Forums, are porticos on the perimeter, where actually the perimetral colonnades can be understood as a logic evolution of the original rows of trees enclosing the public voided space. As a human action, the design of Forums is even more closely related than Agoras to the design of their borders. Because of the regularity of such rectangular shapes marked on the ground, the porticos with their colonnades represent a way of defining and delimiting a space in such a specific way. Probably preceded by the rows of trees, the colonnades act as a filter which constitute a border in the sense Richard Sennett would understand it, leaving the space of the Forum opened though perfectly delimited at the same time, allowing a porosity of access, a permeability for the public to access the artificially-delimited-by-humans voided-public-space.³⁴ In many of the cases, one of the smaller sides was usually occupied by a temple - again along so many exceptions - and the opposite side by a judicial basilica, with all the council chambers being disposed around the rest of the perimeter.³⁵ All this means that Forums were actually conceived as well as elaborate compositions that were bringing together the several institutions related with civic, economic and cultural life around the space with the biggest influx of people, proving the ambition of centralization of the roman city already during Republican time. It is possible to state that the geometrical principles of a Forum go beyond the orthogonal grid on which several colonial cities were developed along the territory. This means that it is possible to find rectangular forums in colonial cities following an orthogonal grid like Timgad, in northern Africa, but as well in cities like Pompeii where the orthogonal grid is much less evident and the orthogonality or regularity and the autonomy of the Forum acts like a glue of the urban parts. Being in fact an *urbanist-architectonic* entity or artifact capable of linking in one space many public services and activities.

The passage from the originally Greek Agora to the strictly speaking Roman Forum has as an underlying topic that the ruling forces in both cases related to such collective spaces as a tool for conserving power. Taking the *democratic* set up of the Greek Agora as a starting point, concentrating around it all the communal assemblies, the beginning of the roman empire - that followed the decay of the republican period - made of Forums a highly promoted initiative from the

34 Richard Sennett's notion of Boundary compared to Border is followed in this thesis to understand the difference between something that is imposing impermeability and something else that proposes a delimitation without forbidding to transit through it. Sendra, Pablo; Sennett, Richard, *Designing Disorder: Experiments and Disruptions in the City*, Verso, London 2020.

35 This regular disposition is what is named according to Pierre Gros, "bloc forum." See Gros, Pierre. *Forums in Gros, Pierre (ed.) L'architecture Romaine. Tome 1. Les monuments publics*, Picard, Paris 1996, pp. 207.

Figure 10. Forest for Change. Es Devlin. Sept 2021. London. / Figure 11 & 12. Reconstruction Forum of Cosa. / Figure 13. Floor plan. Hippodamic grid applied to the Miletus Peninsula. 4th century BC. / Figure 14. Floor plan. Roman grid. Timgad. The city of Timgad, in today's Algeria, was founded as a military settlement by Emperor Trajan around AD 100. Socks-Studio. / Figure 15. Floor plan. Forum of Pompeii. In John Henry Wright. "A history of all nations from the earliest times; being a universal historical library". 1905. / Figure 16. Floor plan. Imperial Forums. Rome.

side of the emperors of the 1st century.³⁶ It was a way of finding support along the urban classes, like state workers, the army, or local bourgeoisie, for exerting their power as totalitarian emperors in front of the former republican senate, constituted mainly by elite families.³⁷ During this century the emperors founded lots of new cities along the whole empire where to cultivate a ruling urban class that would support them. Some colonial cities then were founded on the base of military camps that used the orthogonal grid as the main directing scheme for their development on the ground as stated earlier. The rectangular and geometrically regular Forums located in the center, close to the crossing of the two main directive axes of the cities, was not anything else but a reinforcement of this idea of featuring the power of the ruling class. It was represented through them and their architecture the majesty of the empire and the emperor, using their centrality inherited from the Agora, their more radical proportions and the colonnades delimiting their perimeters as the main design ingredients. Cesar's Forum as much as Augustus Forum are examples of monumental applications of such principles, featuring them almost like absolute rules, embalmed or petrified, with the main goal of featuring the imperial might.³⁸ The autonomy given to such regular open spaces or orthogonal voids because of its disposition in the middle of the sea of built, delimited by a very clear and systematic scheme of colonnades and porticos and centralizing many of the public services and activities, create a place of exception in the city for reassembling the collectivity, that is retained in this research.

The act of delimiting a space is the first step in order to define it as such. To consider the regular kind of Forum is useful to summarize the conceptual power of such design that implements as well many features of its precedent, the Greek Agora. Using the scheme of the Stoa porticos, making of it a continuous motif used this time for delimiting the Forum's whole perimeter makes of it that, instead of generating an impermeable border around the voided public space, a transitable and permeable boundary is activated, allowing to define the space enclosing it and rendering it accessible to the big public at the same time. These are some of the main learnings able to be extracted from such an ancient example of a space specifically made for the collectivity, as well the fact that, in terms of the use given to them, forums became the political, economic and cultural centers of Roman cities.

³⁶ The word democratic is understood in the ancient context, and not in the contemporary one, with all the privileges, machisms or slavery around which the status of citizenship was built back then. For specifications on the concept of Greek democracy see Robertson, Noel, *The City Center of Archaic Athens*, The Journal of the American School of Classical Studies at Athens. Vol 67, No 3 (Jul-Sep., 1998) pp. 283-302.

³⁷ Chueca Goitia, Fernando, *Breve historia del urbanismo*, Alianza, Madrid 1998.

³⁸ Gros, Pierre. *Forums* in Gros, Pierre (ed.) *L'architecture Romaine. Tome 1. Les monuments publics*, Picard, Paris 1996, pp. 216.

During the Middle Age, Europe witnessed a dramatic increase of the urbanization of the territory. By sprawling new cities along the continent in a diffuse way, the number of existent towns doubled. Around 1207 Thomas Aquinas stated, as an example, that *The city is the perfect community [...] and building cities is the duty of kings*.³⁹ The size of cities was quite modest since the population was distributed in an even way along the European territory as a consequence of the sprawling.⁴⁰ Some colonial enterprises were undertaken because of strategic reasons: economic, commercial or because of military defense.

In France for example, a group of cities called *bastides* were built, mostly on the southern part of the country as newly founded urban artifacts for accomplishing strategic functions. The city of Monpazier in southern France is a great example of bastide. It is curious to see how once again a gridded floorplan was imposed for their founding as cities were designed based on an orthogonal imposition of a road system.⁴¹ It is perceived in the bastides that a central plot, resulting from the gridded division of the land, it is reserved to be used as the central square, as a public void for collective exchange, an Agora or Forum. Such colonial exercises using the grid as some Greek or Roman military camps did already in the past, were well appreciated and extended not only amongst southern France but north-eastern Spain, with the city of Villareal as an example where the urban gridded nature is still visible as well as its main square; and in the Netherlands, Switzerland, Germany, or Italy as well.⁴²

Such examples of cities, some of which one still can visit nowadays, had their origin in these central voids resulting in the very middle of imposed radical orthogonal grids that can be somehow represented by the *Ideal City* of Francesc Eixemenis.⁴³ They always counted with a central plot available for collective gathering. Eixemenis, a Catalan middle age writer, friar and bishop, was author of such important literature written in Valencian like *Regiment de la Cosa Pública* (1384) (Management of the Public thing), in which it is shown the importance of local legislation and communal agreement. And, interestingly, he speaks about

39 Ibid.

40 From a political point of view, these cities were almost autonomous entities. They were communities able to bring better opportunities and benefits for its citizens, and municipal authorities became of great importance. The countryside around them was of crucial importance too, and understanding the need of it for the economic activities such as agriculture or farming gave to municipal authorities great economic and political power through collecting communal taxes, maintaining and constructing infrastructure for the public, etc.

41 Just to mention, as a specific example, the emperor Frederick II made specific mention when founding Vittoria (near Parma) to the revival of roman town-founding rituals. See Kostof, Spiro, *The city Shaped. Urban patterns and meanings*. Thames and Hudson, London 1991.

42 Simon Stevin, a Dutch urban theorist, left beautiful examples of regular ideal port cities integrating to the gridded equation of roads, square and plots, some rectilinear water canals because of the "waterfront" conditions of cities. Kostof, Spiro, *The city Shaped. Urban patterns and meanings*. Thames and Hudson, London 1991.

43 Llopis Verdú, Jorge; Torres Barchino, Ana, *Utopía y Ciudad: La imagen de Valencia de Anthonie Van den Wijngaerde*. <https://riunet.upv.es/bitstream/handle/10251/118322/10274-38024-1-SM.pdf?sequence=1&is-Allowed=y>. Visited 05.09.22

the idea of an *Ideal city* in the 7th volume of another book, *Lo Crestià*. He talks about an *ideal city* organized following the scheme of a centrality in the middle of an orthogonal system of streets and buildings. Bertrán Abadia draws the urban proposal according to the text.⁴⁴ Without surprise, the *Ideal city* of Eiximenis uses the grid as the most radical basic element for stating a beginning. The squared plan of the city, that according to Eiximenis measured hundred steps on each side, was divided in four smaller quarters thanks to two central perpendicular axes, leaving space like this to the centrality at the crossing of both axes.

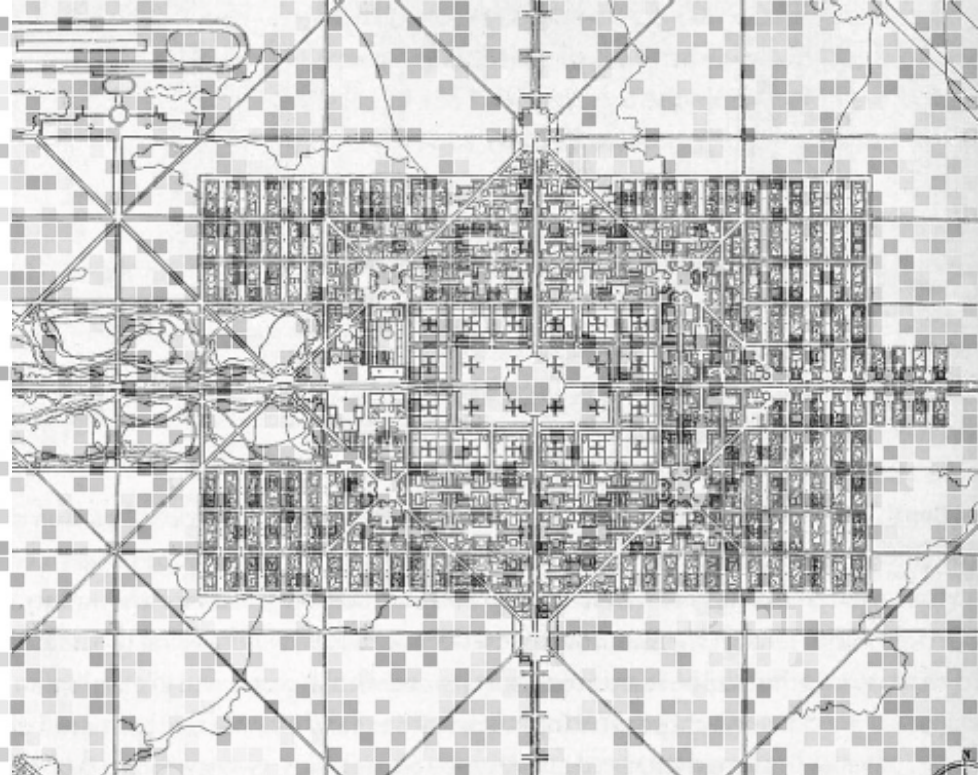
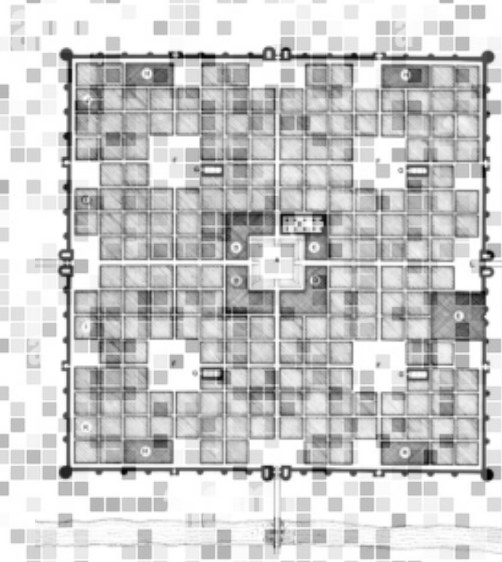
What is probably the biggest novelty visible from the graphic interpretation of Bertán Abadia, is that this procedure is repeated subsequently at the inside of the resulting four quarters, creating like this again four other subdivisions in each quarter and four new sub-centralities, one on each of the quarters, generating like this a polycentric city with one main center and four secondary other ones. When looking at this plan, one could directly think there is a clear formal link between the Eiximenis city and Le Corbusier's *Ville pour trois millions d'habitants* comparing their polycentric conditions, where apart from the center where office towers are located, some diagonal axes create four sub-centralities around the big office central area as well. Generating like this a very early scheme of what can be nowadays understood as a contemporary metropolis, which automatically can be defined as polycentric.

The generation of at least a centrality in newly created cities, is something that as well is present in colonial cities founded by Spanish in America. During colonization kings of Spain proclaimed laws which enacted rules to unify the management of the discovered territories. For example, a regular urban scheme based on the paradigm of a centrality within a grid was promoted and legislated. Continuing in the same direction as the examples described before, the Spanish towns in the new continent counted with a square or *plaza de armas* in the very center, similarly only to the already appeared in French bastides, and that was foreseen as a collective place in the center, a public ground for gathering. Public orthogonal voids for collective functions were planned following a sort of *arearum*, occupying the central plot of every new city resulting from the gridded land division. The radical centrality represented by the public square or *plaza de armas* was behaving as a pivot for a subsequent number of plots around.⁴⁵ The starting point of Spanish colonial gridded schemes was having a basic structure of three times three squared plots, so a total of nine plots. That was the *embryo*

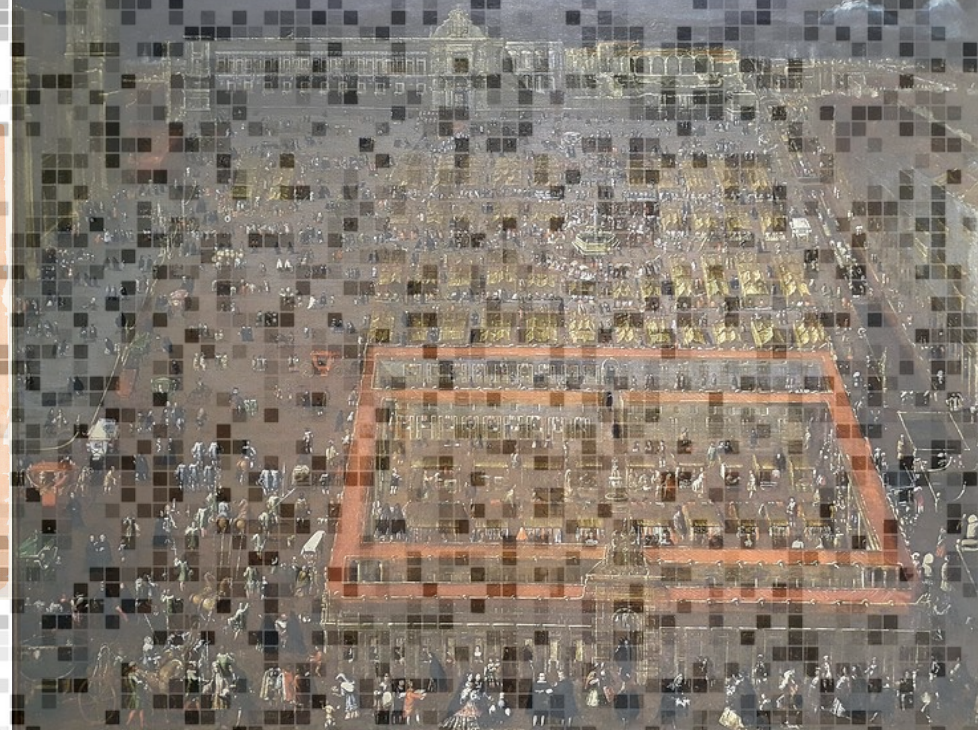
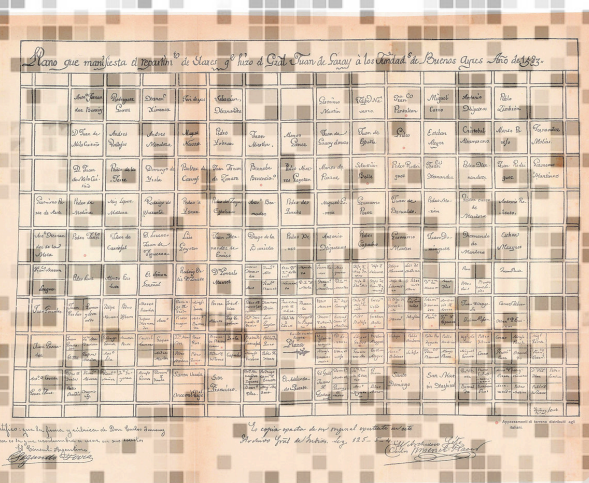
44 The floorplan scheme can be consulted here: Llopis Verdú, Jorge; Torres Barchino, Ana, *Utopía y Ciudad: La imagen de Valencia de Anthonie Van den Wijngaerde*. <https://riunet.upv.es/bitstream/handle/10251/118322/10274-38024-1-SM.pdf?sequence=1&is-Allowed=y>. Visited 05.09.22

45 One could even speculate that the "plazas de armas" are formally direct heritors from the Mediterranean Agora or Forum.

Figure 17. Ideal city of Eiximenis. 1384. Interpretation of Bertran Abadia. / Figure 18. Foundational plan of Resurrección (actual Mendoza). 1562. / Figure 19. Foundational plan of Buenos Aires. Juan de Garay. 1580 / Figure 20. Plan of "Ville pour Trois Millions d'Habitants" of Le Corbusier. 1922 / Figure 21. Painting. Plaza Mayor. Madrid. Juan de la Corte 1623. / Figure 22. Painting. Cristóbal de Villalpando. View of the Plaza Mayor of Mexico city, 1695.



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conceived as a default solution for any matter of urbanization. Villa de Leyva in Colombia, for example, is still nowadays a clearly visible example of the original *embryo*. The land division through the means of a radical grid was a legalistic and programmatic approach that mainly regarded private ownership of the land amongst which one plot remained void as a public central ground. When looking at further developments of grids in south America, it can be pointed out the gridded schematic plan of Juan de Garay for Buenos Aires in 1580. Here again, a virtual and radical grid is layout according to the King's rules. The specific point of such plan, proving the adaptability of grids as basic elements that try to establish the direction in which to develop urbanization is that the *plaza* is located this time on the lower part of the city, closer to *La Plata* river, giving a contextual seafront condition to the city and making of such a universal imposed system, a specific design with a decentered center.⁴⁶

After such colonial experiences exemplifying on how geometric man-made guides have ruled the planning and construction of new cities, having had every time the need to count with more or less central grounds offering a place for the collectivity to gather, back in Europe, many were the squares that have undergone refurbishment or enlargement works during the renaissance period, bringing somehow the radical geometrical regularity of the *plazas de armas* from colonial experiences to the existing cities in the old continent. In Spain for example, *Plazas Mayores* like the ones of Salamanca, Valladolid, Madrid or even Cordoba show an example of regular orthogonal voids founded in the middle of an irregular medieval urban fabric. They propose a very well and strictly delimited space whose borders are incarnated by a collection of more or less uniformed facades. Sharing the radical geometry with the newly established plazas in America, as result of leaving unbuilt one of the plots amongst all the other constructed ones, these closed orthogonal entities emanate a sort of freshness, of light, like a forest clearing does, being places for interaction, for possibility, where several sorts of celebrations, recreations and diversion can take place. In the representation of Juan de la Corte of Plaza Mayor in Madrid in 1623, for example, it is possible to see the equestrian games that took place on the 21st of August of this same year to honor and celebrate the marriage of the Prince of Wales with the Infanta Maria of Austria, sister of King Philip IV. Cristóbal de Villalpando as well represented the Plaza Mayor of México in his painting of 1695 the Pavián market this time, filled with more than one thousand people, together with the royal canal, the city hall, the cathedral and the viceregal Palace.

The Plazas Mayores are political spaces. They can even be seen as instrumental, serving to the ruling forces, so in this case the kings. They are the places where

⁴⁶ It is possible as well to notice how the plots around the square, so the dis-centered center, are divided subsequently in smaller plots, making of 1 plot 4 new smaller ones and increasing brutally (x4) the density of population around the center and along the river (sea-front). This can truly be seen as an act of real estate speculation that is going to be discovered as one of the main reasons of the use of the grid in the modern world.

both in the *new* and the *old* continents, there can be commercial or economic exchanges, celebrations, but as well public punishments, executions, etc. Some of these major squares could maybe be looked at as natural developments of urban voids already existing in the past of cities, like previous esplanades or like mosque's courtyards for example.

That is the case of the new *maidan* of Isfahan, in actual Iran.⁴⁷ Proving that such urban voids aren't exclusively occidental strategies, there are examples happening beyond the occidental world. In the city of Isfahan, in Asia Minor, the rise of the Safavid dynasty and the decision of Shah Abbas-I of transferring his capital from Qazvin to Isfahan in 1597 meant that the existing old *maidan* had to be embellished.⁴⁸ The new *maidan* or square was built on the basis of the old one, constructing important buildings at their perimeter in two phases, proposing a border to enclose a major void in the city. First, from 1598, the royal castle or *Ali-Qapu* as well as the *Allah-Verdi-Khan* Bridge across the river and the *Chahar-Bagh* Avenue to give access to it, were built. And from 1611, more buildings around the *maidan* were built such as the Royal Mosque or the entrance to the royal Bazaar.⁴⁹ Even if the well-known actual state of the *maidan* or main square of Isfahan, bordered on all sides by monumental buildings linked by a series of two-storied arcades, was only acquired from 1722 onwards after extensive construction works, it can be said that Shah Abbas master plan for the city was created to convert the *maidan* in the *center of the new city*.⁵⁰ Such a radically orthogonal void in the city, geometrically traced on the ground, becomes here an *enormous, multi-functional open space, approximately 507m long and 158m wide, laid to the east of the northern end of the Chahar-Bagh (main avenue) and at a slight angle to it, surrounded by a uniform portico-screen of two storeys with a commercial function. It provided a locus for a range of functions which varied from polo games and*

47 The word *maidan* comes from Turkish, or from the Turkic languages of Central Asia. In those tongues, a *maidan* was an open place where trade or military exercises took place. The name has been borrow by Ukrainians and even Russians to call their squares. For a short period in 2014, the name of the central square in Kyiv called the "Maidan" became known throughout the civilized world. That was because it was the place where the Ukrainian people gathered to overthrow the unpopular regime of Viktor Yanukovych, who appeared to be attempting to set up a new dictatorship in Ukraine with renewed ties to Russia. This pro-Western, pro-EU, democratic movement, came to be called by Ukrainians the Revolution of Dignity, or "the Euro-Maidan." See <https://www.ukrweekly.com/uwwp/the-word-maidan-where-it-comes-from-what-it-means/>

48 The reasons for transferring the capital to Isfahan were its more central location, its good climate, and the easy access to water. Falahat, Somaiyeh; Shirazi, Reza, *Spatial Fragmentation and Bottom-up Appropriations: The Case of Safavid Isfahan*, Urban History 42, no. 1 (2015): pp. 3–21. <https://www.jstor.org/stable/26398340>. Visited 09.09.2022

49 Bazaar is the Persian word for "market" or "place of prices." Mark Pimlott states that in Isfahan the grand or royal bazaar was the centerpiece of the city from the eleventh century. See Pimlott, Mark, *The Public Interior as Idea and Project*, Jap Sam Books, Heijningen 2016, pp. 242.

50 See Falahat, Somaiyeh; Shirazi, Reza, *Spatial Fragmentation and Bottom-up Appropriations: The Case of Safavid Isfahan*, Urban History 42, no. 1 (2015): pp. 3–21. <https://www.jstor.org/stable/26398340>. Visited 09.09.2022

*the focal point for all festival performances to the accommodation of caravans.*⁵¹ But the most flawless and clear examples of such public voids in the city representing the power of the ruling forces during the XVI-XVII centuries is found in France. Back at that time, the French king had clear goals on promoting the creation and construction of representative urban voided places that would be called *Places Royales* or Royal squares. Henri IV was the first king in France that separated religion from politics, redefining like this a monarchy whose source of power was granted by God to a kind of *abstract guardian of civil peace*.⁵² This attempt to establish a secular nation came as well with the detachment of the private from the public realm having the urge then to create and construct new spatial and architectural central voids aiming at making stronger a weak public sphere. For it, the king does not only declare the capital (Paris) as the royal seat but introduces a new typology of urban space that attempts to replace the irregularities of the medieval city patterns with order and continuity.

In a continent in which citizenship was defined from the year 1000 by the fact of owning a dwelling, the façade was a screen where individuals could represent their status and identity towards the rest. The Place Royale or place des Vosges, characterized by the imposition of uniform facades and a regular shape cut out of the preexisting fabric, appears as a big change of paradigm. It is the first of the examples of a royal square in the very beginning of the 17th century, actual place des Vosges in Paris. While the actual layout of the surrounding buildings was not at all regular, the continuous facades underlined the consistency of the inner space they defined. The voided space was defined by these uniform facades, acting as their borders, and enclosing a space for the collectivity; the shared space became the focus of the project. Additionally, the ground was manipulated by paving it with a geometric pattern containing sectors for grass and green in general to grow alternated with perpendicular and diagonal paths heading towards the middle of the space, occupied by an equestrian statue of the king.

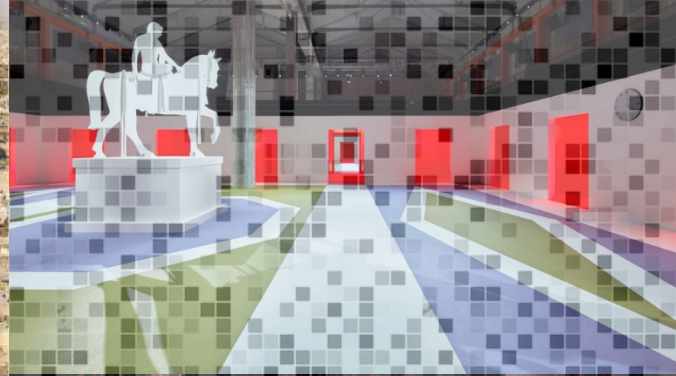
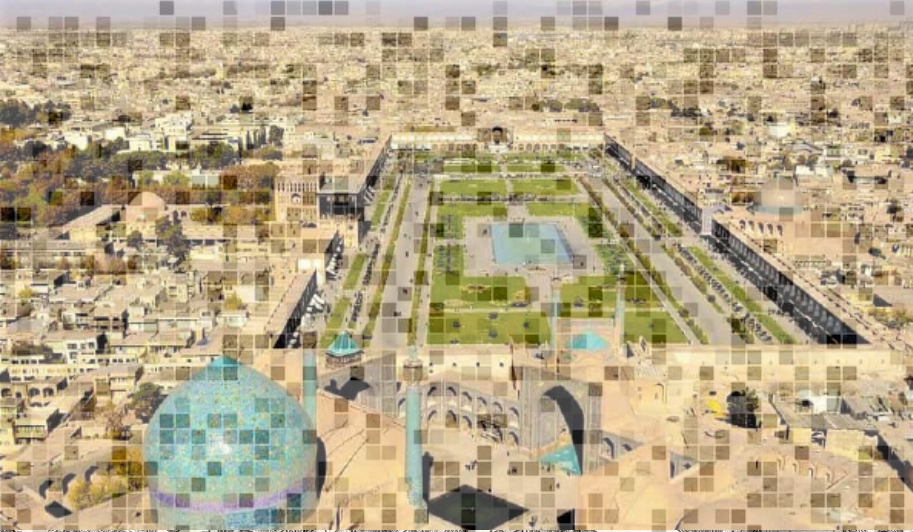
The Places Royales became, an *enduring model for urban space in France where their uniformity and readability stood as the direct embodiment of the emerging sphere of public welfare* and the city became a *model for practice of governance over the nation*.⁵³ The Royal Squares as urban voids were specifically designed as sophisticated devices using a sort of abstraction that made themselves stages of the urban life and that defined a public realm by separating it from a private one. Henri IV Royal Squares are an attempt to use architecture for managing the city. To actually use architecture as an instrument through which to construct a public sphere, a shared public domain, public space as the consequence of a

⁵¹ Ibid.

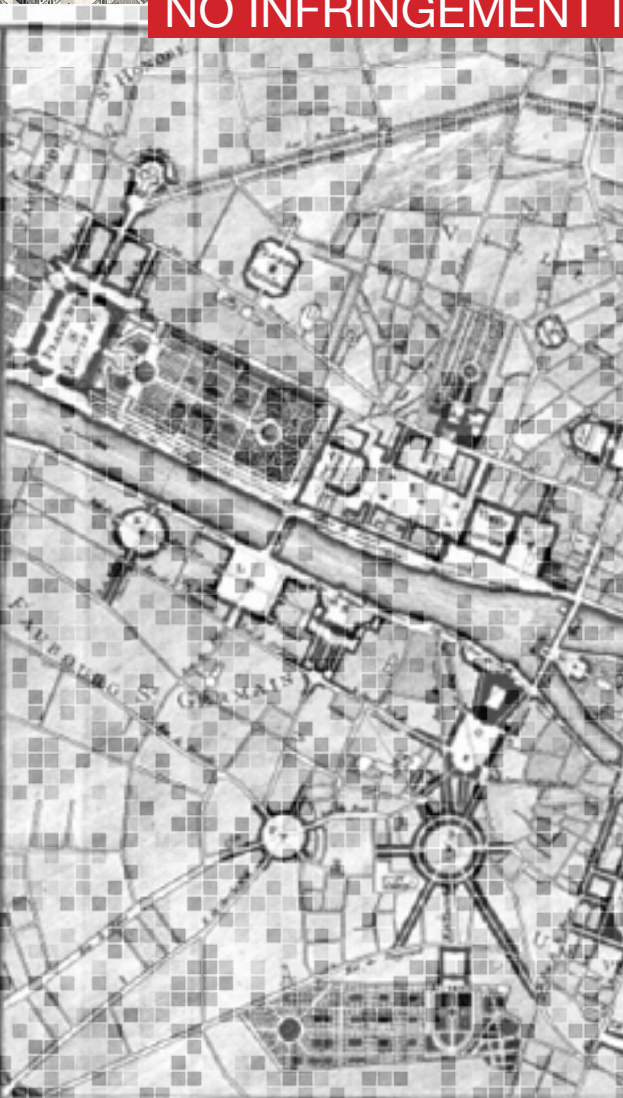
⁵² Giudici, Maria Shéhérezade, *Government and the Emergence of architecture d'accompagnement, 1584-1765*, in Aureli, Pier Vittorio (ed.) *The City as a Project*, Ruby Press, Berlin 2013, pp. 140 -169.

⁵³ Ibid.

Figure 23. Maidan or Isfahan's main Square. / Figure 24. Engraving. Place Royale. Bird's eye view from the North-west- Turgot Plan. 1739. / Figure 25. Pierre Patte, *Monumens érigés en France à la gloire de Louis XV*, Paris 1765. / Figure 26, 27 & 28. AMO's Fall Menswear 2020 show design for Prada. Deposito Prada.



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conscious political choice.⁵⁴ The state plans and regulates the public domain. This is a fact that brings to discuss a concept developed by architect, teacher and researcher Maria Shéhérezade Giudici which is the *Architecture d'accompagnement* or *formulaic architecture* that, according to her, *represents the apex of a long process in which the facades of domestic buildings were transformed from a literal projection of individuality into the generic stage design of the bourgeois city. The form of the city was severed from its actual architectural content in an attempt to generate a new category of the urban: public space.*⁵⁵ The access to these squares was specifically designed and controlled too. Made through the corners, or as well often axial, the way in which the citizen could access such spaces was crucial to keep up with the so wanted atmospheric effect of unity and spatial enclosing. The phenomenon of the royal squares still got developed up to the end of the 18th century with the Place Dauphine, Place des Victoires, Place Vendôme or the Place de la Concorde, showing with it that common spheres and the creation of public places for the collectivity are man-made actions, being exclusively products of political intentions and coming as initiatives from the ruling forces, even being useful tools for strengthening their power.

In January 2020, Prada, the well-known fashion brand, presented its 2020 Fall/Winter Menswear collection at the *Deposito* of its foundation in Milan. For it, OMA's sister office AMO designed a set of two imaginary identical piazzas that, according to them, *manifest(ed) the abstract energy of the public arena.*⁵⁶ A playful abstraction of an equestrian statue was positioned at the center in both cases, remanding of such regular and geometrical voids one is able to find in the city, perfectly delimited by clear architectural borders and hosting in the very center and object paying homage to some kind of king, emperor or hero. These clear architectural borders were in this case symmetrically pierced walls generating sorts of facades with four doors each of them and that were back-lit with a strong and diffuse red light not allowing the guests to understand what was happening behind the borders of the fictitious squares, *between the exposed and the concealed.*⁵⁷ Guests were invited to ascend through a grand staircase and overlook the ensemble of fake public spaces from an above raised platform. Models transit though the space on a ground that counts with some colored geometric patterns without following the typical catwalk line, but rather seeming like heading each of them to a different point of an imaginary city. The overlook to this fictional outdoor open spaces or public two voids became almost a pre-monitory event, advancing what would be the experience of the whole world in the months to come because of COVID 19 pandemic: a voyeuristic staring of a perfectly delimited and empty public space from everyone's apartment. To guess

⁵⁴ Ibid. pp. 146

⁵⁵ Ibid.

⁵⁶ That is what OMA/AMO described in a little text titled *Trajectories*. https://www.prada.com/us/en/prada-sphere/fashion-shows/2020/fw-menswear.html#component_text_modul Visited 09.09.2022.

⁵⁷ Ibid.

the reasons behind the choice of such a set up for doing a fashion show can be a never-ending task. However what can be commented are several of the reactions of the press and visitors back then. Some defined for example the public spaces represented fictionally for the show as *fascist-style squares* adding to such geometrical displays a meaning of being designs reflecting an authoritarian power.⁵⁸ Some others defined the fake public voids as metaphysical squares inspired by the paintings of Giorgio De Chirico.⁵⁹ And as well mentioning the concept of surrealism, which has been crucial for understanding the origins of OMA and the work of Rem Koolhaas in particular, defining the display as something that matched with the collection since it stages this *Classic surrealism*, somehow contradictory or dichotomic, and that uses the image of the constructed fantasy of a traditional public space but that looks into the future, that becomes trendy, that allows the audience to watch the models *wander(ing) through the space, appearing and disappearing, following invisible trajectories*.^{60,61}

Such an example only reinforces the belief that the public voids in the city represent a very deeply embedded social, political, and spatial paradigm in our cultures. The unbuilt pieces of land, specifically delimited for collective purposes are key places for human life that throughout time have served a big variety of functions related with economic activities, but as well with politics, or any kind of social interactions including recreation matters.

Even if nowadays such voids seem to be somehow inherited obsolete kind of ruins or mausoleums of public life, such voids are still active political, social as well as still economic assets for humanity, not only being the source for melancholic artistic inspirations but as well serving direct functions of the everyday contemporary life.

Previous to the invention of the information technologies, the need to interact with the collectivity and so the need for creating public places, has been crucial for the survival of people. The public realm and, more in particular, these public voids, have fulfilled complementary needs for the individuals allowing them to carry on with their lives. Generally located in a central location amongst the city - or the neighborhood - and often clearly delimited by specific borders - usually being a set-up of more or less regular facades - they have been one of the main available resources that have served the population, both in terms of giving access to information, allowing to take part in collective discussions or making use of the electoral function, but as well in having access to more utilitarian resources

58 Conti, Samantha, *Prada Men's Fall 2020*, in WWD. <https://www.wwd.com/runway/mens-fall-collections-2020/milan/prada/review/> Visited 09.09.2022

59 Leitch, Luke, *Prada Fall 2020 Menswear*, in Vogue Runway. <https://www.wwd.com/runway/mens-fall-collections-2020/milan/prada/review/> Visited 09.09.2022

60 Vinci, Rosana, *Il deposito di Fondazione Prada diventa una piazza metafisica* in Archiportale. https://www.archiportale.com/news/2020/01/architettura/il-deposito-di-fondazione-prada-diventa-una-piazza-metafisica_74299_3.html Visited 09.09.2022.

61 See OMA/AMO text titled *Trajectories*. https://www.prada.com/us/en/pradasphere/fashion-shows/2020/fw-menswear.html#component_text_modul Visited 09.09.2022.

like goods in general, food, or something as basic as water. As a consequence of this, many of the squares inherited from the past have a fountain located along the public surface. This fountain can be located in the center of it and confer to the public square a more functional value. In opposition, the fountain can co-exist with central statues that act as symbols of specific powers, making these squares both symbolic and functional ones. As Camillo Sitte defends in the first pages of his well-known book *The Art of Building Cities: City Building according to its Artistic Fundamentals* (1889), [...] *the main squares of each city were (in the past) essential for their daily existence.*⁶² To which he adds that *there is never missing a more or less monumental fountain in these squares.*⁶³ Sitte explains that usually the fountain is not located in the main axis of the traffic because of functional reasons, since the animals or the people that stop around in order to drink or to take some water home would block the main flow of traffic. But there are some cases where the fountain as well stays really in the middle of the square. An example of such, not coming from Sitte's book, can be the so many village squares along the eastern coast of Spain. In a small town called *Alfajar* for example, close to the city of Valencia, every first week of September the citizens still make a celebratory dance around the fountain, located at the center of the town square, that was built to commemorating the groundwater discovery and abstraction in 1912, in a period where there was not yet running water installations at the houses.

Starting from such a basic need like the one of getting easier access to drinkable water at the public central surface, the voided central spaces in the city have been as well granting access to so many modern resources along the 20th century. One of the most complex and extensive examples would be the case of Central Park in New York. In a city with a much bigger scale this time, fully developed on the basis of a regular grid, a voided central space reserved for public activities appears as a central public surface meant to serve the citizens with resources they could not find at their living spaces anymore. These are fundamentally nature, fresh air, broader spaces to have walks or to exercise nowadays, etc. Central Park started to become a reality in the middle of the 19th century. As it was a central square among the radical city grid, Central Park appeared as an oasis, becoming a metropolitan park, an urban manifesto, a *Synthetic Arcadian Carpet*.⁶⁴ It was located in the very middle of the city like one of the *stains* or interruptions represented in the sketches and drawings of Superstudio's *Super-*

62 See Sitte, Camillo; Stewart, Charles T., *The Art of Building Cities : City Building According to Its Artistic Fundamentals*, N.Y: Reinhold, New York 1945, pp. 6

63 Ibid. pp. 16

64 Rem Koolhaas catalogues such central park in his retroactive manifesto *Delirious New York*. In it he wrote as well his short story about "The city of the captive globe", which was an early allegory to the urban orthogonal grid that was ruling the city of Manhattan, he enclosed the "globe", he conceptually captivated the planet earth in the middle of all this buildings with plinths occupying every plot of the grid. And even if this short story was an "early and intuitive exploration about the architecture of Manhattan " the fact that Koolhaas chose to represent Central Park captivating the planet earth metaphorically is revealing. See Koolhaas, Rem, *Delirious New York : A Retroactive Manifesto for Manhattan*, Oxford UP, New York 1978.

surface.^{65,66}

In a universe completely made and designed by men, Central Park is a synthetic nature, a totally artificial enterprise, a *Third Nature*.⁶⁷ It is a technological equipment for leisure in the city and a scene for everyday activities. Its design and execution are completely enhanced and produced by the use and master of technology that has made it possible to synthetically recreate natural scenes: *Lakes are artificial; trees, (trans)planted; accidents, invented*.⁶⁸ The fact of converting the traditional political voided surface of the city into an urban park this time, is a direct consequence of the increasing urban density, which at the same time is directly related with industrialization. More people are needed as working forces in the city, so bigger the city becomes. The central public void that Central Park represents becomes even an alternative to the metropolis itself, a way of escaping the city and the *culture of congestion* by paradoxically becoming a garden carpet, artificially filled with nature, inside of an urban grid being a bigger carpet; so a *meta-carpet* or *infra-carpet*.^{69,70} It actually becomes a place of possibilities, a *heterotopy*,⁷¹ still remaining autonomous, having its own life beyond the technology that made it possible, becoming an open entity, a non-deterministic technological tool, an artificial urban Oasis conserving still its own inner synergies that make of these public voided spaces in the city, and parks in particular in this case, the ideal scenes for the possible.

65 <https://www.cca.gc.ca/en/search?page=1&digigroup=473260>

66 The movie consisted in a series of collages and graphic documentations about the project Supersuperficie created by Alessandro Poli together with his colleagues of Superstudio corresponding to the first out of five points of action of the group "life". It was a short 15min movie articulated along a textual and drawn storyboard orchestrated by Poli.

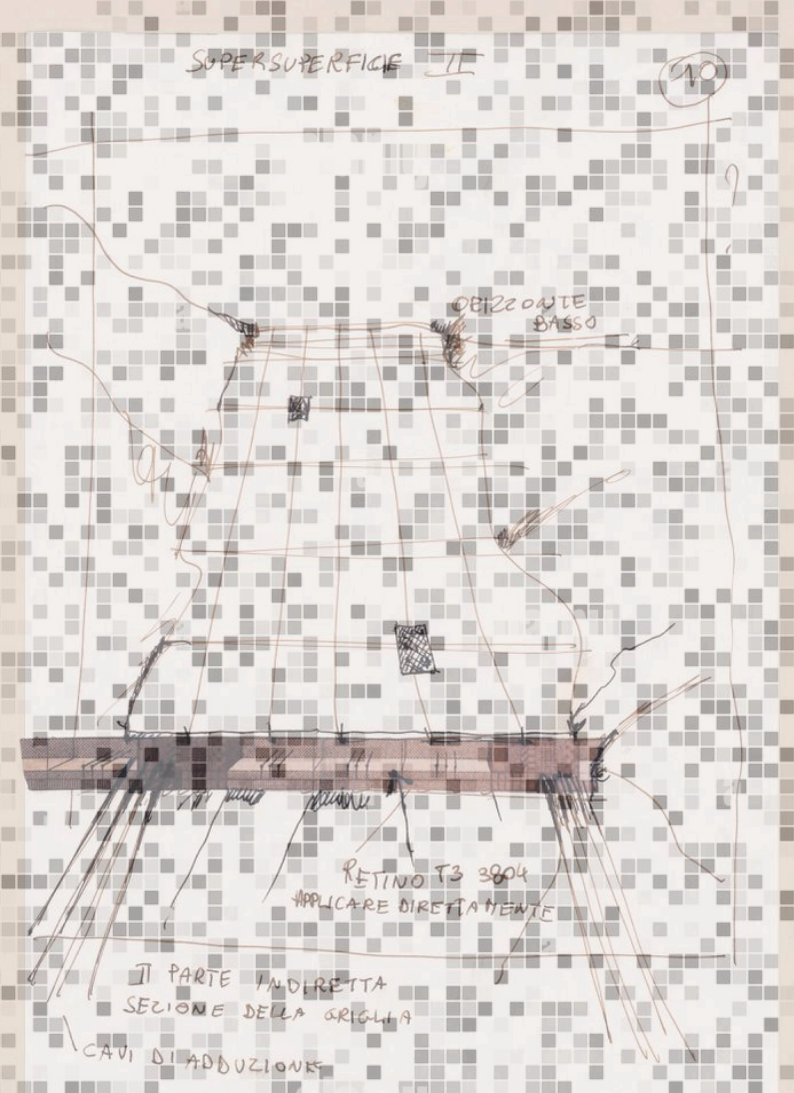
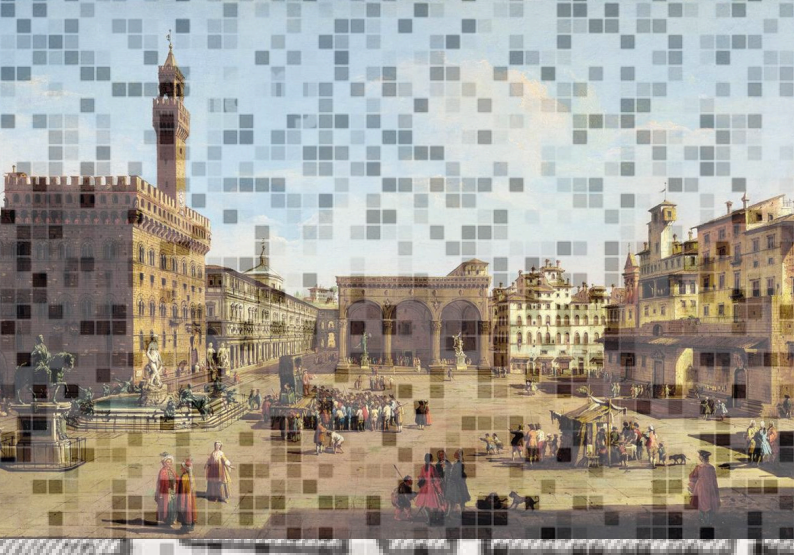
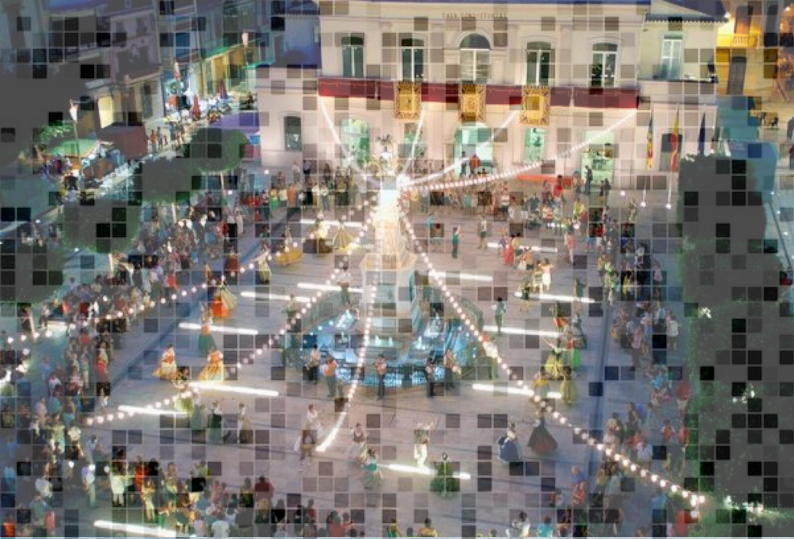
67 Cristina Díaz and Efrén García form Amid.Cero9, have used this composed term willing to explain in a coherent way the research on their main interests: the space of mediation between people, objects, constructed surroundings... This term was coined during the renaissance by Jacopo Bonfadio, Italian humanist and historian, referring to a new kind of garden that was creating a new and unknown reality--a Third Nature--with a new and radical materiality that had been constructed through cultural connections. Díaz Moreno, Cristina; García Grinda, Efrén, *Third Natures: ten years of mundane, carnal assemblies*, El Croquis, n° 185: Amid.Cero9, Mos. 2016. pp 23-39.

68 Koolhaas, Rem, *Delirious New York : A Retroactive Manifesto for Manhattan*, Oxford UP, New York 1978. pp. 23.

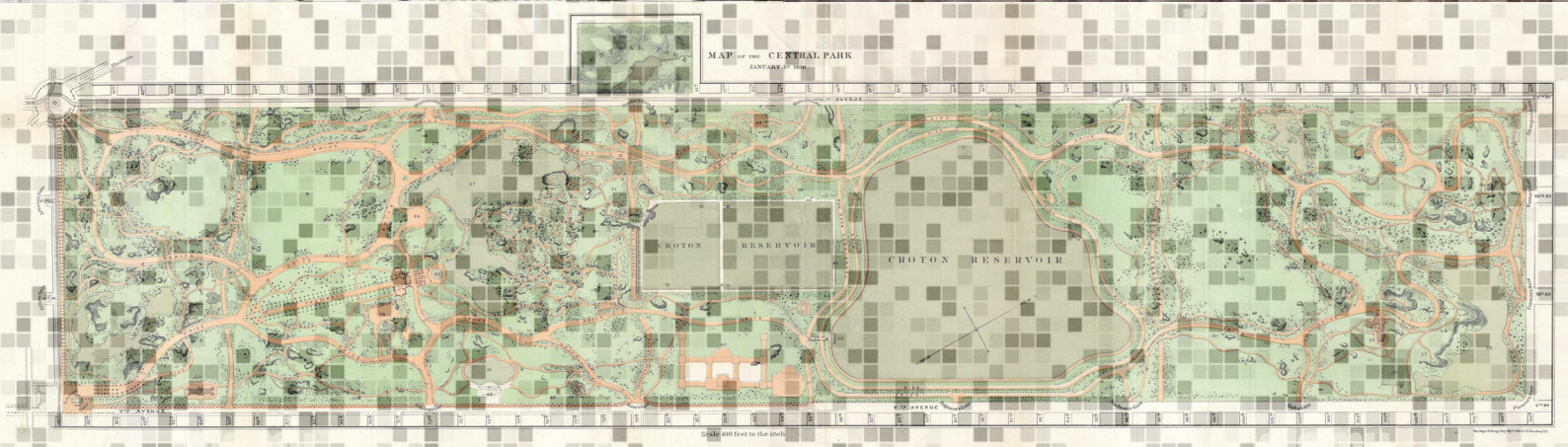
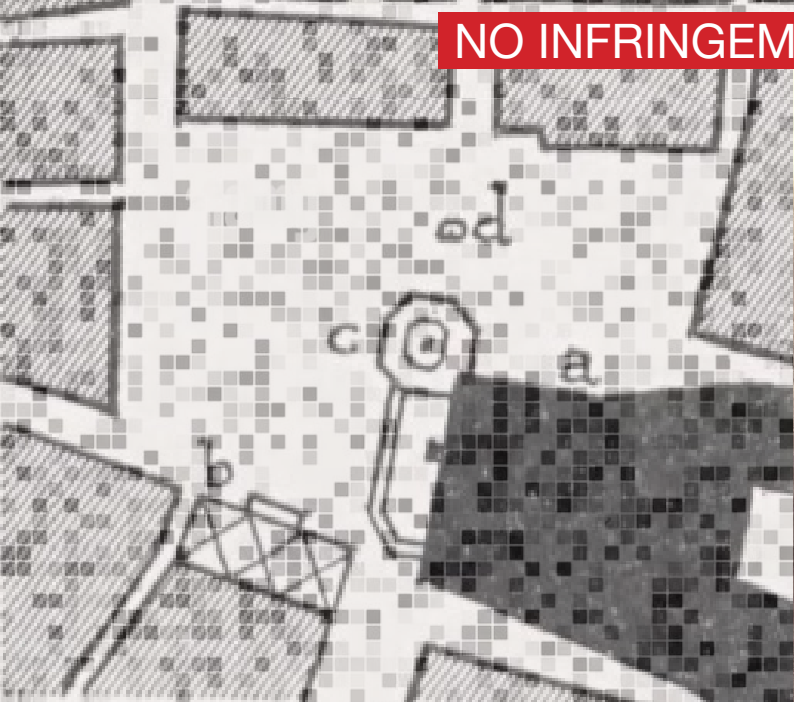
69 Ibid.

70 Concepts issued from Marot, Sébastien, *Sub-urbanism/Sur-urbanism: From Central Park to la Vilette*, AA Files, no. 53 (2006) pp. 20-37.

71 By definition, Michel Foucault explained that an heterotopy has the role of creating a space of illusion, that denounces as more illusory still the real spaces in which human life takes place. An heterotopy has the actual power to juxtapose on one same place different spaces, multiple locations that are between themselves incompatible. Foucault, Michel. *Des espaces autres*. Lecture given at the *Cercle des études architecturales*, March 14th 1967. Published in *Architecture, Mouvement, Continuité*, n 5, October 1984.



NO INFRINGEMENT INTENDED



1.3 **NUEVO CENTRO, A URBAN SLAB TO BE RE-DISCOVERED**

Being one out of several private initiatives trying to propose an ensemble of collective spaces after the Second World War, the commercial center incarnates an attempt for solving, or at least a tentative to respond to, many of the questions and problematics identified by the participating members of CIAM 8. In a tireless search for reinterpreting the traditional voided public places constituting the center of the historic European city, the regional commercial center appeared in the United States, parallelly to the celebration of CIAM's 8 congress, addressing in a new way the many of the concerns and problematics exposed about the public sphere and public space.

Commercial Centers have generated public places from the mid 20th century. Synthesized or born in the middle of the North American territory initially, more particularly amongst cities that didn't have the scale of major capitals but rather regional ones, they were designed mainly because of capitalist consumerist activities, that had to reach the whole territory. Afterwards, when they emancipated and traveled back to the actual city or metropolis, not only of the American continent, but of the whole world, they became in some countries, the almost exclusively ensemble or network of public places in which the collectivity could have a place to hang out and meet. However, and even if commercial centers that from their beginning have been conceived as a capitalistic machine growing parallelly with the society of consumerism, they are seen in this thesis as a turning point in the contemporary generation of public places.

At the moment of the genesis of these buildings, which were designed and thought for people to consume products in a context of capitalist mass consumption, it is remarkable to see how the activities of consumerism were organized around the topic of the voided collective space through the injection of certain spatial elements and according to an ensemble of design strategies.

When looking closely to the existence of traffic, something that was as well transversally commented at the CIAM 8 - motorized traffic this time - is interesting to see how the traffic routes already back in the Greek Polis, according to Chueca Goitia, were leaving the Agora generally on the sidelines of circulation, making of it a traffic-free node. In the 50s, and especially considering the apparition of cars, *one of the first requisites of all of these centers of community life (was) the*

Figure 29. Traditional "Festa de la Font." Alfafar. 2019. (Spain) / Figure 30. Piazza della Signoria and Neptune Fountain. Painting of Giuseppe Zocchi (XVIIIth) / Figure 31. Piazza della Signoria and Neptune Fountain. Plan extracted from Camillo Sitte's book. / Figure 32. Supersurface. Alessandro Poli's Sketches. 1972. / Figure 33. Construction of the new reservoir, Central Park, New York, 1862. New York Public Library. / Figure 34. "Arcadian Synthetic Carpet" Central Park. New York City.

*separation of pedestrians and automobiles.*¹ Nowadays, and after an exponential growth of the fabrication of cars influenced by the capitalist tendency of car ownership, many have been the reflections upon the management of the traffic of automobiles in cities that somewhat have mainly continued in the direction of CIAM, trying to differentiate radically between the pedestrian areas and the routes for motorized traffic. It has been something that from the very beginning of the mass production of automobiles back at the start of the 20th century has been problematic. Pioneer laws forbade the entrance of cars in several downtowns of USA cities at the awakening of the 20th century. These laws got abolished a couple of weeks after being established because of the complains of retailers at downtown, that were denouncing a dramatic drop on the sales.²

Commercial activity has been closely related with the development of cities back in the past and it is still nowadays, especially in an occidental capitalist society. It becomes clear that with the invention of new motorized ways of transport, such as trains, undergrounds, but especially individual means of transportations like cars, the situation in which the territory could be surveyed changed abruptly. With the explosion that supposed the mass-production of cars, a massive quantity of citizens, especially living on the suburbs of American regional cities - such a great paradigm of the diffuse city - were using cars to reach the downtown of cities too, or what is the same, the *center* of such cities. There, they could make their purchases and go to the movies or to the theater in the evening. The city closely dependent on the human economic activities of capitalism, turns at this point into a paradox where humans are joining the centers of their cities with their cars on one side, but centers are wanted to become pedestrian places for allowing citizens to move freely on the other. The apparition of shopping centers in the U.S.A., especially in regional cities, is related with such facts and are seen by personalities like J.L. Sert as a *trend in the right direction* when considering ways or *attempts to explore the subject of the contemporary design of the hearts of our cities.*³ Commercial activity has been related specifically to the Core of cities from their very origin. An example of that was the Greek Agora that hosted a market from its very early days. A figure that becomes crucial at this point of the reflection is Austrian architect Victor Gruen, as well known as the *Mall maker*,⁴ that has carried research and empirical practice on these important topics for the contemporary construction of the city and in particular of its public places. It is

¹ Sert, Josep Lluís. *Centres of community life* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

² Ben-Joseph's, Eran, *Rethinking a Lot: The Design and Culture of Parking*. MIT Press 2012.

³ Sert, Josep Lluís. *Centres of community life* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

⁴ This is the name given by M Jeffrey Hardwick to Victor Gruen, that writes a book about Gruen's architecture and career. Hardwick, M. Jeffrey, *Mall Maker : Victor Gruen, Architect of an American Dream*, University of Pennsylvania Press, Philadelphia 2004.

revealing to revisit his projects and read his texts to acknowledge that, beyond how much his work has been copied in such a superficial way, and criticized too, an important fact on Gruen's career is that he *began to experiment (...) exploring dynamics of the interaction between private commercial spaces and public spaces*, something that nowadays could continue to be explored.⁵

Commercial centers became a tentative of proposing a symbiotic way of working between private and public interests. In this way, working for many years developing variations on the type of commercial center, his work has had a true influence even on the structure of cities. Mixing private with public interests was allowing him to understand the benefits of not dividing such realms but make them coexist and feed each other. The capitalist system runs parallel to the development of the city, and of course would be unfair to claim that architecture by itself can truly control or modify the conditions of such a system. Something that probably Gruen understood better than others was that being aware of such a system helped him to design knowing the boundaries of action of architecture, but trying to truly make the most out of the discipline.

In his own words all his commercial projects were conceived not only as mere consumerist machines but as *urban crystallization points able to offer to the suburban population significant life experiences and create environmental qualities that will help fulfill the human's heart desire in the city's Heart*.^{6,7} With these two claims, Gruen clarifies that the commercial center is something clearly suburban or regional, a new architectural type, and that what he tries to do is to generate urban places in such locations, believing on the strong impact that they could have as potential *hearts of the city*. This is actually an important point where architecture shows itself as being able to act beyond the scale of the building. When Gruen joined consumerism together with a new urban structure, the architectural expression of such action became a truly urban proposal. Probably because of his European provenance and education, Victor Gruen was able to inject with some urban features issued from the European city many of the regional commercial centers across the United States. The commercial center is defended in this research as being, still up until now, the most innovative output in such a lineage of voided collective spaces happening on a delimited surface and with a socially-committed ambition.

The conceptual strength of this mid-twentieth-century typology resides in the fact that what was proposed there was always a gathering place in spatial terms. Many of such spaces have been shaped and designed from the beginning trying to artificially stimulate outdoor gathering spaces by proposing glass ceilings for letting the natural light in, the presence of artificial plants with plastic leaves,

⁵ Zuccaro Marchi, Leonardo, *Victor Gruen: the environmental heart*, The Journal of Public Space 2 (2). 2017.

⁶ Gruen, Victor, *Centers for the Urban Environment : Survival of the Cities*, Van Nostrand Reinhold, New York 1973.

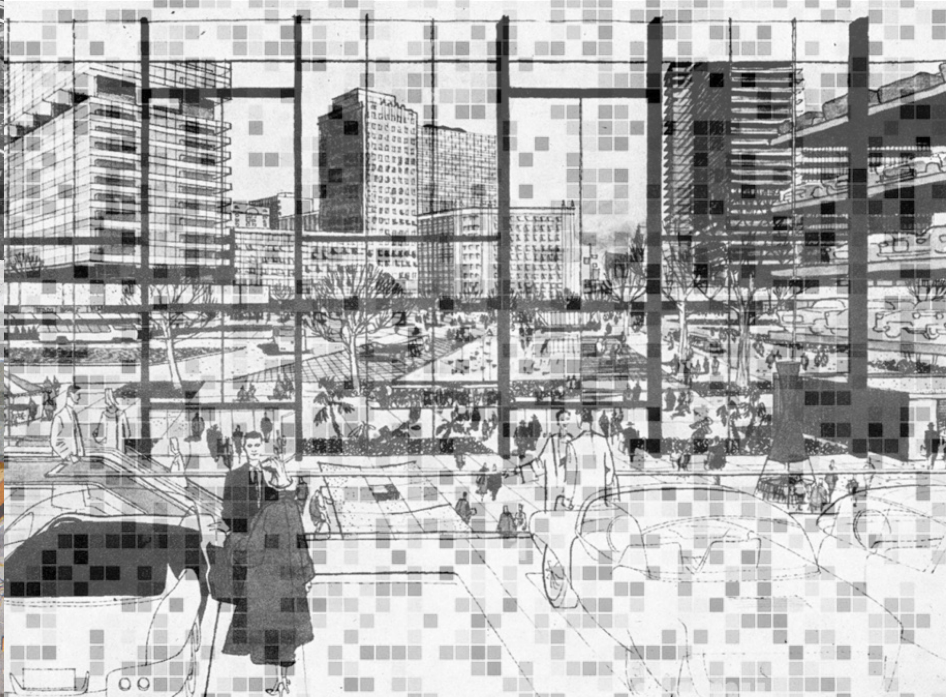
⁷ Ibid.



NO INFRINGEMENT INTENDED



SOUTHDALE
REGIONAL SHOPPING CENTER



and laying out some urban furniture like benches or displaying beach umbrellas in an indoor situation. These centers, initially always constituted by a covered atrium or plaza surrounded at the same time by commercial premises, additionally retained in their essence the learnings issued from a good knowledge of the historical collective places from the European city and its past, and it has been proven with time that the embryo of such commercial centers has always been, even if bent to the service of capitalism, the collective gathering spaces hosted on a delimited surface that has its origin in the Ancient Greek Agora.

Victor Gruen understood that these collective spaces around which the design of commercial centers were orbiting, places inheriting many features from the hearts of cities, could be pushed to the limit and really be conceived or conceptualized as exclusively pedestrian grounds.

Gruen's project for the renewal of the city center of Fort Worth in Texas (U.S.A.) in 1956 was basically a re-design of Fort Worth's downtown through the commercial center experience, transplanting the existing *Heart* of the city with a new Heart that somewhat had been synthesized in the suburbs. Gruen's Fort Worth project basically proposed a new raised slab that offered a new man-made pedestrian ground level guaranteed by the podium-like construction. For Worth's unbuilt master plan shows the deep urban potential of the commercial center as a type even when emancipating itself from its original indoor condition and uncovering completely the space, proposing again a real open-air situation, is able to generate a collective place for gathering, to still be looked at and studied nowadays. Gruen's proposal of ensuring the new artificial pedestrian surface by raising the level of the new ground from the original level of the city, had implied that a new underground was created below this new artificial surface. This underground space was imagined for goods deliveries and parking garages. According to Reyner Banham, Fort Worth *became the first of the business-districts-on-a-podium*, a huge brand-new megastructure representing the total artificiality of the ground level.⁸

In Gruen's 1973 book *Centers for the Urban Environment: Survival of the Cities* the 4th chapter is called *The essence of urbanity*, it being a concept that Henri Lefebvre uses and defines as a potentiality, as the ensemble of social and mental possibilities of the society which don't necessarily need to be constituted as something tangible.⁹ Gruen claims urbanity to be *the place of total "personal freedom*, being potentially the essence of urbanity the concept *urbia* directly linked with *the Core of the City [...] it's heart*.¹⁰ And the fundamental conditions

8 See Banham, Reiner, *Megastructure. Urban Futures of the recent Past*, Thames and Hudson, London 1976, p. 42.

9 See Delgado; Manuel, *Lo urbano, más allá de la ciudad*, Introduction to the Spanish edition of Henri Lefebvre. *The Right to the city* (1968) Capitan swing, Madrid 2018. pp 15-22.

10 Zuccaro Marchi, Leonardo, *Victor Gruen: the environmental heart*, The journal of Public Space 2 (2).

Figure 1. Victor Gruen (right) overlooking the model of a commercial center. / Figure 2 & 3. Northland Commercial Center. Victor Gruen. 1954. Detroit. / Figure 4 & 5. Southdale Regional Commercial Center. Victor Gruen. 1956. Edina, Minnesota. / Figure 6, 7 & 8. Visualizations. Fort Worth Master Plan. Victor Gruen. 1956. Fort Worth, Texas.

which Gruen was aiming to work towards were first of all the notion of *compactness*, secondly the *maximum integration of human functions* and finally the *maximum separation between mechanical-service functions and humans*, the latter resulting from the fear of the time about mechanical tools *which (would) take command* over life, according to Giedion. Some of these principles being still of actuality since they already *aim(ed) for a centralization and compactness of the urban structure*.¹¹ Gruen always worked adding up on the legacy of CIAM 8 congress. Summing up Gruen's work together with *CIAM 8. The Heart of the City* output's, where the concept Heart used to refer to the Core of the city is used as a humanist-environmental symbol and a functionalist-mechanical metaphor, Fort Worth's legacy glimpses on a new way of integrating different urban services and functions at the center of the city based on the construction of urban slab as a new public ground offered for the collectivity.¹² Furthermore, Fort Worth's is a great example of a three-dimensional design, which means that not only happens on the horizontal component of space, but that it has a certain thickness to consider in its verticality with the new underground generated and gives as a result a *multifunctional Heart*.¹³

Many would be the reflections and notes of several of the participants in the 1952 congress that would sum up or just reinforce Gruen's work. Especially Sert's specifications on the fact that *one of the first requisites of all of these – as he called them – centers of community life (would be) the separation of pedestrians and automobiles*. To what he added that *the motorized means of transportation must reach different points of the perimeter of these areas and find the necessary parking facilities, [...] trees, plants, water, sun and shade and all the natural elements friendly to man should be found in such centers* and that *pedestrians should be protected from extreme heat and cold* as well imagining the design of covered streets, porticos, etc.¹⁴

The commercial center appears at this point of the research as a result issued from the last big tentative of deeply reinterpreting the political space of the city per se, the voided centers of the historic cities, the clearly delimited squares being collective places descending directly from the Ancient Greek Agora. Commercial Centers have tried to synthesize artificial realities in order to recreate such collective places inspired on the voided central spaces of the historical city. Even if the conflicts issued from this private-public - often fully private - *architectonic-urbanistic* places remain unsolved, such as the common management of the space, the closing hours, the maintenance of the collective spaces or the degree of publicity of the ground, etc, the commercial center is retained in this

2017.

¹¹ Ibid.

¹² According to Lorenzo Marchi. Ibid.

¹³ Ibid.

¹⁴ Sert, Josep Lluís. *Centres of community life* in Tyrwhitt, Jaqueline (ed.) *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès International d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

research, as it was by J.L. Sert, as an *experience on the right direction that aimed to generate a new kind of ground with communal purposes*. Such consumerism machines, that have been serving to the capitalist system from the nineteenth fifties, are identified in this research as a potential turning point in the history of public space and the design of the surfaces on which collective life takes place. In the case of Fort Worth for example, a raised urban slab constitutes the new ground for the public. In terms of design, the fact of lifting the natural level of the city in order to offer a new artificial ground for the collectivity, it is a chosen strategy that appears amongst other possible ones, having as a background a big list of diverse factors regarding for example the implementations of technology back at that time, the new construction techniques, diverse legal policies, traffic management, etc. But as well a strong aim for constructing a place for the society to gather again, to end with the isolationism and bring a contemporary frame for collective activities.

In a contemporary scenario where the mass consumption of products has been almost overshadowed by the increasing consumption of services and experiences, recreation and diversion appear as key aspects on which to take account. Leisure has been lately understood as an ensemble of extra services commercial centers could sell. Democratizing and making leisure accessible to the big mass of the collectivity, as well as politically claiming a universal right to have public spaces into which to divert oneself, understanding leisure as an ensemble of activities that should not necessarily cost anything to the user, is the way in which this thesis acknowledges the typology of the commercial center as being the turning point in such a matter. Even if they have been serving only private interest typical of capitalism, a reversal of the realm to which all benefits are addressed is believed possible and is encouraged here. Through focusing on its design, as it was the case when Gruen and other architects created the surfaces that welcome the collectivity in commercial centers, several are the possibilities to offer new public grounds to the collectivity, based on the important notion of the enclosing or better said, the delimitation of a place through which it can be acknowledge as such, generating a specific border.

In 1982, Spanish first urban commercial center, called *Nuevo Centro* - New Center - opened its doors in the outskirts of the city of Valencia.¹⁵ Strategically located in the northern-west area of the city, the site was tangential with major arterial roads becoming easily accessible by car in a city experimenting still a demographic expansion that has multiplied by four its population along the 20th century, up to the current 790'000 citizens, and twice as much - 1'400'000 - if counting with all the metropolitan area. A connection with the future construction of the first metro line of the city got foreseen and effectuated in 1988. Adjacent to the river Turia, the commercial center benefited from the transformation of the river into a linear public garden partly designed by Ricardo Bofill during the late 80s and that

¹⁵ García-Ordoñez, Fernando M., *Nuevo centro comercial en Campanar/ Valencia/ España*, Informes de la Construcción, Vol. 38 n.º 388, (1987) pp. 49-54.

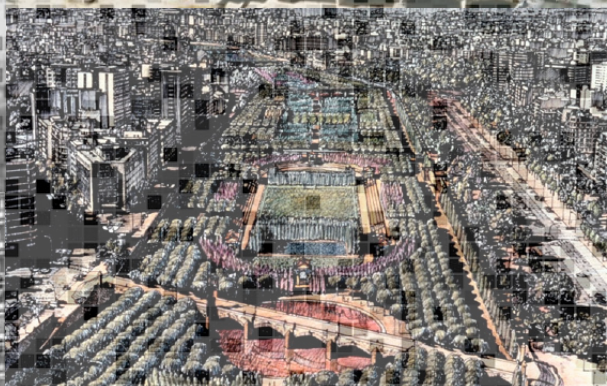
vertebrates the city running from west to east after the decision of cutting off the natural watercourse and build a new river bed outside the city. What originally seemed to be a suburban commercial center, aimed to propose a new centrality in a not yet that polycentric city. Nowadays, the fully-integrated-in-the-city commercial private facility is reachable by car, bus and metro but as well through the highly developed along the city by the authorities bike lane system.

The architect responsible for this project was Fernando M. García-Ordoñez. He is one of the major contributors to the architectural heritage of the second half of the 20th century in Valencia, having collaborated as well in the first drafting of the project to reorder the city and its metropolitan area after the southern solution of the Turia river diversion in 1958 in which it was already concluded the suitability of the area that afterwards would occupy *Nuevo Centro* for a commercial facility. Having a metropolitan understanding of the city, he got to learn about the typology of the commercial center in his first trip to the USA and about the figure of Victor Gruen through his article in the *Architectural Record* issue of March 1960.¹⁶ In Gruen's article a defense of buying and selling as actions *as old as mankind* is brought up to date especially in terms of dealing with a massive presence of cars in the city. In the article, many are the projects, schemes and sections shown by Gruen that feature multi-level and three-dimensional urban devices that, because of the condensation of functions, recur to a vertical organization of extensive horizontal layers, some of which relate to infrastructural functions and are in the natural underground, or even in a newly generated underground because of artificially raising the main level of the city. Such infrastructural basements are related with the technology services and devices and their insertion in the city. *Nuevo Centro* is an example of an almost two hundred thousand squared-meters new urban device constituted by a main reinforced concrete slab that hosts a new ground connecting the complex with the natural level of the city through an open plaza, and counting with several additional slabs more, above and below it, with an available roof top elevated of seven meters from the natural level of the city and sustained by an ensemble of reinforced concrete columns displayed along an isotropic grid proposing a constant condition for all the activities and services of the complex.

The re-discovering of *Nuevo Centro* will propose to render accessible a big unused existing properly delimited place into a new Urban Slab for the collectivity.

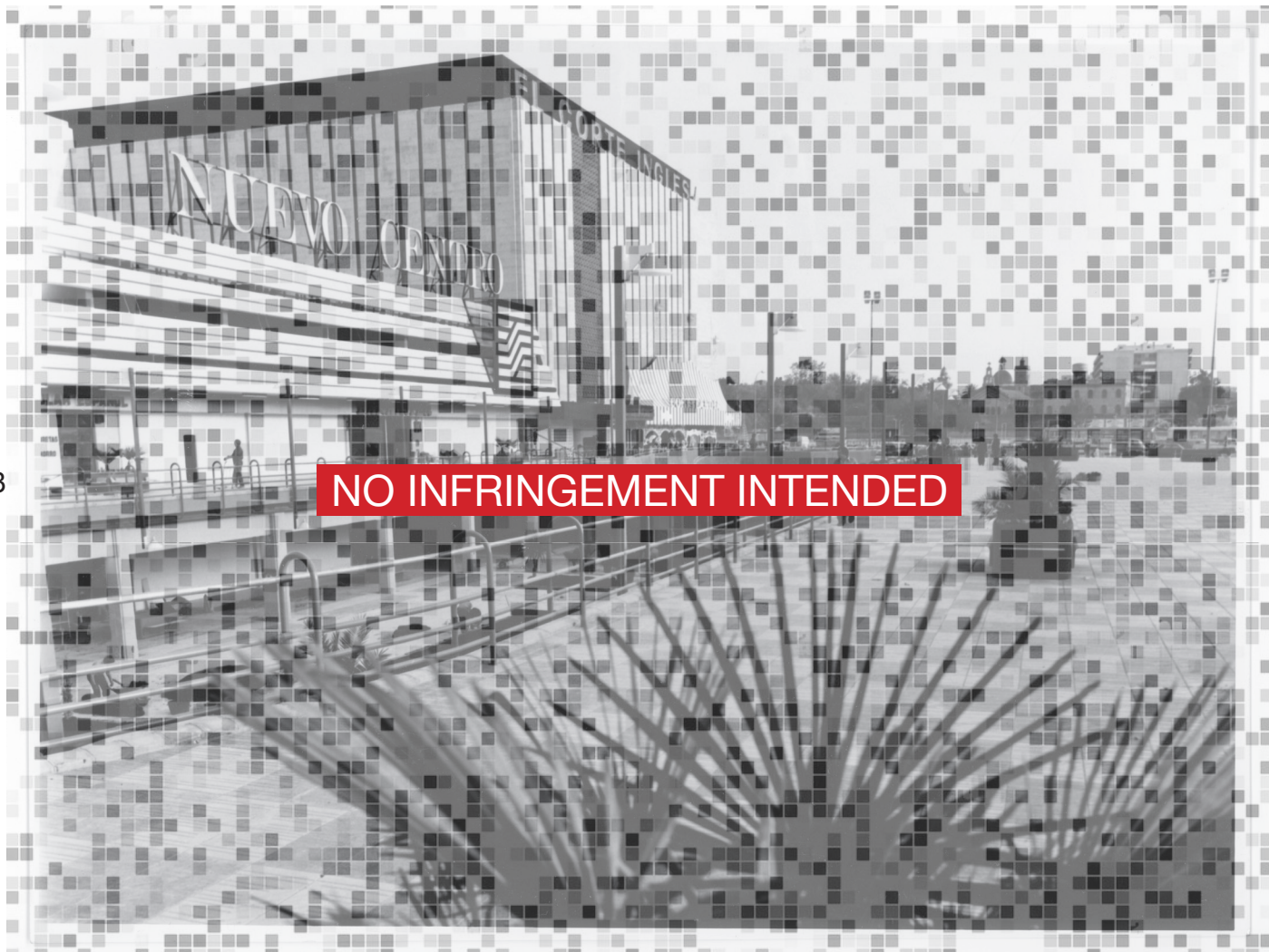
16 Selva-Royo, Juan Ramón, *Memorias de un arquitecto: Fernando M. García-Ordoñez (1922-2015)*, Servicio de Publicaciones, Universidad de Navarra 2016.

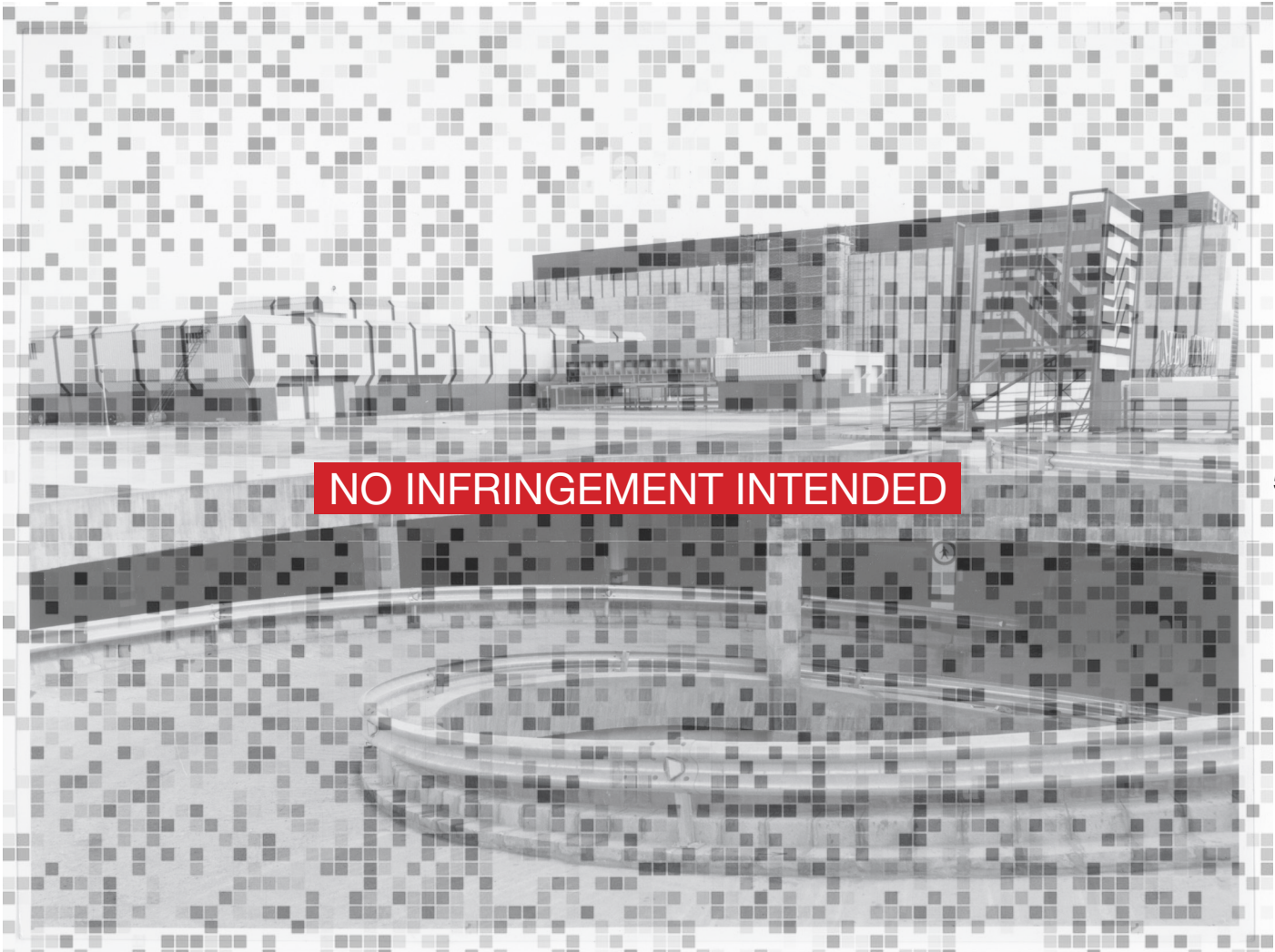
Figure 9. Aerial picture of the construction. Nuevo Centro. Fernando M. Garcia Ordonez. Valencia. Ca 1980. / Figures 2, 4, 5 & 6. Construction pictures, drawing, model, and completion of the Turia Gardens. Ricardo Bofill. Ca 1980-1990. / Figure 3. Aerial picture. Nuevo Centro with public square. Fernando M. Garcia Ordonez. Valencia. Ca 1990. / Figures 7-16. Original pictures. Nuevo Centro. Fernando M. Garcia-Ordonez. Valencia. 1982. Valencian Construction Archive.



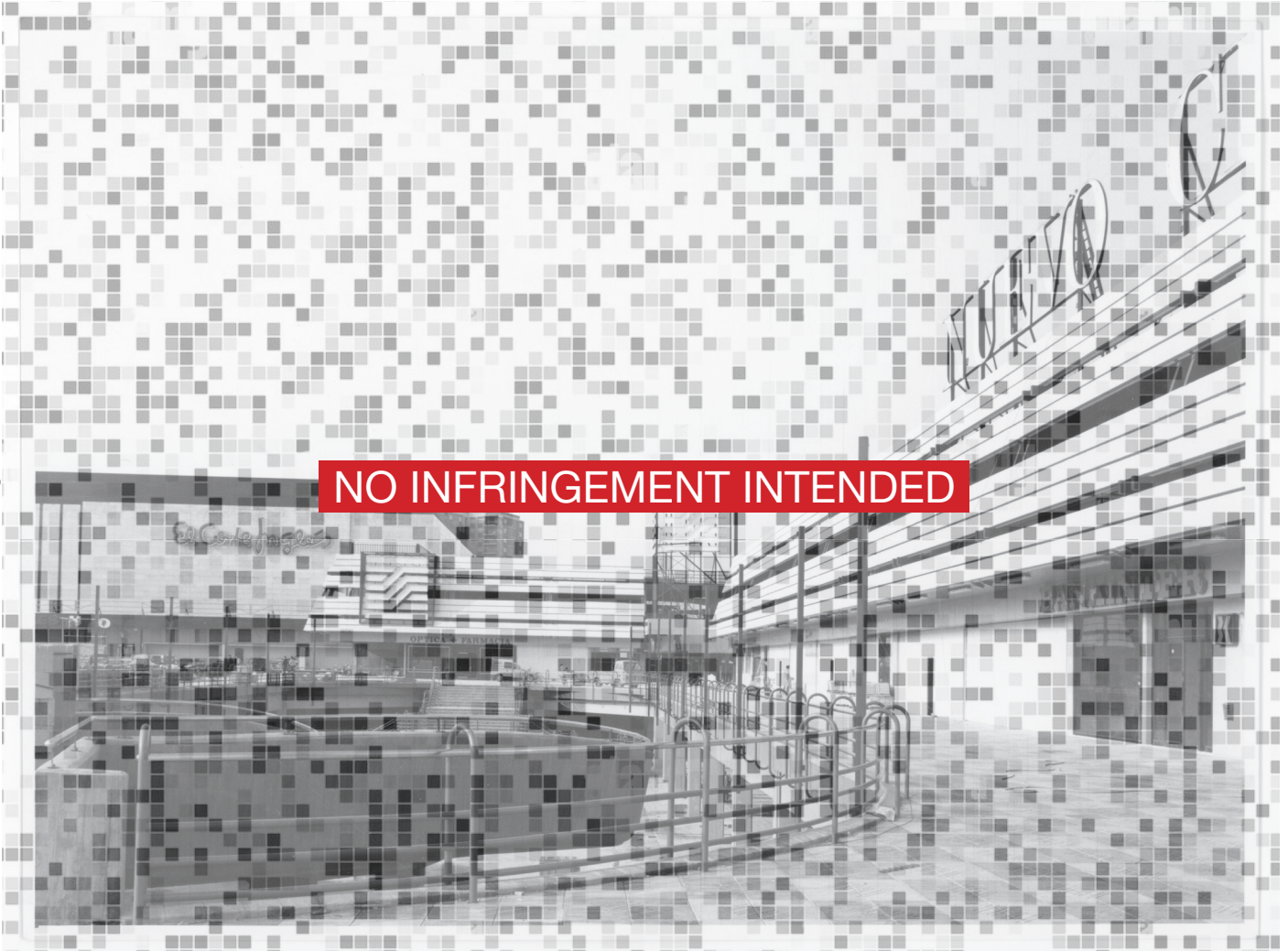
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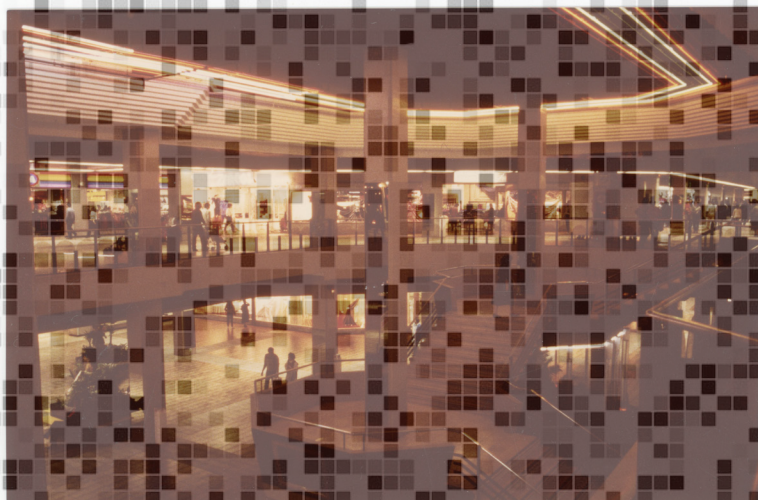


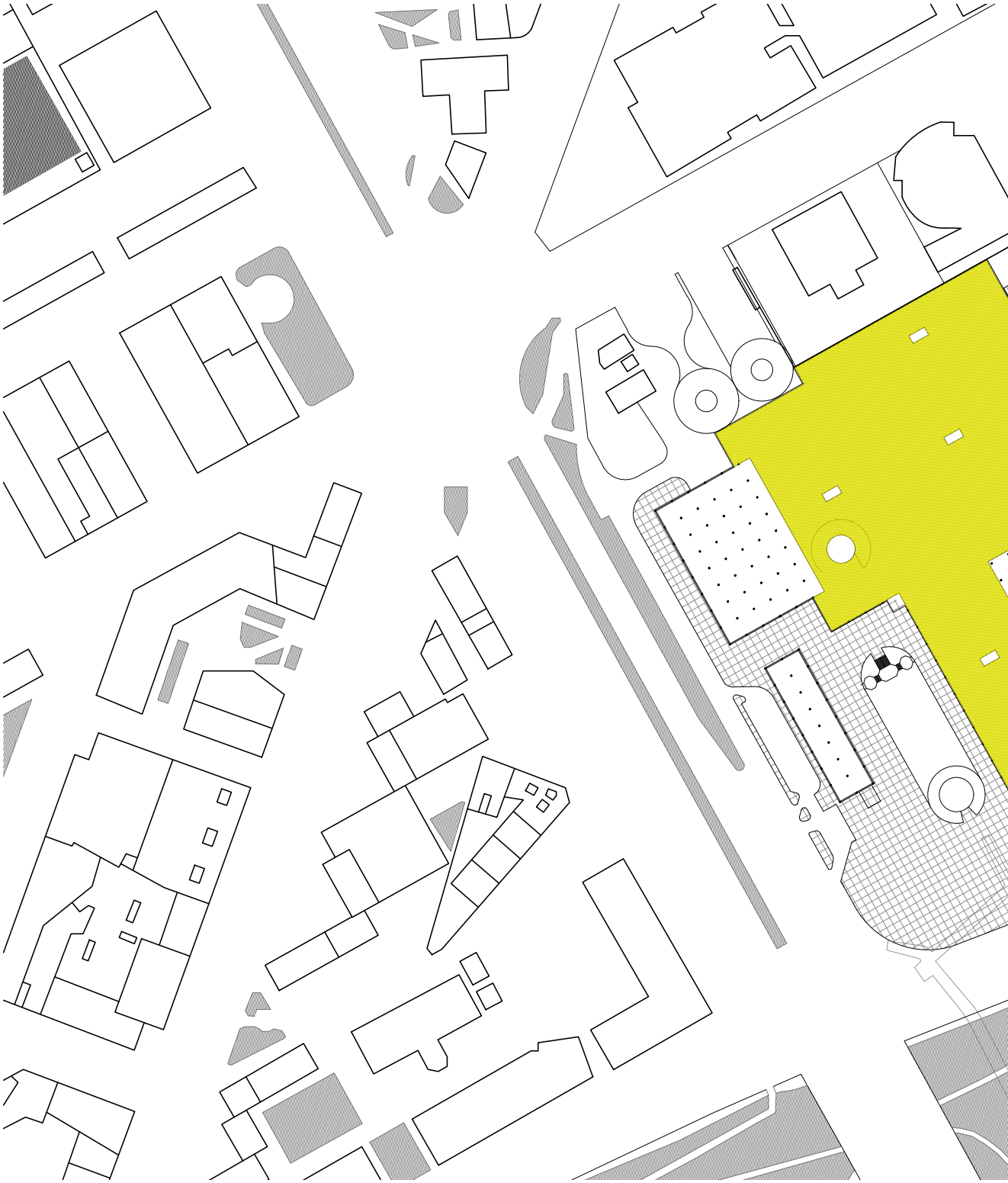
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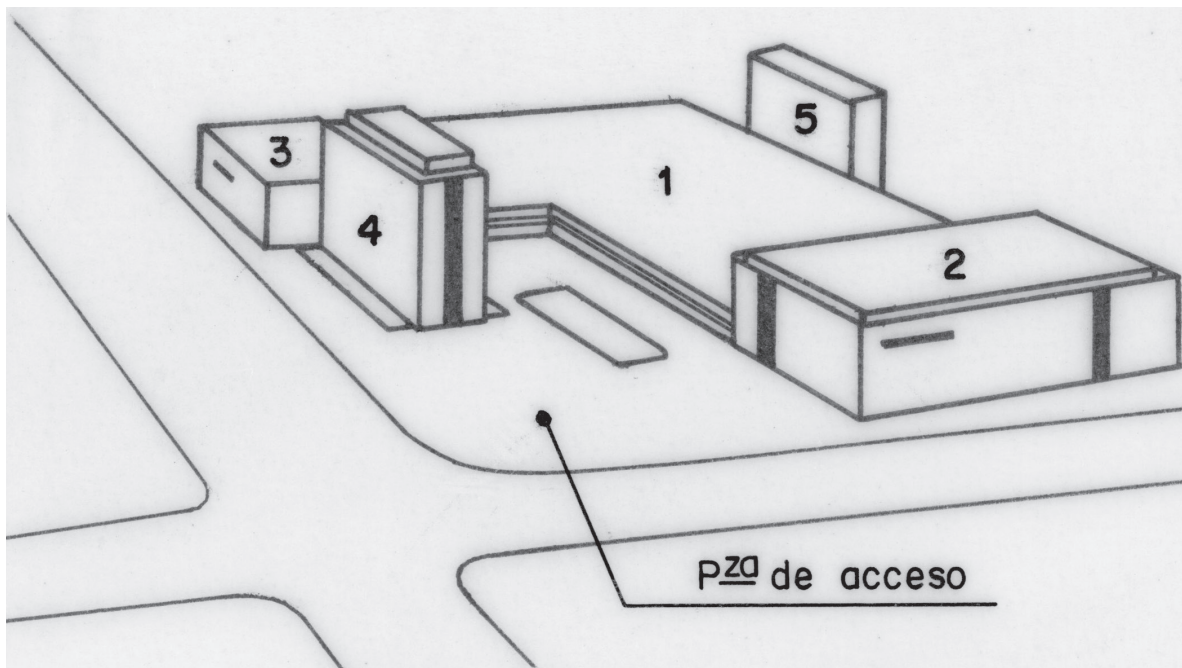
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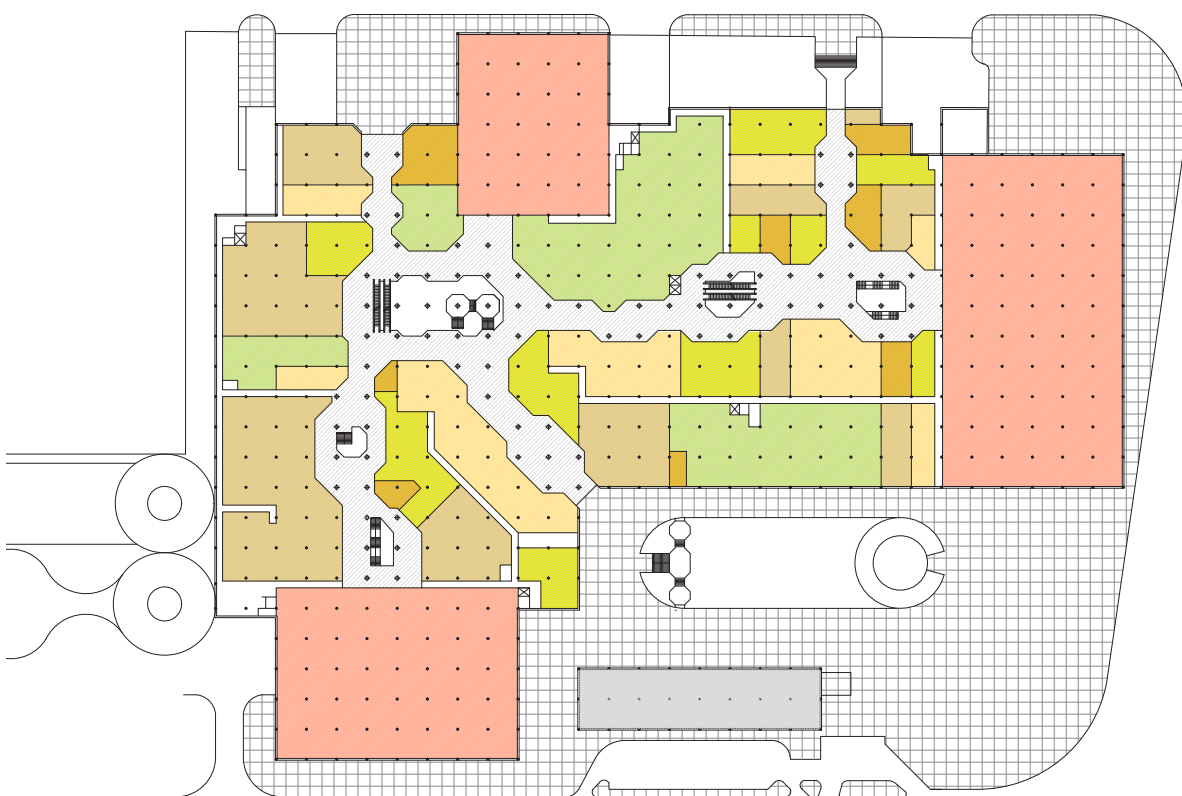




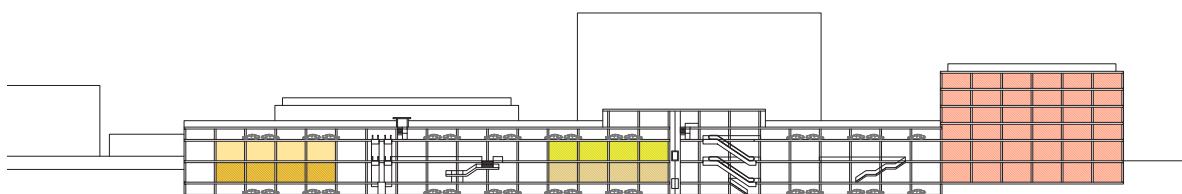
1:3000 site plan



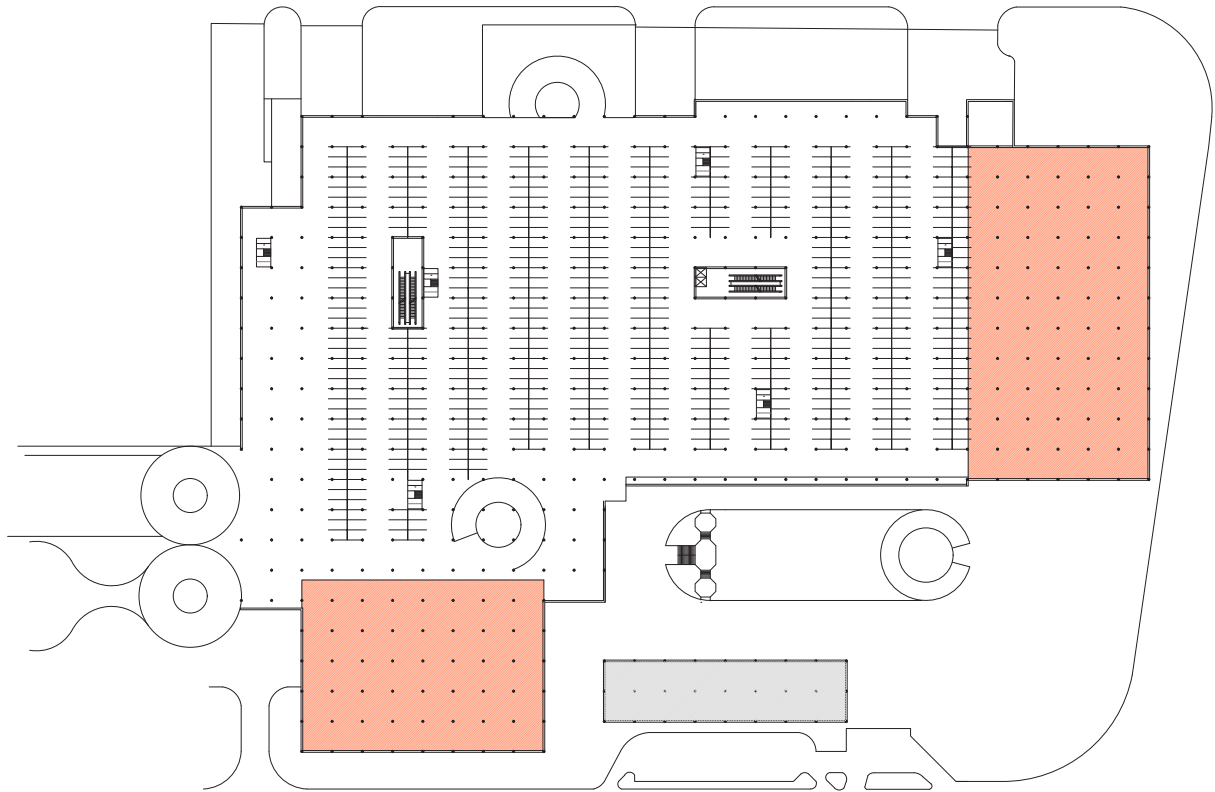
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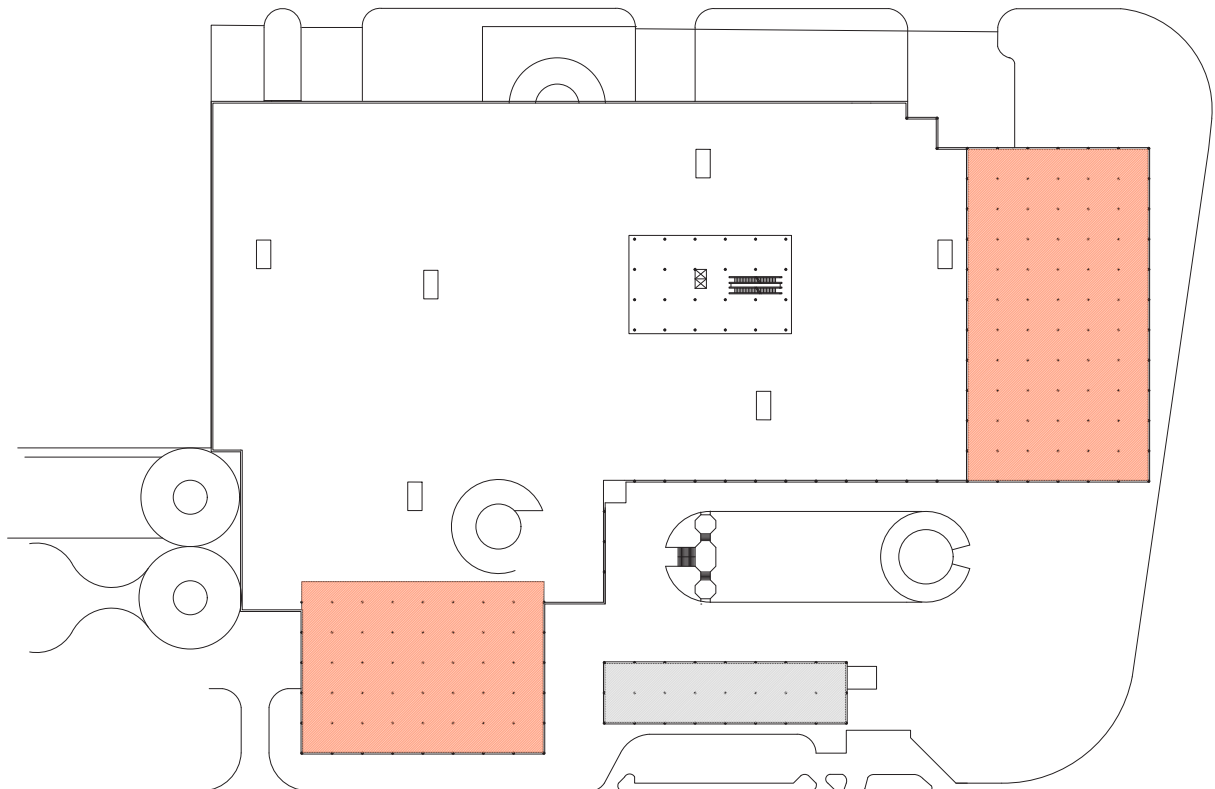
1:2000 Original Ground floor (+ 0m)



1:2000 Section (+ 0m)



1:2000 First floor (+ 5m)



1:2000 Secon floor (roof top) (+ 8m)

2

URBAN SLABS IN THE CITY A Collection of Design Strategies

2.1 **SHAPING - LANDSCAPE**

The fact of designing urban grounds reserved for public uses is an asset for managing the political life of cities. It is in this conscious and man-made decision of enclosing a public space, of proposing a border to it that, from the Ancient Greek Agora, the design of it has been proven crucial for propitiating its functions. It is as well in the design of radical geometrical shapes and their enclosures that the king of France tried, as the Roman emperors did, to promote an urban class that would support their regimes.

Such ways to enclose the public voided spaces using a perimetral colonnade, as well as highly regular and symmetrical facades, is something that has been used in the past but, what if these public spaces could be defined by their ground design only?

To shape grounds in order to define and delimit them as if they were pieces of landscape is the first design strategy identified in this thesis. But how can grounds be shaped? Along several study cases, options will be developed. The goal is to show how the ground can be modeled, bringing to it the qualities of a landscape, playing with the fact that grounds can become an actual element, solidifying in the shape of slabs and that of course can stop being completely flat and designed and modeled as wanted.

Not far from Barcelona, in the city of Badalona, a skate park opened its doors in the summer of 2017. The new *Skate Agora Badalona* is a four thousand square meters skate park designed and constructed in collaboration with the specified company *California Skateparks* based in Upland, California, USA. *Skate Agora BDN* is a new open-access public sports facility located close to the beach, reminding of the origins of skateboarding that was born at the end of the Fifties along the Californian coast proposing an alternative for surfers in days without any waves at the ocean. Empty swimming pools, that were often constructed with rounded corners in order to fit less cubic meters of liquid and save water, provided the radical effect of waves. It is even said that skateboarding has its origin in a drought in Los Angeles that forced the emptying of the pools.¹

In the Eighties skateparks started to appear all over the world, designed as a variation of American swimming pools. In Spain for example, the first skatepark was built as well close to Barcelona, in 1979, at the nearby village Areny de Munt. These built topographies made for exercising the specific activity of skateboarding (having copied the ready-made situation of empty pools that people happened to use in a new informal and parallel way), has changed or added one extra way in which public space can be experienced in the city nowadays. At Skate Agora BDN webpage skateboarding is featured as *not just a sport (but) a way of life. It is education, integration, creativity and self-improvement. It is a symbol*

¹ Arribas, Cristina, *Paisajes urbanos sobre ruedas. Los skateparks, un nuevo espacio dentro de las ciudades*, In *El informatiu. Construcció, arquitectura, urbanisme*, n°351 (March 2017)

*of culture, trends and social development. It is progression and future.*² Such an activity like skateboarding is then directly related with the design of the ground in which it takes place. Skateparks are designed grounds with the specific function of sporting with a skate, and to get used and to get collectively appropriated as a community of a specific side of the city, properly and strongly delimited, whose borders are clear but porous, and generally are places accessible to the broad public. Skateparks could be seen as topographies that empower creativeness, a freedom of action, and that contribute to the urban culture and the social scene of the moment even nowadays, after 40 years of its globalization.

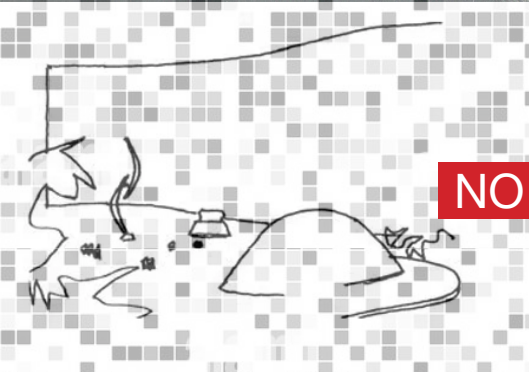
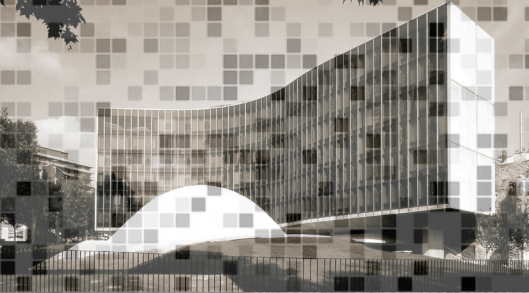
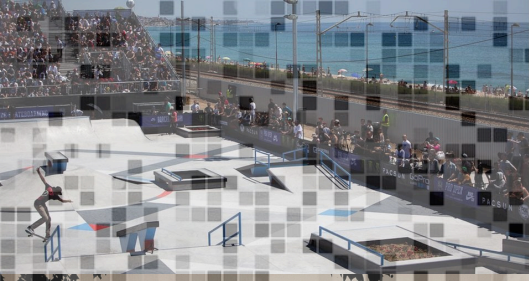
Contemporarily to the discovery of the informal hidden potentials of empty pools along the Californian coast, an irregular artificial topography got imagined by Oscar Niemeyer when he was commissioned in 1967 to build the Communist French Party Headquarters in Paris. Strongly contrasting with its urban context and surrounding buildings, late heritors of a *Hausmannian* tradition, a hilly plaza hides below its surface two underground levels that host a parking garage and other services.³ On top of it, the newly created landscape sustains a white dome corresponding to the auditorium for Central Committee meetings and a reflective six-floor undulated tower that seems to float over the hilly topography that constitutes the ground floor. The goal was to as well offer a new open space for the neighborhood with the intention to let the public space of the city expand. Because the ground floor of the new building is dug one and a half meters from the level of the city, the topography proposes an actual experience of spatial continuity between the street and the level where the auditorium, *the great working-class hall*, covered by a big white dome, is located.⁴ As a very early example of playing with the shape of the ground, especially thanks to the new opportunities that reinforced concrete was bringing, this building, that got completely inaugurated in 1981, proposed to delimit the space of the new headquarters complex in a very clever way, allowing for the citizens to enter the space as it was a prolongation of the walkway because of the continuity it proposed spatially, passing from a walkway paved with concrete to another concrete flooring, but letting them know at the same time that they were not anymore at the street, because of the undulation of the ground.

² See <https://www.skateagora.com/about-us/>

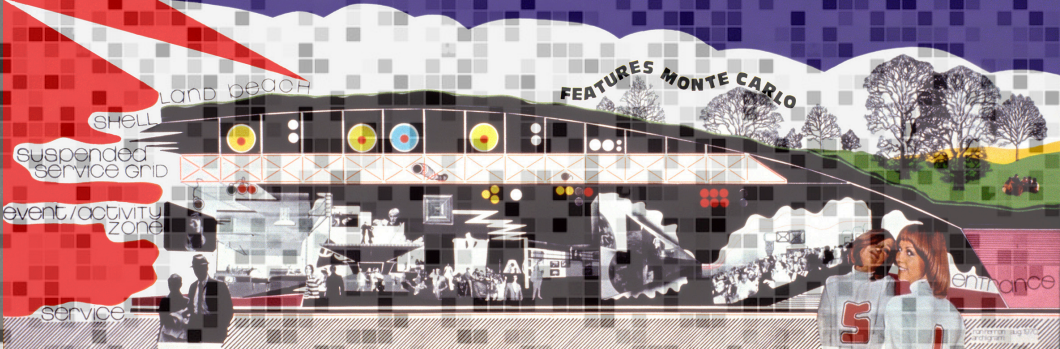
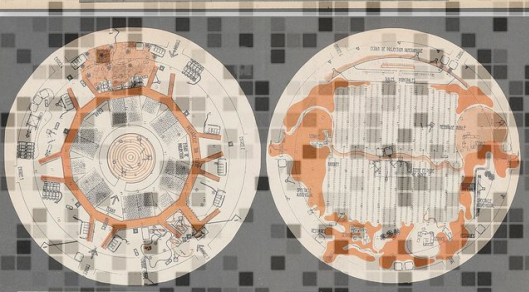
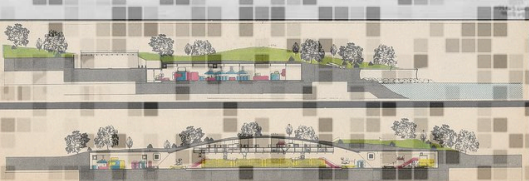
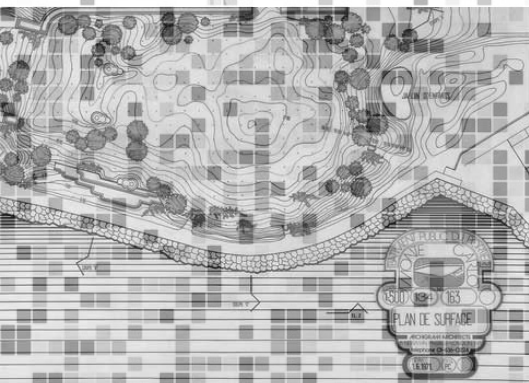
³ Its slightly sloping roof helps to introduce, through the surrounding slope, a new topography for the square. See Anon, *Sede del Partido Comunista Francés*, Paris in Oscar Niemeyer. Cien años. AV Monografías. N° 125. (2007). pp. 92-95.

⁴ Ibid.

Figure 1. Skate Agora Badalona. 2017. Badalona. Spain. / Figure 2, 3, 4 & 9. French Communist Party Headquarters. Oscar Niemeyer. 1967-1981. Paris. / Figure 7. Skatepark. 1979. Arenys de Munt. Spain. / Figure 8. Construction of a skate park. Californian Skateparks. California. / Figure 5, 6 & 10. Shell Land Beach. Competition Proposal. Archigram. 1969. Montecarlo.



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The notion of continuity seems a key concept on the matter of shaping the ground. Even if grounds are at the same time specifically delimited, they generate like this new urban landscapes that acquire such features from the natural milieu. This is what happens at Archigram's 1969 competition entry for the Entertainment Center in Monte Carlo, a proposal for a cultural and leisure facility that they named after the title of *Shell Land Beach*.⁵ Shell because once again, it was about the creation of an undulated surface; an artificial new ground that this time was aimed to be occupied and used by the collectivity. Archigram already evoked the notion of a *vital crust* in 1963 that here becomes a projected reality, proposing a new artificial surface which questions not only the traditional urban fabric but as well the hegemonic distinction between countryside and city.⁶ The new surface, projected to be made of reinforced concrete too, takes the consistency of a slab which is actually covered by a layer of grass here, proposing a sort of park which is reproducing somewhat the natural shapes of dunes on which it is possible to sit or lay down like at the beach, even if not covered with sand, but grass. This new urban slab, that is at the same time working as the roof enclosing an underground space with a stage to host concerts and any other kind of festive or leisure activity, proposes a new way of life: flexible and free.⁷ From the outside, the underground space is not visible. The new undulated urban slab would have made part of an idea of city that the Archigram imagined in the form of a new nature proposing a total continuity with the surrounding spaces and surfaces, to the point of speculating with a *form of occupation of the territory [...] immersed into nature even if staying technological, and extended to the whole of the earth's surface*.⁸

A condition of continuity through a new sort of artificial nature and the exploration of the *relationship between architecture and nature*, as Paulo Mendes da Rocha himself states, is what characterizes as well the design of his pavilion for the 1970 Expo in Osaka.⁹ The pavilion proposes an undulating new surface with a strong allegorical character, inspired by natural forms even if not coated by

5 This is the title that the competition proposal receives, on one side making use of the word shell, referring to the reinforced concrete dome that would hold a beach that even if slightly contradictory would be covered with grass and not sand. See Lampariello, Beatrice, *Full floor » pour la vie métropolitaine du futur*, in Gargiani, Roberto (ed.), *L'architrave, le plancher, la plateforme. Nouvelle histoire de la construction*, Presses Polytechniques et Universitaires Romandes, Lausanne 2012. pp. 851.

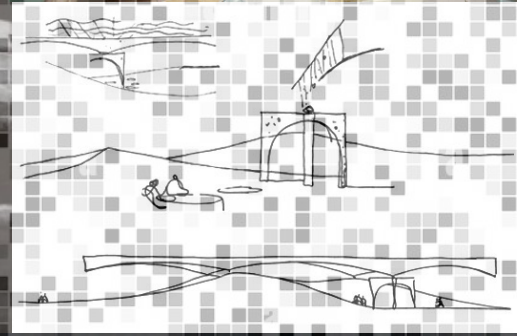
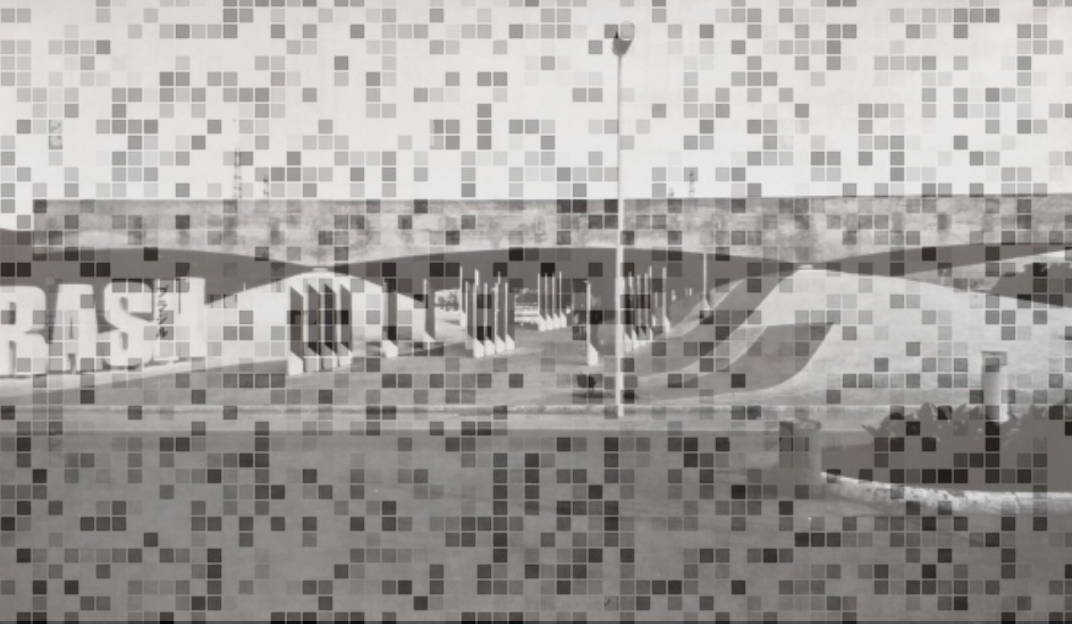
6 Ibid.

7 Moreover, and supplementary to what this new ground represents as a proposal of a new frame for public gathering, in spatial continuity with the surrounding spaces of the city, the surface, or better said, the artificial ground, is additionally equipped with a series of technological points, distributed along an orthogonal grid, that give access to power, water, air, artificial lighting or even information, and that are telescopically actuated displays that hide in the thickness of the shell when not used. See Ibid.

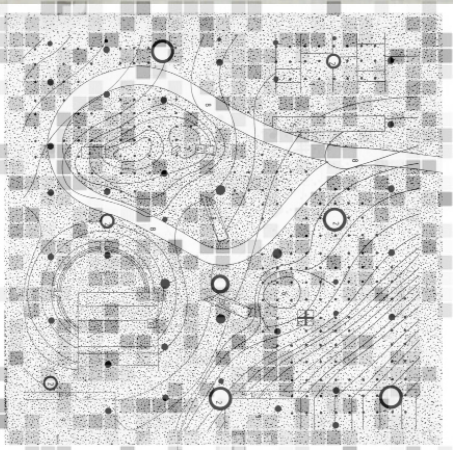
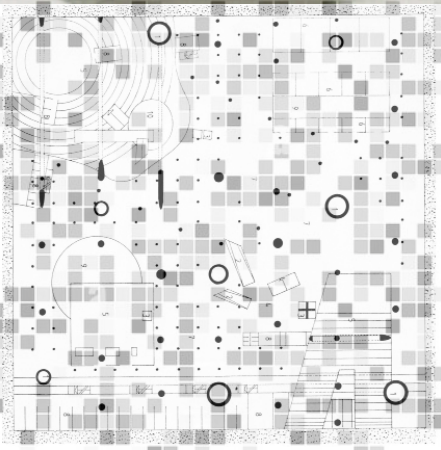
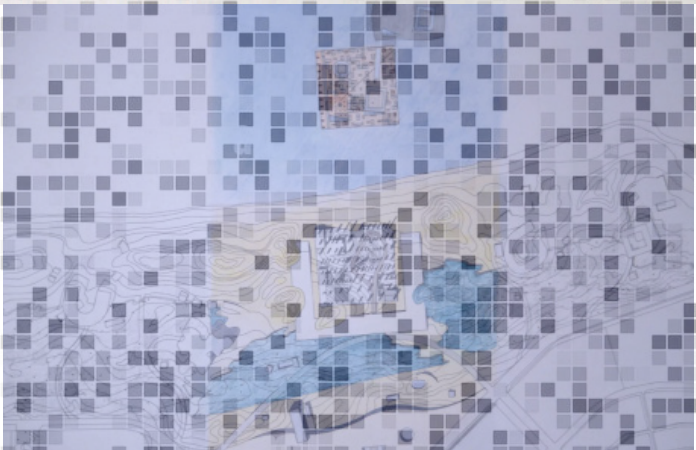
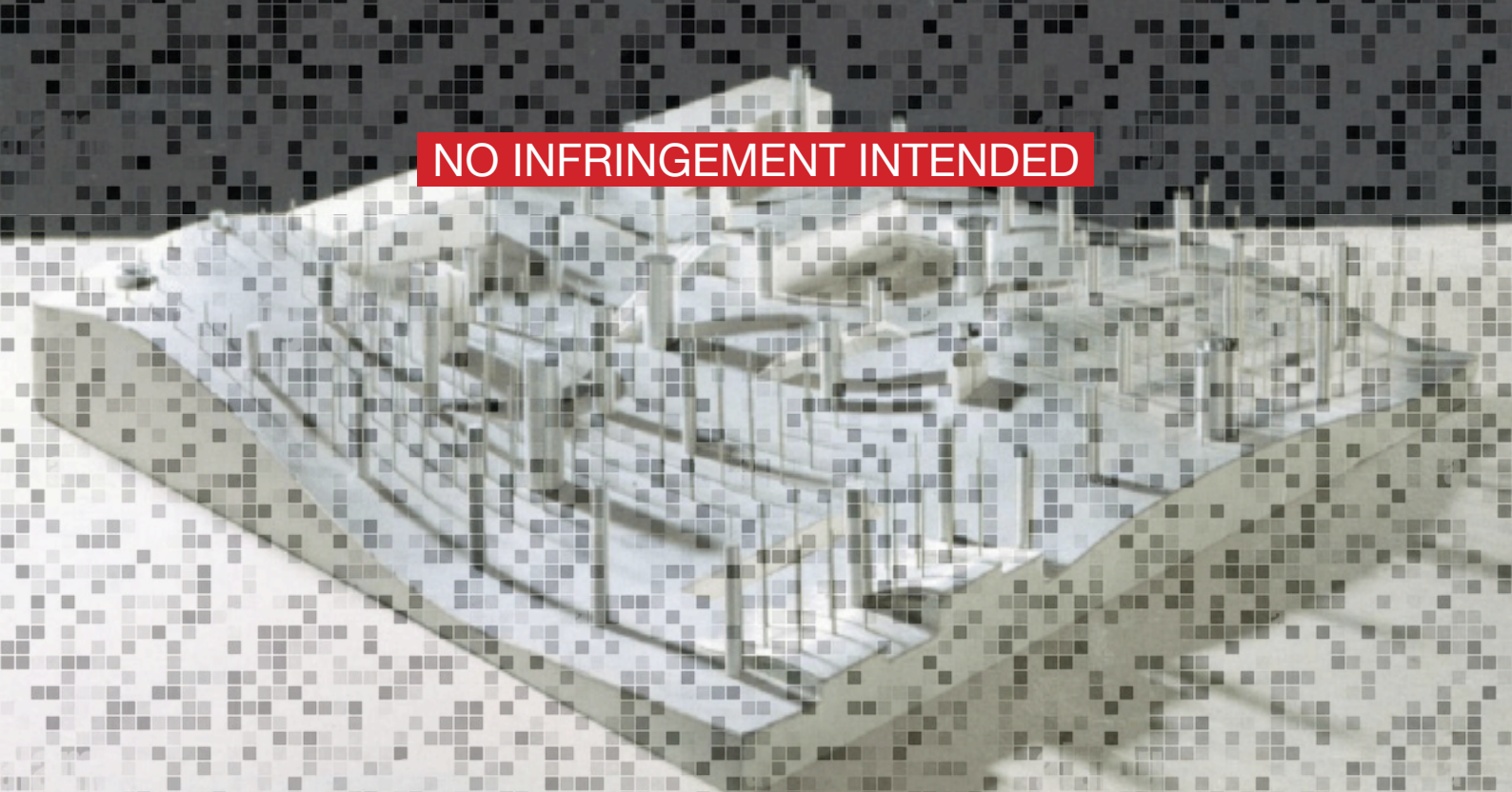
8 Ibid.

9 Anon, *Pabellón de Brasil en la Expo '70. 1969-1970, Osaka (Japón)*, in Paulo Mendes da Rocha AV Monografías. N°161 (2013). pp. 44-49.

Figure 11, 12,15 & 16. Brazilian Pavilion at 1970s Expo in Osaka. Paulo Mendes da Rocha. 1970. Osaka. / Figure 13, 14 & 17. Agadir Convention Center. OMA. 1992. Agadir. Morocco.



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grass this time, and that proposes again a different shape of public open space. Additionally, the pavilion is covered by a very rational and architectural gridded roof whose main supporting point is one of the artificially constructed hills that are constituting the pavilion. This coverage is essential to indicate a centrality on this surface that is offering itself to the collectivity. What becomes particularly noticeable in this example is, more in particular, the relationship of the pavilion to its surroundings. Here too, the continuity between the existing ground of the expo site and the newly constructed artificial ground of the pavilion, relate in such an organic way, provoking a full spatial continuity between both surfaces, merging in a continuous one. It is only by means of the radical orthogonal grid that is covering the space, and bringing some shadow to the site, that one understands strongly to be in a delimited space this time. But the artificial ground aims to build an extensive formal continuity with the existing landscape.

Advancing on the idea of a man-designed public ground whose heritage is directly the ancient Greek Agora but, because of a design strategy, it has derived into an undulating modeled surface, it is proposed to have a closer look to OMA's Agadir Convention Center 1990 competition entry. The project was proposing a building on the dunes of Agadir's beach somehow *split* in two parts: a *sockle* and a roof.¹⁰ OMA states about their project that *it was (their) challenge in this competition to find an original architectural expression for this enormous program which (would be) compatible with the beauty of the site.*¹¹ The curvilinear landscape of the dunes continues as the *hills* and *valleys* of the *sockle* accommodate the major components of the program: auditorium, etc.¹² On its surface, a public space is hosted, a major *urban room*, an actually covered-by-a-roof plaza facing the sea and sitting on the beach: an open space imagined for the collectivity. Such space becomes physically enclosed and delimited with some abstract glass facades at the edges of the squared *sockle*, becoming this sort of public delimited place being a covered public room. However, it is still enriching to see that there are ways to imagine playful variations when designing public grounds hosting public places, even if being indoor, and that not all public surfaces, especially when artificially built should be mandatorily flat. On one side, such design strategy allows to generate slightly different areas along the same surface and still keep a continuity between them, rendering more accessible such public place from its surroundings too. OMA explains even how they imagine to build this artificial ground, casting the concrete shells *upon the dunes, using the sand as a natural formwork*. The roof of the Plaza, hosting hotel rooms in its thickness, is supported by an irregular forest of columns. The radical shape of the *sockle* and roof with straight geometric boundaries that delimiting the space, are a clear cut out that define the volume in all of its four sides, actually depriving it from a physical

¹⁰ The word *sockle* is used by OMA in order to define the base of the building. « OMA. Agadir convention center.» Site visited 08.02.2022. <https://www.oma.com/projects/agadir-convention-centre>

¹¹ Ibid.

¹² Ibid.

continuity of the space around three of its four sides, reminding only a spatial continuity visually through the glass facades. Nevertheless, it is possible to enjoy the beauty of the site from such radically cut edges, that isolate the object at the same time in the middle of the dunes. *The sand-filled moat offers the complex a relative degree of autonomy and privacy.*¹³

SANAA's Rolex Learning Center in Lausanne's Federal Institute of Technology, in Switzerland, could be seen as a built incarnation of the concrete *shells* fantasy, already imagined in the late Sixties by the Archigram and brought back as well in OMA's Agadir proposal. In the case of Lausanne's Rolex Learning Center, such concrete shells become a reality, trying to reproduce a natural landscape in continuity with the existing surroundings. The project basically consist on an artificial ground embodied by a reduced and thin undulated concrete shell (product of further technological advancements on reinforced concrete constructions) pierced by a dozen of patios bringing light to the spaces. At some points it touches the level of the natural ground on which it is placed, at some others it takes separation from it, clearly becoming an elevated surface from the natural ground floor. The building, that hosts a multitude of programs for students like the main library, restaurants, meeting rooms or an auditorium, is the biggest scene of the student life in the campus. By reducing the columns to the thinnest structural expression possible, it gives the impression that the roof that covers the space is supported almost magically, giving absolutely the power to the ground of defining the space. *One of the most singular aspects of this building is the absence of physical limits*, is stated in the description of the project agreeing with the notion of continuity seen in the previous examples.¹⁴ *It is an open space defined by its artificial geography. The separation between all different functions is made by the manipulations of the horizontal plan, trying not to break the spatial continuity neither the fluid relations established with its landscape.*¹⁵ And this time too, the edges of this new ground are once again radically delimiting the space. A rectangular shape cuts the extension of the curved concrete shell establishing a difference with the existing naturally flat surrounding. Once again it is possible to find a quite autonomous building consisting of an artificially made new public ground that hides parts of the library and a parking garage below it, and which can exist and dialogue with its surrounding as a political space on an undulating concrete slab clearly delimited, that comes to touch the existing ground in several occasion to propose accesses to this new public surface and that searches for a certain continuity even if establishing clear borders between the new artificial ground itself and its context.

¹³ Ibid.

¹⁴ Anon, *EPFL Rolex Learning Center, Lausanne, SANAA*, in *AV Monografias* n°171-172, (2015) P38-49.

¹⁵ Ibid.

An impressive, and almost utopic example that pushes the notion of ground continuity really to the limit is the *Cidade da Cultura* in Santiago de Compostela, in Spain, designed by Peter Eisenman. Getting rid of the need of a roof that's somehow could explicitly expose a sort of centrality, a specific delimitation that would make such place to exist like it has been the case in the previous examples in Osaka, Agadir or Lausanne, this new ground, shaped as well upon allegorical forms of a sort of man-made nature, acts actually both as a ground and as a roof covering the indoor parts of program like the auditorium, the library, etc. The project, situated at a hilltop that overlooks the medieval center of Santiago de Compostela, was the formal result of some conceptual processes that characterize the architecture of Eisenman, like parametrical architecture procedures.¹⁶ The architect states that *its design evolves from the superposition of three sets of information. First, the street plan of the medieval center of Santiago is overlaid on a topographic map of the hillside site [...] Second, a modern Cartesian grid is laid over these medieval routes. Third, through computer modeling software, the topography of the hillside is allowed to distort the two flat geometries, thus generating a topological surface that repositions old and new in a simultaneous matrix never before seen.*¹⁷ And continue stating that *through this mapping operation, the project emerges as a curving surface that is either figure nor ground but both a figured found and a figured figure that supersede the figure-ground urbanism of the old city.*¹⁸ This new ground that, as said, acts both as a ground and as a roof, contains a network of paths running in a more or less organic way between the different covered volumes or buildings, *lead(ing) to a multi-level plaza used for outdoor events,*¹⁹ proposing an artificial ground in continuity of the natural context, imagined for public activities amongst the ensemble of volumes constituting this newly built cultural pole. Amongst this collection of design examples and plastic strategies it becomes an impressive one, featuring a tectonic strength on the design of public grounds, proving how the shaping of the ground can constitute the backbone of an architectural project regarding the city and the public places foreseen for the collectivity. However, this is an example totally related to the *Star Architecture* phenomenon, with the excesses in the dimension, economy and size as well as the scope that this hauled.²⁰

¹⁶ In 2008 during the Venice bienale, Patrick Schumacher, architect at Zaha Hadid architecture, proclaims the happening of a new architectural style called Parametric. See Lucan, Jacques, *Précisions sur un état présent de l'architecture*, Presses polytechniques et universitaires romandes, Lausanne 2015.

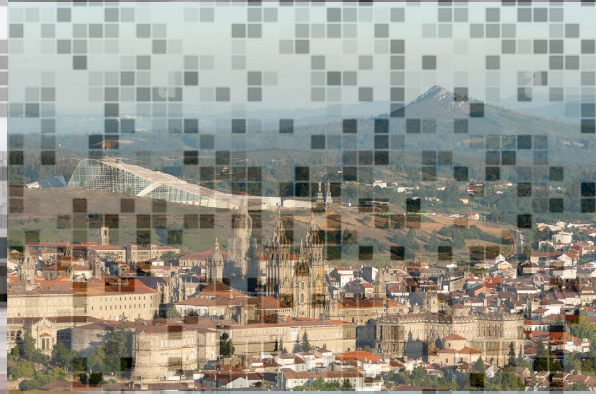
¹⁷ Extracted from a text description provided by the architects in *The City of Culture / Eisenman Architects*. Site visited 29.09.2022. <https://www.archdaily.com/141238/the-city-of-culture-eisenman-architects>

¹⁸ Eisenman, Peter David; Eisenman, Peter; Davidson, Cynthia C., *Code X : the City of Culture of Galicia*, Monacelli Press, New York 2005.

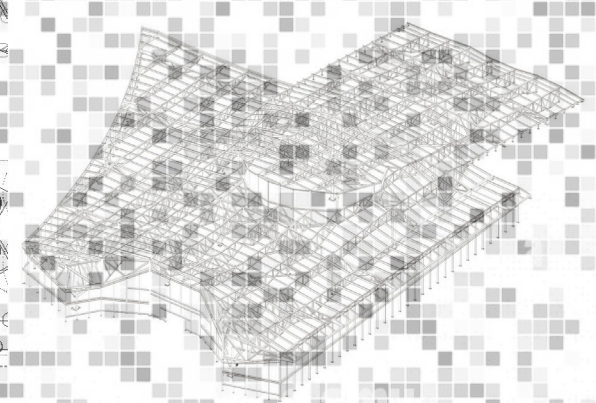
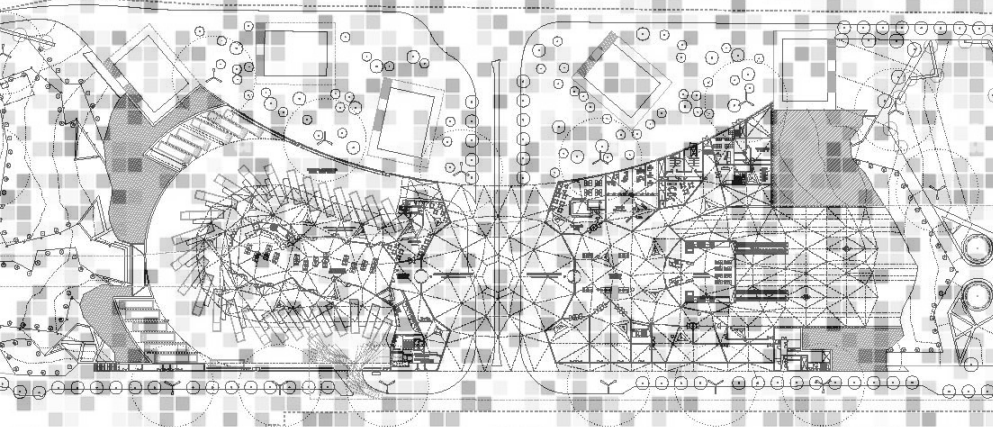
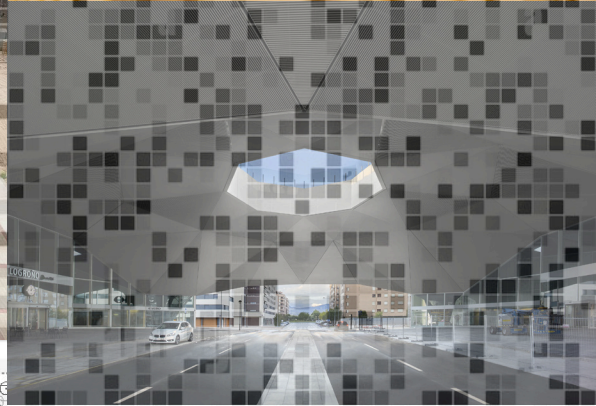
¹⁹ Description text at the architects website. Site visited 29.09.2022. <https://eisenmanarchitects.com/City-of-Culture-of-Galicia-2011>

²⁰ Alaily-Mattar, Nadia; Ponzini, Davide; Thierstein, Alain, *About Star Architecture : Reflecting on Cities in*

Figure 18, 22 & 23. EPFL Rolex Learning Center. SANAA. 2010. Lausanne. Switzerland. / Figure 19, 24 & 25. Cidade da Cultura. Peter Eisenmann. 2011. Santiago de Compostela. Spain. / Figure 20, 21, 26 & 27. Intermodal Station and Urban Park. Abalos + Sentkiewicz. 2014 / 2020. Logroño. Spain.



NO INFRINGEMENT INTENDED



As well infrastructural buildings dedicated to transportation nodes and logistics are featured here. The Maritime Passengers Terminal of Yokohama in Japan designed by Foreign Office Architects and finished in 2002, and the Intermodal Station and Urban Park in Logroño, Spain, partially opened in 2014 and finally finished in 2020 by Ábalos + Sentkiewicz are both terminal buildings, with very big programs of needs attached to the architectural expressions. In Japan, a seventy meters times four hundred and fifty meters undulating urban slab over the sea is proposing a *Urban park with its valleys, hills and ramps (inviting) visitors [...] to walk all the way to the far-end and from there go on a boat ride.*²¹ The project is even defined as an *enormous sandwich-shaped construction, a facadeless building, and an artificial domain of three continuous levels chained in such a way that the ground floor ascends at specific points and vice-versa, the upper floor smoothly transforms into ground floor.*²² A project whose *inventive architectural methodology and socially conscious thinking [...] explores new frontiers of architectural form and at the same time provokes a great discourse on the social responsibility of large-scale projects to enrich shared urban spaces.*²³ Even if built at the edge of the urban fabric, becoming a sort of appendix managing transportation flows entering and leaving the city, the project is seen here as Urban Slab that has been designed being conscious of the social and political potential of hosting the collectivity and any activities that would come with it. A new urban park, floating over the sea, like the former wooden peers of the area, truly redesigned for the public as a gathering place this time.

A decade later, in a terrestrial context this time, Abalos + Sentkiewicz imagined a half-dig in the ground combined train-and-coach station for Logroño, in northern Spain. The architects imagined for this project, and as consequence of the bury of the railway tracks, a big gesture that proposed a *totalizing topography*,²⁴ or green roof acting as an urban park: again a new artificial ground acting as the covering of both the train and bus station under one continuous surface hosting a public place designed for the collectivity to enjoy it. The project is actually, thanks to the burying of the train trucks, making *the most out of a vast urban space (and) can help recover the spatial, ecological and landscape value of those sections of the city that were disrupted by the train tracks.*²⁵ It can be defined as a *New Nature* that proposes a Urban Slab for the city that again proposes a continuity with the existing surrounding grounds, a hilly urban park that ascends to a height

Europe, Springer International Publishing, Cham 2020.

21 Klauser, Willem, *Maritime Terminal, Yokohama*. FOA/ Foreign Office Architects, in Great Details, AV Monografias n°96 (2002) pp. 110-123.

22 Ibid.

23 Langdon, David, *Architectural Classics: Yokohama International Passenger Terminal / Foreign Office Architects (FOA)*. Site visited 29.09.2022. <https://www.archdaily.cl/cl/628249/clasicos-de-arquitectura-terminal-internacional-de-pasajeros-de-yokohama-foreign-office-architects-foa>

24 The experience is defined as pioneering in the fields of "landform architecture" or "ecological urbanism" dealing with a broad range of aspects: infrastructure and urbanism, landscape and architecture, ecology and economy. Anon, *Intermodal Station, Logroño* in Ábalos + Sentkiewicz AV Monografias n° 169 (2014) pp. 90-97.

25 Ibid.

of around ten meters over flying the ground floor level of the city and proposing a privileged view of the city from the newly created ground.²⁶ Somehow a rooftop converted into a new public ground for the city capable of gathering people and hosting social activities from having a walk or sporting to meet with friends to do a picnic, dance or sunbath.

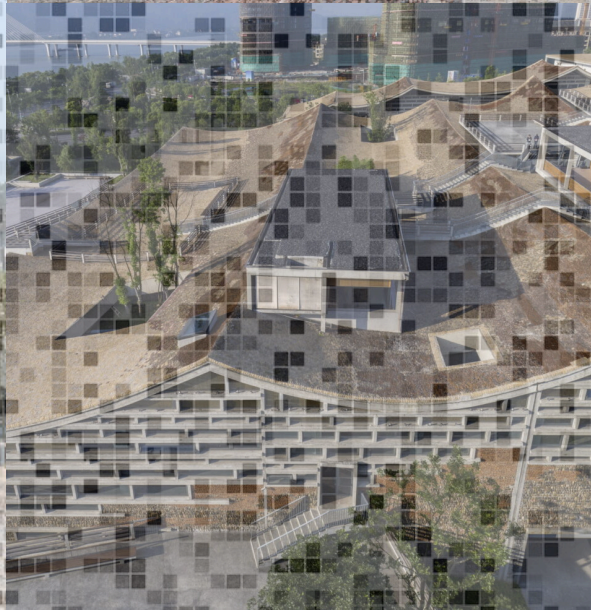
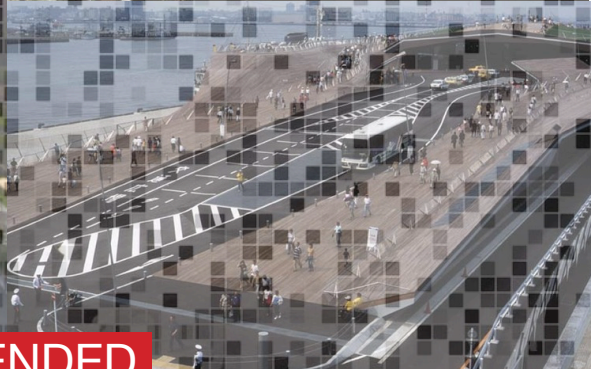
To end with this strategy of shaping a new ground, proposing contemporary artificial topographies for public uses, there is a last example that directs the reflection more precisely. In China, 2012 Pritzker Prize-winning architect Wang Shu's Amateur Architecture Studio, has designed a cultural complex clad in recycled tiles in Fuyang, near Hangzhou.²⁷ The rooftops of the complex are wave-shaped, generating like this an artificial topography, clad in mixed tiles, which is traversable via staircases and paths accessed from external galleries, offering string views over the surrounding mountainous landscape. While the main inspiration for such the formal decision to have a wavy roof comes from traditional Chinese architecture, the result is a walkable new landscape on top of the building that is reachable from the building itself by some stairways and that proposes holes in it working as light wells bringing natural lighting into the spaces below. Activating the rooftop of such a cultural building, hosting a gallery, a museum and archives, through the means of proposing a public artificial ground accessible for the citizens, the building escalates in its degree of publicity to a point where it is not needed to visit an exhibition to be able to use a new public space where to have a walk, admire the landscape, etc. *finding a delicate balance between nature* and the building constructed following the *skills mastered by the locals*, having clear boundaries established by the shape of the cultural complex marked on the ground.²⁸ Even if the feeling of being a flowing ground in direct continuity with the existing surrounding grounds is not as evident maybe as in previous examples, through the design of a collection of ramps and stairs, the roof of the newly built cultural complex in 2018, becomes a public artificial ground carefully design to welcome the visitors and users, offering a wavy surface along which one can transit, overlook the city or sit down and rest, clamming such activities as political ones too, offering to the citizens the right to the city, through a subtle publicly accessible rooftop of a cultural building.²⁹

26 Maluenda, Inma F., *New Natures. Intermodal Sattion in Logroño*. Abalos Sentikiewicz arquitectos, Actar, Barcelona 2013.

27 See Block, India, *Wave-shaped roof of recycled tiles tops Wang Shu's Fuyang Cultural Complex* in deZeen. 7 nov 2018. Site Visited 29.09.2022. <https://www.dezeen.com/2018/11/07/wang-shu-fuyang-cultural-complex-amateur-architecture-studio-hangzhou-china/>

28 Peluso, Salvatore. *Amateur Architecture Studio*, in Domus. Best 100 architecture firms 2019. Site visited 29.09.2022. <https://www.domusweb.it/en/speciali/best-architecture-firms/2019/amateur-architecture-studio.html>

29 See Harvey, David, *Rebel Cities : from the Right to the City to the Urban Revolution*, Verso, London 2019.



2.2 RISING - PODIUM

The second selected design strategy is differentiating itself from the previous one since the spatial continuity often granted by shaping the ground, here is abruptly interrupted because of a detachment of a slab from the level of the existing ground floor of the city. This is the main feature of rising the ground, an operation that alludes metaphorically to the figure of the podium. The word podium has been retained here as an almost synonym of words like plinth, pedestal, base or stylobate, but chosen carefully amongst all the previous one because of its implicit and exclusive meaning of being a *raised area on which a person stands to speak to a large number of people, to conduct music, or to (even) receive a prize in a sports competition*.¹ The word plinth, having as well similar connotations, can serve to refer to the same figure even though sometimes becomes a little less free and less usable for referring to a raised surface usable for the collectivity, because of it being defined as *a square block, especially of stone, on which a column or a statue stands*.² By designing a new ground for the public through the strategy of rising, the goal is to confer to such a newly created place the power of being seen, heard, noticed. Ultimately, to convert the public place into a special event, to make the rest of the city focus on it, as pop stars use podiums even on top of their stages in order to appear as a single figure separated from the rest of dancers for example, performing a special moment along the show.

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Some mainstream pop stars do in some of their shows a specific use of podiums, them being raised surfaces that, when performing particular moments at their shows, help to feature the power of such a figure that, in the artistry context but as well could be in the urban one, becomes of a particular value. At 2017's Super Bowl Halftime Show for example, the stage and show design incorporated several moments where the hired star of the year, Lady Gaga, was dancing and singing on top of raised surfaces or podiums.³ By just elevating her several centimeters from the rest of the stage, she got singled out from the rest of performers at the show and the whole looks of the spectators were focusing only on the body and actions of the singer. This is a frequent strategy used by performers in their shows to highlight moments or actions along the duration of it. Of course Lady Gaga was not the first artist to make use of such a strategy nor the last one. The same year, artist and set designer Es Devlin, imagined for Lorde's performance

¹ Definition of the noun « podium » according to Cambridge Dictionary. Site Visited 02.09.2022. <https://dictionary.cambridge.org/dictionary/english/podium>

² Definition of the noun « plinth » according to Cambridge Dictionary. Site Visited 02.09.2022. <https://dictionary.cambridge.org/dictionary/english/plinth>

³ Artist LeRoy Bennett co-produced the stage design at Lady Gaga's 2017 Super Bowl's Halftime Show. Site visited 02.09.2022. <http://www.leroybennett.com/portfolio/lady-gaga-super-bowl-li-halftime-show-feb-5-2017/>

Figure 28, 31 & 32. Maritime Passengers Terminal of Yokohama. Foreign Office Architects. 2002. Yokohama. Japan.
/ Figure 29, 30, 33 & 34. Fuyang Cultural Center. Wang Shu/ Amateur Architecture Studio. 2018. Fuyang. China.

at Coachella and Glastonbury Festivals a raised transparent glass box that, lifted from the ground by some mechanized arms which were varying the height of this podium-like structure, making of it an artificially ground on top of the stage constituting a more interactive display than a regular podium.⁴ Another case for example is featured by Argentinian singer Nathy Peluso's last display for her 2022 Tour consisting as well for example on several movable podiums for hosting the musicians, and a very big one behind them that the main artist used several times along the show.⁵

A podium is an object that, situated on top of a surface, provokes an alteration on the continuity of the same. By means of using the strategy of rising, podiums become elevated pieces of ground suddenly disconnected from the level of the existing surface because of its difference in height but, proposing at the same time, quite complex and dichotomous relationships visually, haptically and of access between the existing ground and the new raised place.

The word plinth, a word that this research considers as analogous to the one of podium, becomes the most adequate version to be used in the art world for defining such form and concept of a raised place.⁶ A plinth then is often considered, especially in art, as the base for another object. It is a form or an object whose nature becomes quite understandable when thinking of a sculpture that is staged on top of some volume as seen in the definition previously. By elevating the work of art, placing it on top of a plinth that acts directly like a stage, the piece of art acquires a position of respect, provoking even a sense of collective importance.⁷ According to theorist Tahl Kaminer, a plinth *articulates the object's relationship to its environment*, meaning by this that it controls the tangible relationship to the object, provoking a difference of status spatially and defining the kind of exchange that the public can establish with the object positioned on top of the plinth.⁸ Podiums then, single out. When in an urban context, a podium *on which a building is placed, is used for isolating it from its environment*.⁹ Such podium confers to the object or building on top a certain degree of singularity, making it look as an exclusive or privileged entity standing there. When in the city then, a podium imagined for the collectivity assuming the urban scale, can propose a raised place which would appear as partly disconnected from its surroundings but still

4 Maybe less well-known that Lady Gaga, Ella Marija Lani Yelich-O'Connor, known as Lorde, is a New Zealand singer, composer and producer. Es Devlin designed the structure for the concerts. Site Visited 02.09.2022. <https://esdevlin.com/work/lorde-coachella>

5 These structures have been made by a Catalan company called Pascualin Estructures whose expertise is to craft scenographies for opera shows, theater but as well podiums for pop stars like Nathy Peluso or as well Rosalia's last 2022 Motomami World Tour Show. Site visited 02.09.2022. https://www.pascualin-estructuras.com/portfolio_page/rosalia-motomami-tour-2022/

6 Especially in an urban context.

7 Pedestal could work again as a synonym of plinth but as well of podium, especially in an urban context.

8 See Kaminer, Thal, *Von Ledoux bis Mies: The Modern Plinth as Isolating Element*, Architectural Research Quarterly 23, no. (2019) pp. 21–32.

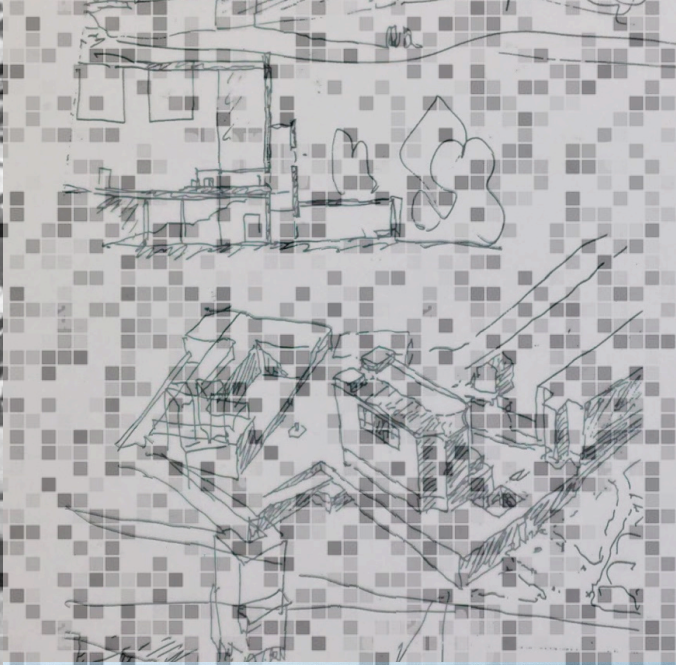
9 See Aureli, Pier Vittorio; Tattara, Martino, *Platforms. Architecture and the Use of the Ground* in DOGMA (ed.) *Platforms.*, Black Square, Milano. 2021. pp. 4-7.

granting a controlled accessibility, allowing citizens to mount on it and overlook and observe the city, making out of such a figure a new public space that can be seen as having a position of importance along the rest of artifacts in the city, an analogous value to the one of a square of Agora. In order to understand how to arrive to the notion of an artificially made new ground for the collectivity, singled out from the rest of the city by the means of the strategy of rising the new surface on a podium, some examples are going to be featured along the following lines. From very early times in human history, the raising of a piece of ground to place a built structure on top, it has been related with religious beliefs and liturgical actions. An example of such are the *crepidomas on which classic temples in ancient Greece made out of stone where built placed on a foundation of local stone [...] the upper part of (which), the stylobate, ensures the perfect horizontality of the structure and thus guarantees the stability of the heavy elements above*.¹⁰ According to Brussels based architects and theoreticians Dogma, the Greek temple base is therefore not just a plinth, but also an elaborate, multi-level structure, the role of which was both to adjust the temple to the underlying topography and to augment its monumentality.¹¹ So both, serving practical and more metaphorical functions, and use to mediate with its topographical surroundings and the accessibility towards monumentality. In the same way, a religious building of such an importance is staged as a single object. Old Delhi's *Jama masjid* is a much later and different example but that can be seen as analogous since the whole mosque is raised by means of a podium of several meters from the level of the city. Three monumental stairs, one on each north, east and south facade, propose specific accesses from the city up into the esplanade, allowing visitors and the faithful to mount up this artificially built ground for religious collective purposes. Even nowadays, it is not hard to find religious buildings, constructed in the last few years, that use the mechanism of the podium, implying the strategy of rising the ground, in order to locate on top of it newly designed religious buildings. This is the case for example of Alvaro Siza's Santa Maria church in San Marco de Canaveses of 1996 or even the more recent example of Marina Tabassum's Baitur Rauf mosque in Dhaka, Bangladesh, of 2012.

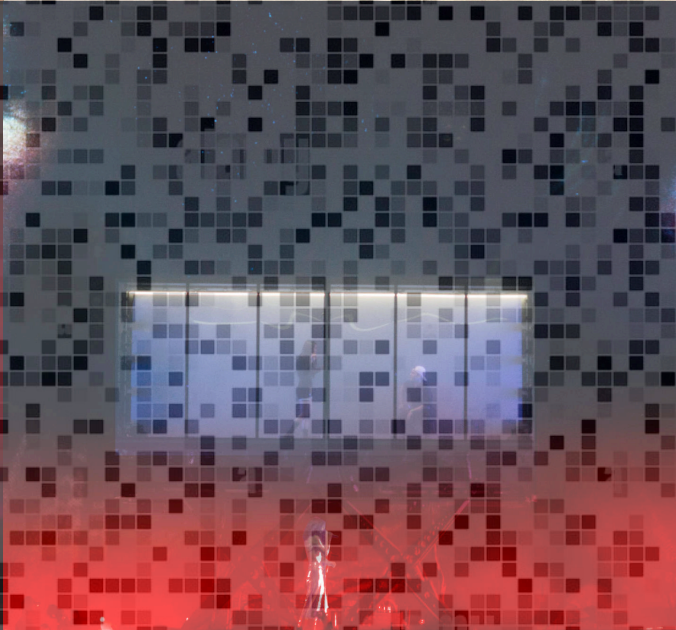
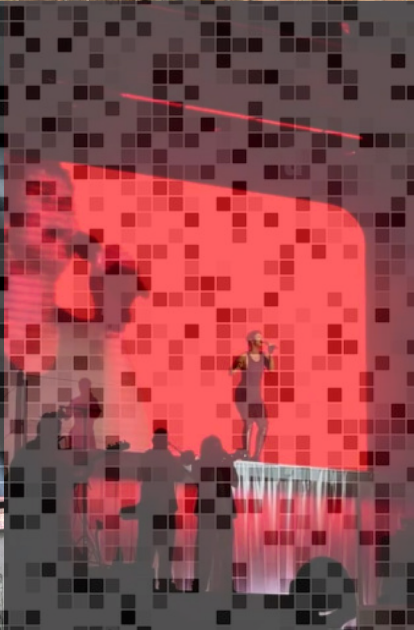
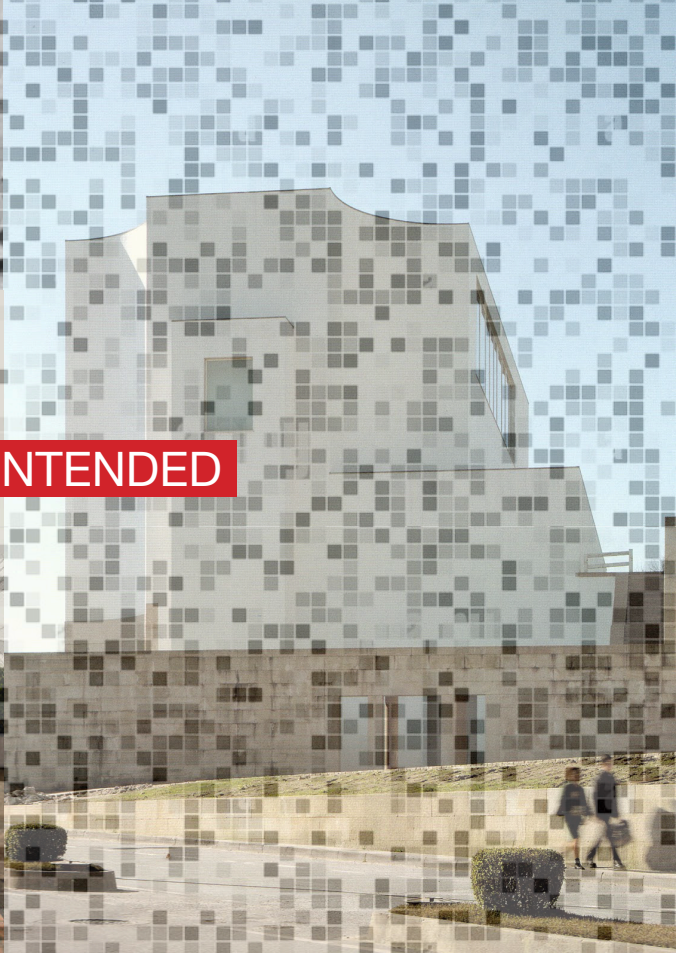
But not only religious buildings or complexes were using the figure of the podium. Monuments were erected on top of podiums lots of times and some public buildings too. Further in history, and especially during the 19th century, civic buildings like courts, city halls or museums started often being designed and constructed on top of podiums as well. Actually, when analyzing a building that is placed on top of a podium, one of the first thoughts that can come to mind of such a building is that it is probably a remarkable construction in terms of its meaning for the collectivity. Podiums are a mean of securing the autonomy of what is staged on top of them. For buildings on top of a podium in this case, its architecture appears freed to a certain extent from the urban whole. A very early

¹⁰ Aureli, Pier Vittorio; Tattara, Martino, *Platforms. Architecture and the Use of the Ground* in DOGMA (ed.) *Platforms*, Black Square, Milano. 2021. pp. 4-7.

¹¹ Ibid.



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example of such, during Renaissance times, could be identified in the *Ospedale degli Innocenti* of Filippo Brunelleschi in Florence, from 1445. This building, dedicated to a collective function, was raised from the level of the city and situated on top of a podium. From the *Piazza della Santissima Annunziata* a very wide stair of nine steps, as wide as the facade of the building itself, renders accessible the Ospedale from the ground of the city. This new raised artificial ground on which the building is located grants the Ospedale with a status of relevance amongst the city, as well as the important colonnade along the facade.

An analogous reflection that can add on clarity of what to rise a place or a building from the level of the city brings to it is found when looking at the modern city. After a big jump in time, in this context, it is possible to envision the modern city as a system or as an ensemble of autonomous blocks, buildings being somewhat proposed as isolated entities from their environments, especially public ones. This is how could be defined Karl Friedrich Schinkel's vision for Berlin back to the 19th century: a system of single Neoclassical architectures, being cubic blocks detached the ones from the others, but establishing relationships amongst themselves and the environments at the same time.¹² A city made out of monuments, a City-Monument in itself.¹³ Such relationships are made by the way in which the buildings or monuments were oriented and were proposing specific views on the city or, on the opposite, appearing in the city as unoriented objects but having all facades being ambivalent. These relationships are made as well by how the accesses to the buildings were proposed regarding the city. The urban blocks with which Schinkel was imagining to construct the city he had envisioned, like the *Neue Wache*, the *Spielhaus*, the *Bauakademie* or the *Altes Museum*, were freestanding architectural objects heightened from the level of the city by means of podiums having a considerable size, which was analogous to the size of the buildings they were holding. At the same time, and thanks to the fact that such buildings were displayed leaving a certain distance with the rest of the urban fabric around, they were becoming like this apparently freed from the urban whole, summing up additionally the effect that the podiums on which they were raised was conferring. But, dichotomously, for example in the *Altes Museum* (1830)

12 Since K.F. Schinkel was the « Architect of the Prince » - see Semerani, Luciano, *Attualità di Schinkel*, in Schinkel, Karl Friedrich, 1781-1841. *Schinkel L'Architetto Del Principe*, Marsilio, Venezia 1989 - Schinkel's architecture had to interpret the big politics with which the German sovereign desired to rule the rebirth of the Prussian empire and the reunification of it. In his director plan for Berlin of 1817 he proposes a city where all monuments that the king wanted to build, lots of them imagined on top of a podium, would establish a dialogue with themselves and the urban space. Schinkel realizes that it is the whole city the one that has to become the monument representing the new nation that the King was aiming to recreate, a City-Monument.

13 Semerani, Luciano, *Attualità di Schinkel*, in Schinkel, Karl Friedrich, 1781-1841, in *Schinkel L'Architetto Del Principe*, Marsilio, Venezia 1989.

Figure 1. Jama Masjid. Pictures from 1965 and 2019. Old Delhi. India. / Figure 5 & 6. Santa Maria Church. Alvaro Siza. 1996. Marco de Canaveses. Portugal. / Figure 2. Baitur Rauf Mosque. Marina Tabassum. 2012. Dhaka. Bangladesh. / Figure 3. Lady Gaga at the Super Bowl Half time show. 2019. Figure 4. Nathy Peluso in her Calambre Tour 2022. / Figure 7. Es Devlin's stage for Lorde. 2017.

which is mounted on a podium that raises it from the ground level of the city and counts with a surrounding lawn surface, both facts initially isolating it and marking its singularity, the strategy of the podium is able to grant as well the museum with a place open for the visitors from where to overlook the city, relating back like this the building to the urban fabric in which it is inserted. This building is a box oriented on only one of its sides in the direction of the royal palace and the Bauakademie. The reinterpreted Stoa that covers the south-eastern façade increases the level of publicity that this building emanates towards the city through its architecture. And the perspectival views that Schinkel draws looking at the museum from the city and as well from the stoa-vestibule of the Altes to the city, show this, featuring this building already back at the 19th century, as a *multilevel stage* mounted on a podium, marking the importance of such place and from which one can overlook the monumentality of the city from a privileged position, from a new artificial ground raised from the level of the city.¹⁴ The thickness of the podium, on which the building is mounted is not accessible for the public but it serves internal functions of the museum.

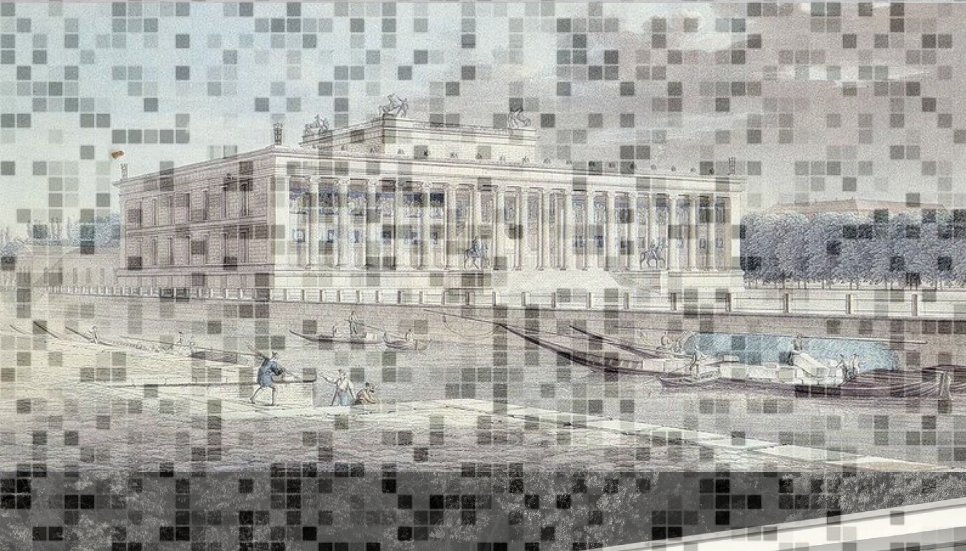
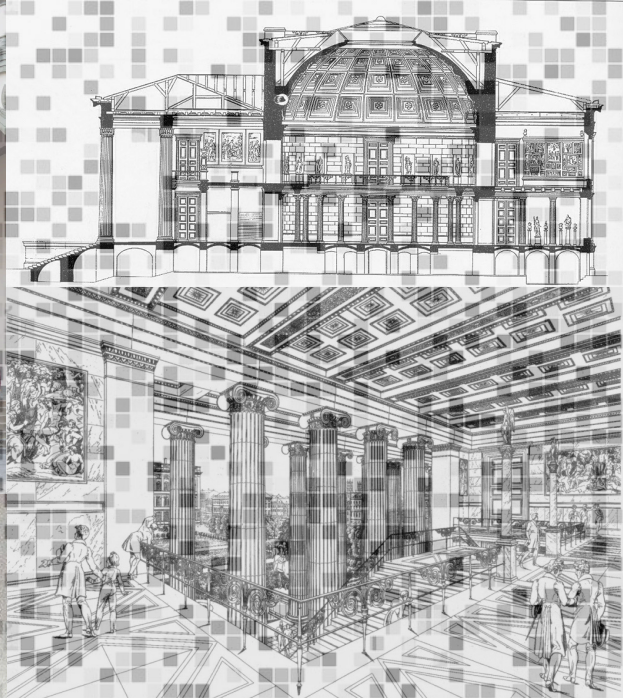
The Barcelona Pavilion of 1929, designed by Mies van der Rohe and Lilly Reich is another building made for hosting communal activities and even inter-cultural exchanges at the expo, that is mounted on top of a podium. As it is the case in the Altes Museum, this podium, and the fact of being raised from the level of the ground, constructing a new one, grants the building a special position along the surroundings. It singles out the structure. It renders it of collective relevance even. When Andres Jaque got invited in 2013 to intervene in the Pavilion together with its Office for Political Innovation, the project that issued from such, “PHANTOM. Mies as Rendered Society,”¹⁵ was first of all revealing the existence of two main levels in the Pavilion. The first was the main one, that everyone recognizes and that is open to the public. The second, was the other one that is not visitable and initially was just projected there because of technical aspects, using the level difference occasioned by the raising of the new ground, directly below it. According to Jaque, the main level of the pavilion, that transparent, that “calculated [...] and that activates foundational notions of politics,”¹⁶ cannot be understood without the cellar, that is obscure and hidden, but where the functional and ordinary happens. Both entities together make the pavilion truly exist, the podium being something more than just a strategy to simply raise the level of the new ground in

¹⁴ Kaminer, Thal, *Von Ledoux bis Mies: The Modern Plinth as Isolating Element*, Architectural Research Quarterly 23, no. (2019) pp. 21–32.

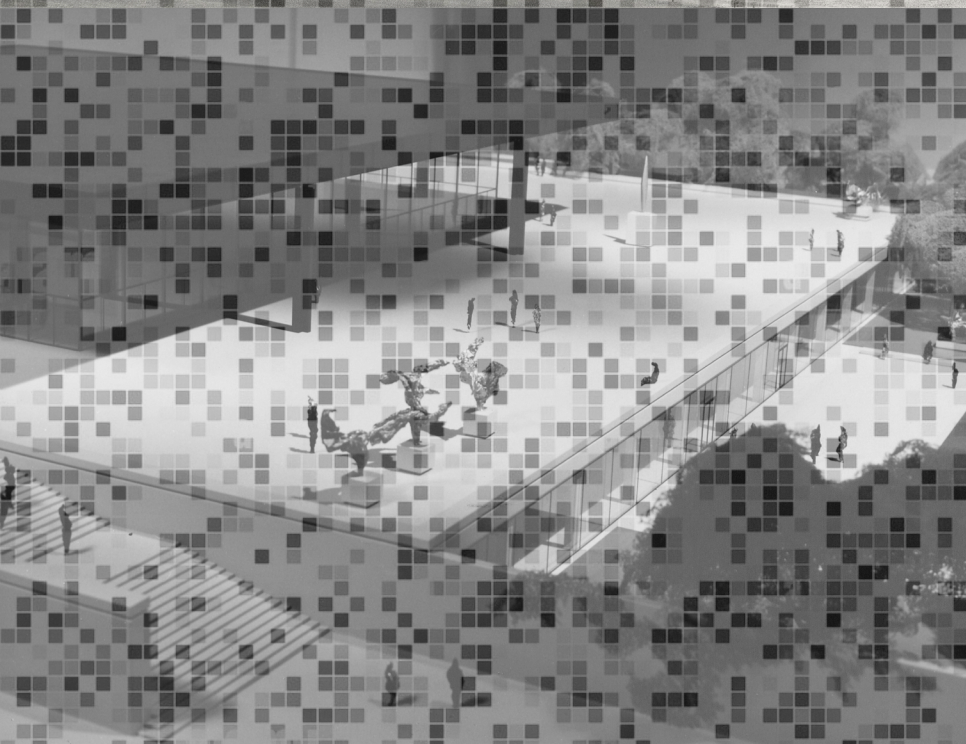
¹⁵ Jaque, Andrés, *La gata Niebla y el pabellón fantasma*, in Jaque, Andrés; Office for Political Innovation (ed.) *Mies y la Gata Niebla: ensayos sobre arquitectura y cosmopolítica*, Puente editores, Barcelona 2019. pp. 95 -110.

¹⁶ Ibid.

Figure 8. Ospedale degli Innocenti. Filippo Brunelleschi. 1445. Florence. Italy. / Figure 9, 12 & 13. Altes Museum. Karl Friedrich Schinkel. 1830. Berlin. Germany. / Figure 10. Barcelona Pavilion. Mies van der Rohe and Lilly Reich. 1929. Barcelona Spain. / Figure 14 & 15. Phantom. Mies as a rendered Society. Andrés Jaque. 2013. Intervention at Barcelona Pavilion. / Figure 11, 16 & 17. Neue Nationalgalerie. Mies van der Rohe. 1968. Berlin. Germany.



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order to create a new urban privileged condition for the collective but, an active asset for the functioning of this newly created artificial ground. Being already the building itself as well.

Mies van der Rohe 1968's Neue Nationalgalerie in Berlin, is another example of a public building, again a museum like the Altes, mounted on a podium. Even if more than hundred years later, it is possible to identify a lot of features in common. This time, the rising of the newly constructed ground is made really apparent because of the way in which the podium is built. On one side there is a podium clad on stone, on top of it, a metallic shed surrounded by transparent glass facades incarnates the object put on top. The robustness that characterizes the design of the podium contrasts with the transparency of the shed which. Such robustness and form is used to indicate the degree of autonomy conferred to the building.¹⁷ The expression of the newly created artificial ground for hosting the public is very explicit: an open free surface on which an almost floating roof stands. The geometry of the design of the podium as well as the material chosen for it adds to the expression of it as a robust form. There is no doubt that such podium is isolating the building from the rest of the city. However, strong relationships between the city and the building still exist. The accesses are controlled but granted in most of its sides, they are less monumental but centered and symmetrical. When analyzing the object's relationship to its environment, a true articulation, spatial and visual, is clearly found at such design. Once on top of the podium, the visitor is put in relationship back to the city. From this new level, the views over the urban masses is a privileged one. The esplanade around the shed becomes a public surface, a place made for the collectivity. It is easily accessible by the public. It is clearly delimited by strong borders, but still porous of course. The building reaches a relevant position amongst the city, but the public visiting it as well. It is a newly artificial ground created for placing a cultural activity and the visitors in a special position regarding the immediate surroundings, it seems that in this project, more than thirty years after the Barcelona Pavilion, he realized the figure of the podium as being a true asset for designing his architecture further than the fact of raising a building on top of a newly created ground. In this case again, both the shed and the podium conform the actual building, the latter being building in itself as much as the former. The podium of the Neue Nationalgalerie is this time hosting a full new underground level that continues hosting the exhibition of the museum below the new visible raised ground. The figure of the podium in architecture becomes like this a more complex one than in the art world, being used to single out a place, rendering a potential stage, but using it as well in its interior as a hollow structure that can be habitable.

¹⁷ Kaminer, Thal, *Von Ledoux bis Mies: The Modern Plinth as Isolating Element*, Architectural Research Quarterly 23, no. (2019) pp. 21–32.

As a metaphor of the Manhattan's urban landscape, Rem Koolhaas wrote a little story entitled *City of the Captive Globe* as part of a collection of tales that appear at the end of his *retroactive manifesto* on New York published in 1978.¹⁸ In it, a city formed by a collection of marble podiums staging well-known architectures and artistic references as well as some hollow ones, containing spaces in its interior, are organized along a geometrical grid, enclosing in the central plot a captive terrestrial globe imprisoned by the actual ground of the city itself, whose borders don't allow the globe to escape. Possibly alluding metaphorically to the main central void of the city of New York, Central Park, and to the tradition of central voided public spaces whose origin is always the Greek Agora, the podiums here, don't stage the collective place of the city per se but the different architectures and references that Koolhaas defines as *ideological laboratories*.¹⁹ The figure of the podium is used here for showing all these architectures and references as having an analogous value, not allowing for any of the podiums to really stick out, so neither the architectures staged on top of them, just leaving a little status of exclusivity to the eight stair-like structures surrounding the captive globe around the four edges of ground that is enclosing it, and understood as potential places from where to overlook the particular prisoner. Still of a mysterious nature, these marble blocks mostly acting as podiums, are supposed to be hollow as well as serving to access each of the *buildings* on a podium. However, and by reducing the urban expression to the one of the podium, such a design strategy of rising a place gets diluted amongst the urban fabric because of the repetition, not featuring here the special qualities that a podium is meant to offer as understood in this thesis, as a more unique figure staging a place of single importance in relationship with the city. This imaginative tale, that somehow could even be seen as Schinkel's desire of building a city made out of independent blocks pushed really to the limit, ends up showing that, paradoxically, when the podium becomes a regular form in the city, it loses its quality of generating a particular place. Opposite to it, the question remains; what if imagining another metaphorical city where the actual staged entity would be this captive globe. Understanding the globe as a symbol of the alive, of the common, would be then logic to stage it on top of a podium. A podium that would contribute to stage and single out the uniqueness and importance of such *globe* as well as render it accessible, and serving functions for the place created on top of it to exist. Or to say what is the same: what if the thing that would be staged on top of a such newly created artificial surface is not a building anymore but an actual place for gathering, a place for the collectivity, so political life is staged and singled out from the rest of the urban mass and not the other way around. To use the figure of podium to hold a new place for the collectivity.

¹⁸ Koolhaas, Rem, *Delirious New York : A Retroactive Manifesto for Manhattan*, New York: Oxford University Press, 1978.

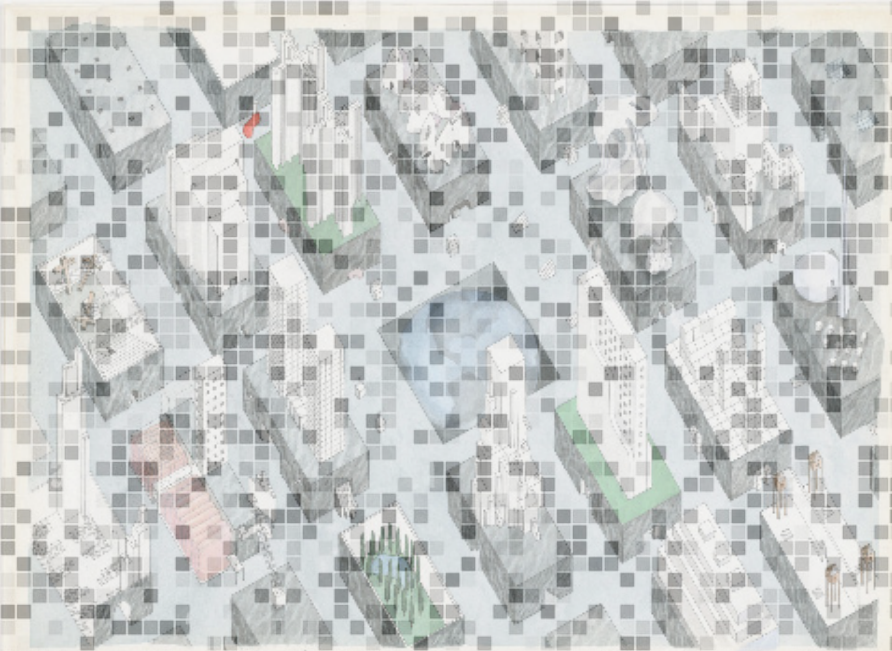
¹⁹ Ibid.

In 1931, in Valencia, a regional city that was growing as the third biggest city of Spain, several urban reforms were undertaken. With the apparition of the newly declared Second republic, Javier Goerlich, soon to be the municipal architect of the city, imagined an intervention to regularize the existing geometry of the City Hall square, that had grown in importance and was about to become the new center of the city, leaving the cathedral's square behind. In the triangular plot of the square it was proposed to conceal its irregularity to *construct an elevated central massif [...] leaving wide parallel-sided streets between it and the buildings that border it* becoming like this a triangular semi-elevated portion of ground with a fountain on each corner and several stairs rendering accessible for the public.²⁰ According to Francisco Taberner, teacher of Urbanism at the Polytechnic University of Valencia, this would be the first time in the history of the city that a project for an urban public space in the city was proposed. The project was trying to truly imagine a new civic center for the city. As a strategy Goerlich decided to use the form of the podium in order to rise the new collective artificial ground from the level of the city, staging and offering like this a special location for the public life to happen and benefiting from the nature of the podium to insert a half-sunken flower market below the newly created artificial surface. A circular patio in the middle of the raised plaza was bringing light to the flower market situated below it. And even if some would criticize the project because of its eclectic style, calling it *the Valencian cake* and claiming that *the project talks about the cultural poverty of the Valencian bourgeoisie of the time (since) in the Thirties Mies van der Rohe was already doing marvels along Europe*,²¹ the truth is that such strategy, regardless of the style in which it was built, proposed a kind of public space that can be retained as powerful nowadays. The strategy of raising the ground by means of a podium it has been used in order to stage symbolically, but as well functionally, a main and central public space for the citizens at the beginning of the 20th century. Additionally, the hollowness of the podium, due to its nature, is used for granting a more complex and successful functioning of the space, injecting additional programs and activities to the everyday public life below the surface of the podium. There is no building anymore staged on top of the podium itself but a public space for hosting a political collectivity, staging like this a real public spectacle which would be different and diverse every day.

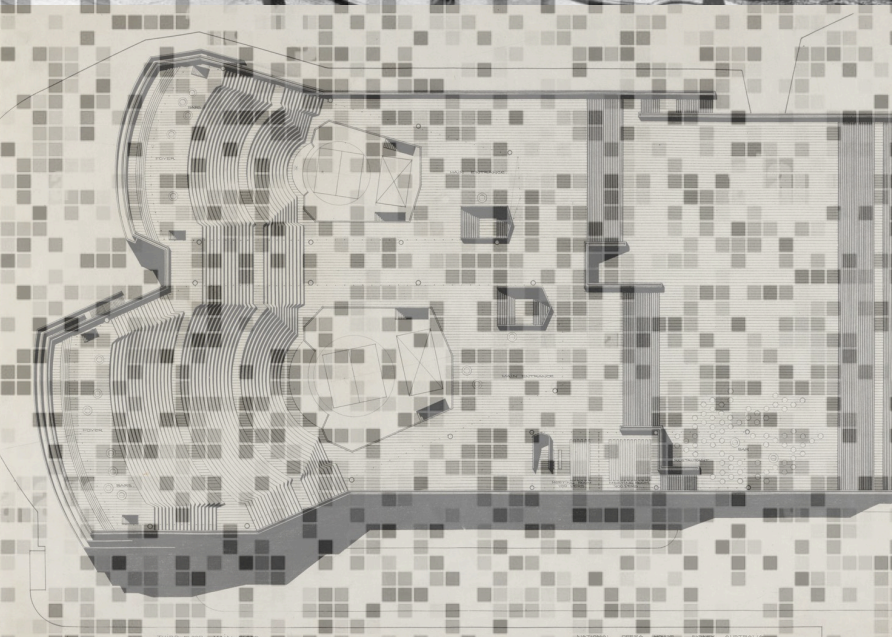
²⁰ Extract from *Memoria del proyecto de Mercado de flores en la Plaza de Emilio Castelar de esta ciudad* of Javier Goerlich. See Taberner Pastor, Francisco, *Las reformas urbanas de Goerlich: intento de clarificación* in Archivo de Arte Valenciano. Vol. XCII, 2011. pp. 317-338.

²¹ Valencian professor Rafael Rivera states this in a press article. See Viñas, Eugenio, *Valencia recupera la plaza del Ayuntamiento de Goerlich (A través del arte sonoro)* in Valencia Plaza 17.04.18. Site Visited 20.04.22. <https://valenciaplaza.com/valencia-recupera-la-plaza-del-ayuntamiento-de-goerlich-a-traves-del-arte-sonoro>

Figure 18. The City of the Captive Globe Project. Axonometric. Rem Koolhaas, Madelon Vriesendorp. 1972. New York, New York. / Figure 19, 22 & 23. City Hall square & covered flower market. Javier Goerlich. 1931. Valencia. Spain. / Figure 20, 21, 24 & 25. Sidney Opera House. Jorn Utzon. 1959-1973. Sydney. Australia.



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The concept of staging and proposing a public place on top of a new ground by means of raising the ground itself is something that was chosen as well by Danish Architect Jørn Utzon in his masterpiece Sydney's Opera House.²² In this complex and robust conception of a brick podium, constituting the base for the Opera House, what differs from the former podiums staging buildings on top of them is that, in this case, and in a bigger and much more complex scale than Valencia, the podium becomes the building in itself. On top of it just some curved roofs are covering and protecting the spaces found on top of the podium, like the two main theaters. For Utzon, being part of the second half of the 20th century architects generation, the idea of a device able to separate the pedestrian realm from the motorized traffic was very much appreciated. Actually, by raising the spaces he designed from the ground level of the city by the means of a podium, the new pedestrian ground he imagined was isolated from the noise and pollution of cars. Furthermore, using the word *platform* this time to refer to the paradigm of the so called in this thesis podium, Utzon writes that *in the Sydney Opera house scheme, the idea has been to let the platform [...] separate primary and secondary functions completely. On top of the platform the spectators receive the completed work of art and beneath the platform every preparation for it takes place*.²³ By this words, it seems clear that Utzon had understood as well the potential of raising a new ground from the existing level of the city, not only to make a privileged place for the pedestrian collectivity, but as well to use the hollowness of the podium for especially technical reasons. Like this, the podium becomes the building in itself, incarnating both worlds complementary. In this example, the strong flatness and the horizontality with which Utzon treats the collective surface or plaza of the Opera House, staging like this a collective public space on a podium, is a symptom of the fascination that the architect had with such strategy.²⁴

A parallel understanding can be extracted of the flat raised esplanade laying between the Hamburger Kunsthalle and 1996 Oswald Mathias Ungers' Galerie der Gegenwart, being a part of the latter's extension.²⁵ The work of the architect - whose clear admiration for Schinkel's architecture is absolutely present on his work - it is found in the heart of the city of Hamburg and consisted in proposing a podium, in continuation to the one on which the Kunsthalle was designed, that would host on top of it a radical white cubic volume on one side, and an esplanade *calculated to correspond exactly to the quadratic ground plan of the new volume situated between the Kunsthalle and the new cubic volume of Ungers'*

22 The Sydney Opera House, designed by Danish architect Jørn Utzon, has its very first origin at the competition of 1956. But it will not be until 1973 that the building would be finished.

23 Utzon, Jørn, *Platforms and Plateaus: Ideas of a Danish Architect*, Zodiac, No. 10 (1962) pp. 113–140.

24 This is the word in which Dogma describe Utzon's interest for such a strategy. See Aureli, Pier Vittorio; Tattara, Martino, *Sydney opera house*, in DOGMA (ed.) *Platforms.*, Black Square, Milano. 2021. pp. 73.

25 The museum as we know it today is a XIXth century born urban typology. The original building of the Hamburger Kunsthalle dates back from 1869. A first extension took place between 1912 and 1919.

Galerie der Gegenwart.^{26,27} Ungers' research on the self-referenced idea in architecture, the absolute architectural form, super-historical - continuing with the ambitions of Schinkel in a way - probably brings the architect to propose such an abstraction of the classical and rigorous typology of Palladio's renaissance masterpiece Villa Rotonda.²⁸ But it is the actual podium that becomes a crucial element here, not only accommodating a building on top of a raised ground, and away from the roar of traffic singling it out from the urban fabric, but proposes as well to host an open plaza next to it. Originally intended as an outdoor sculpture garden, *remained, however, a splendid, and perhaps more coherent, tabula rasa*, offering to the collectivity a new artificial ground, a smooth surface able to stage communal life, a place that can be appropriated for the public in a free way and that is clearly delimited by sloping borders defining a radically geometrical virgin surface for the collectivity.²⁹ Additionally, the height or thickness of the podium allows to host extra spaces under the newly created artificial surface deliberately used for *avoiding an accentuated entrance situation and leading visitors underground through exhibitions rooms hidden in the granite plinth (or podium) from the old building into the new one* creating like this a spatial continuity between both buildings.³⁰ What it is revealing here is that the archetype of the podium has stopped being used exclusively to support or stage civic buildings with collective importance, to instead stage a raised open square for the public where the actual new public ground and the podium that sustain it are acting as the *building* itself. It is exactly the same case for this other cultural building in Mexico this time. Just in front of the archaeological site of Tepanzolco, in Cuernavaca, Central Mexico, a podium proposing a new raised artificial ground holds a multitude of public spaces as well as a triangular-shaped volume. Finished in 2017 and imagined and built by Mexican architect Isaac Broid together with office Productora, this *distinctly Mexican architecture* inspired by the pre-Hispanic roots is built on the place of a former auditorium just next to the ruins of the Aztec ceremonial complex consisting on basalt pyramids, very similar to the one that fascinated Utzon when visiting Mexico in a study trip and that he writes about in his text *Platforms and plateaus: Ideas of a Danish architect*.³¹ As the architects explain the situa-

26 See Sorrentino, Francesco; Trentin, Annalisa, *Ordine e Moltitudine. Una conversazione con Annalisa Trentin*, in Sorrentino, Francesco (ed.) *Oswald Mathias Ungers. L'Uno e il Molteplice*, Clean: Napoli 2017. See as well Ungers, Oswald Mathias, *Five lessons from Schinkel's Work*, The Cornell Journal of Architecture. Issue 01, 1981. pp. 118-119.

27 Von Naredi-Rainer, Paul, *Galerie der Gegenwart*, in Von Naredi-Rainer, Paul (ed.) *Museum buildings: A Design manual*, Birkhäuser, Basel 2004. pp. 74-77.

28 One of the characteristics of villa Rotonda is to be an object ambivalently oriented in the four directions of each of the facades. The Bauakademie of Schinkel is already this ambivalent object. So it is the white cubic volume of Galerie der Gegenwart.

29 Turchiano, Leticia, *Hamburger Kunsthalle*. Site visited on the 04.02.2022. <https://www.archilovers.com/projects/27/hamburger-kunsthalle.html#info>

30 Von Naredi-Rainer, Paul, *Galerie der Gegenwart*, in Von Naredi-Rainer, Paul (ed.) *Museum buildings: A Design manual*, Birkhäuser, Basel 2004. pp. 74-77.

31 This is how such architecture is defined. See Beaumont, Eleanor, *Pyramid scheme : Teopanzolco Cultural Center in Cuernavaca, Mexico, by Isaac Broid and Productora*, Architectural Review, Issue 1451

tion of the building proposes two fundamental challenges: on the one hand, to strengthen the relationship with the archaeological site and, on the other, to generate significant public space.³² For it, the project proposes a *floating concrete slab that uses the foundations of the old auditorium it has replaced* generating like this an orthogonal podium that contains all functional programs to the building, proposing on the top of this newly created ground an extensive elevated terrace as well as a collection of outdoor amphitheaters, being the major one the *gently stepping roof* of the triangular volume that contains the inner theater that reaches down to meet the ruins.³³ Located in the suburbs of the city, not far from the center, the new cultural center is just separated by a couple of steps from the archaeological site whereas on the side of the city, a full floor constituting the podium is visible and accessible to the public since the newly created ground on the figure of a podium uses the topographic slope to be installed. From the top of the raised surface, one is able to look towards the ruins, the city and as well the incredible landscape surrounding it.

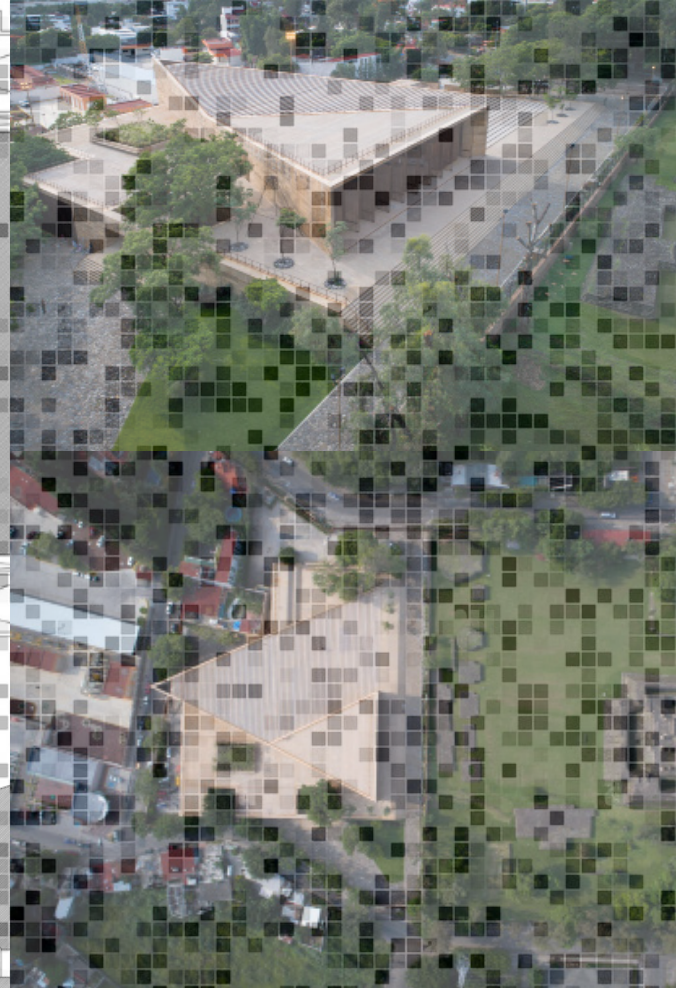
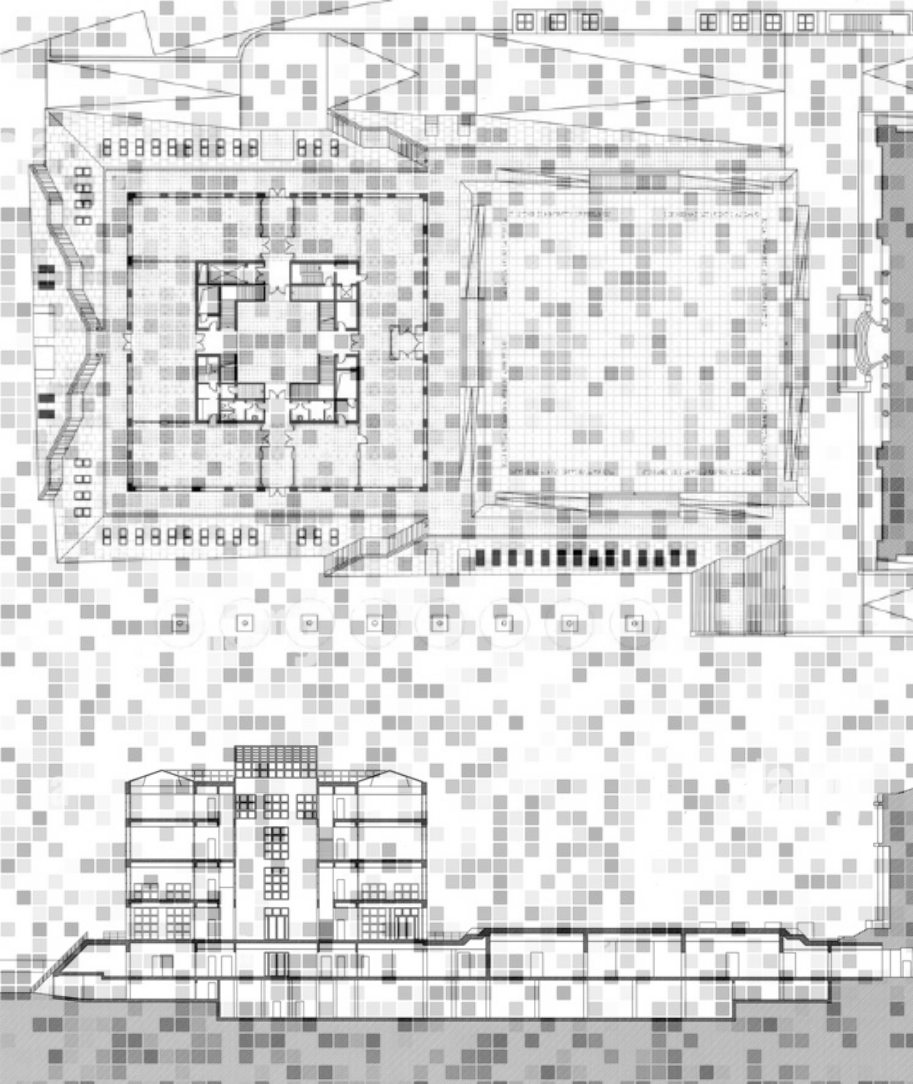
Once again, this building exemplifies how it is possible to propose frames that become flexible for being interpreted and appropriated by the public. This newly artificially created surface serves as a ground for the collectivity to reassemble and explore new possibilities, connections, and leisure activities. The architects imagined to connect pedestrian routes across the site, providing generous public spaces engaging with the existing streets and proposing an accessible new public space for the city, even if raised from the level of it. It is striking as well to see a new building facing some ruins that have been interpreted contemporarily as enclosing so much potential when imagining frames for a contemporary public life with its corresponding public spaces. As an example of the possibilities that an architectural frame could offer to a contemporary political collectivity Architectural Review's articles writer Eleanor Beaumont states in it that *just seven months after opening, the cultural center has attracted a rich program of events: on my visit, a stage was being prepared on the roof for international star Lila Downs, while an electric jazz group was setting up in the main foyer. Puccini's Tosca, traditional Indian dance and local Mexican fusion bands are also on the billing. Every courtyard, staircase and vestibule invites the possibility of performance.*

Intensity (May 2018)

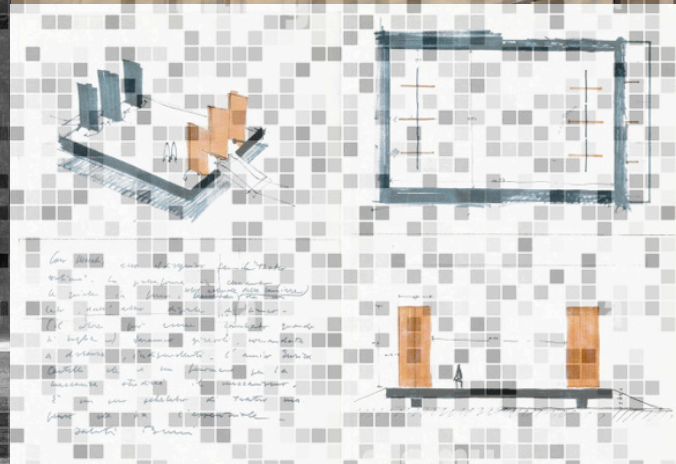
32 See description text by the project team. Anon. "Centro Cultural Teopanzolco / Isaac Broid + Productora" in Archdaily. Site visited 02.09.2022. <https://www.archdaily.cl/cl/883745/centro-cultural-teopanzolco-isaac-broid-plus-productora>

33 Beaumont, Eleanor, *Pyramid scheme : Teopanzolco Cultural Center in Cuernavaca, Mexico, by Isaac Broid and Productora*, Architectural Review, Issue 1451 Intensity (May 2018)

Figure 26, 27 & 28. Galerie der Gegenwart. Oswald Mathias Ungers. 1996. Hamburg. Germany. / Figure 29 & 34. Teatro Continuo. Alberto Burri. 1973. Milano. Italy. / Figure 30, 31, 32 & 33. Teopanzolco Cultural Center. Isaac Broid + PRODUCTORA. 2017. Cuernavaca. Mexico.



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Arrived to this point, it is time to conclude with an example that maybe can give out a precise output of what it has been intended to specify in the description of this second design strategy or operation.

In 1973, on the occasion of the 15th *Triennale* of Milano in Italy, Alberto Burri designed the *Teatro Continuo* to be located in *Parco Sempione*, a park in central Milan between the *Arco della Pace* and the *Castello Sforzesco*. The rather installation than building, appeared as a structure becoming a true stage consisting of a rectangular raised concrete podium, almost looking like a floating slab, and six rotating side wings on top of it, having one face white and the other black, made of painted steel, and located three of them on one side of the podium and three of them on the other. In here, it is possible to truly see a public ground on top of a podium, becoming a true stage, being to a certain extent as well a Urban Slab proposing a purely geometrical surface for the collectivity, delimited by cut-edged borders. Placed on the ideal axis connecting downtown Milan with Corso Sempione, the Teatro Continuo acted as a piece of scenography as well, framing the Filarete Tower of the *Castello Sforzesco* on one side and the *Arco della Pace* if looking through the wings of the plinth on the other. However, and what becomes truly important in this research is the fact that the *Teatro Continuo* of Alberto Burri, having become an integral part of Sempione Park again from its reconstruction for Expo 2015, twenty five years after its dismantling, it offers itself as a stage machine always ready for use of the collectivity, a free venue in the heart of Milan always ready both for artistic activities and performances related with theater and living arts but as well, and more importantly even, for any independent use by anyone.

2.3 **OVERHANGING - BALCONY**

When British actress Kate Winslet, incarnating an innocent and young Rose DeWitt, opens its arms in the shape of a cross, almost as if she wanted to fly away as standing on the bow of the Titanic, Leonardo Di Caprio, interpreting the young artist Jack Dawson, holds her waist with his arms, securing her body from falling to the ocean. Probably one of the most well-known scenes in the history of cinema, appeared in the 1997 film *Titanic*, was featuring a moment of freedom and happiness of a young lady held by her lover that tilts herself to the immensity of the ocean, slightly overhanging her body into the void.¹ The scene features such a romantic metaphor of what it is felt by someone when being in love, relaying on the notion of the power that her physical position grants to her. An analogous feeling of power can be as well found in political contexts where a person, probably embodying a distinctive role because of being part of a ruling class, addresses a sea of people, of followers, from a privileged position like the one that provides the figure of the balcony.

Rome's pope for example still appears every now and then in all mass media looking out from the balcony on the main facade of St. Peter's Cathedral, while throwing a speech to the faithful from such a position. It has been as well the case of so many kings, leaders and dictators, that have used the figure of the balcony, a modest portion of ground overhanging the facades of the different palaces or governmental buildings, from where they were talking to their subjects, in order to spread a message, especially previous to the apparition of all information technologies. Spanish dictator Francisco Franco was using the balcony of the Royal Palace that was overhanging in the direction of *Plaza de Oriente*, where the citizens were gathering to listen to him. In June 1940 Benito Mussolini announced from the balcony of *Palazzo Venezia*, in Rome, that Italy was entering the second world war. Italian architect Giuseppe Terragni led a group that made a proposal for the 1934 *Palazzo del Littorio* Competition, which was looking for an idea on how the new headquarters of the Fascist Party had to be, aiming for a monumental definition of the Fascist identity.² Their architectural proposal features a huge curved wall working as the main facade of the building and that rises above the ground, splitting down the facade in two through a gap in the middle in which to place a monumental balcony. From it, the fascist leader was imagined to address the population, in order to fulfill the primary function of such a building, which was to spread information for the continuity of the regime: fascist propaganda. From such a privileged position, the dictator, put in a unique position overhang-

¹ Released on December the 19th 1997, *Titanic* is an American epic romance and disaster film directed, written, produced, and co-edited by James Cameron. Incorporating both historical and fictionalized aspects, it is based on accounts of the sinking of the RMS Titanic, and stars Leonardo DiCaprio and Kate Winslet as members of different social classes who fall in love aboard the ship during its ill-fated maiden voyage.

² Giuseppe Terragni was as well the Architect of Casa del Fascio in Como, Italy, 1932.

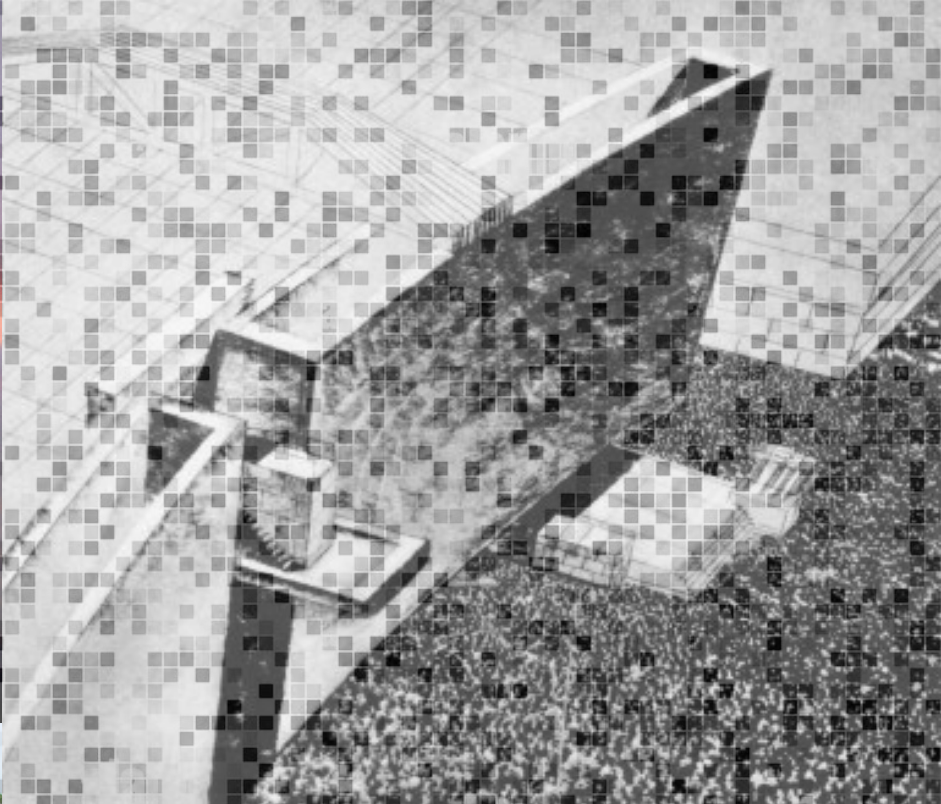
ing the crowd, almost like a divine figure, could have addressed the nation in such a brutally strong manner. Though, the goal of this chapter is not to relate the well-known figure of the balcony to authoritarian ruling classes but yet to make the reader become conscious of its strength and potential power as a possible urban display, it being a valuable asset when thinking on conceiving appropriate public grounds for the collectivity. The figure of the balcony featured here as being related with a sort of totalitarian power is not only linkable with such uses. However, such examples showed in a radical way the potential strength in terms of design that such a figure potentially incarnates even when thinking about urban matters and offering such a place for a political collectivity to inhabit it. This conceptually opposes diametrically to such examples of totalitarian powers. By making overhang a slab devoted to public purposes, these places imagined for the collectivity and hosted by such structure can attain a specific position highlighting the importance amongst the rest of the city and the specific location that the collectivity should inhabit in contemporary cities.

Imagining pieces of ground overhanging the existing one is something that requires a certain building technology. And when making it possible, it has been an admirable fact from its very origin. An early example of such could be the half mythological *Hanging Gardens of Babylon* that have been popularly admired along the years as one of the world's wonder of ancient times. Even if called *hanging* they were more likely to be suspended, but already the fact of elevating not only a current surface, but a planted garden, made of such an imagined artifact or structure an attraction for people's imagination. Amongst an interpretation of the Lighthouse of Alexandria or the Great Pyramid of Giza, the representation of the Hanging Gardens of Babylon by Dutch mannerist painter Maarten van Heemskerck in the 16th century, is said to be the oldest known imaginary reconstruction of such structure from historical depictions. In the right upper corner of the engraving, a Ziggurat-like building composed by three squared planned floors hold one on top of each other by a system of perimetral arcades.³ On the top level, a leafy forest artificially planted on the slab of the last floor appears, reminding of the myth of the hanging gardens that, until now, is still kept away from scientific confirmation nor total denial of its historical reality. Another important representation on the Hanging Gardens of Babylon came in 1679 and appeared at German Jesuit scholar and polymath Athanasius Kircher's publication *Turris Babel*.⁴ In it his goal was to show how modern science and new constructive

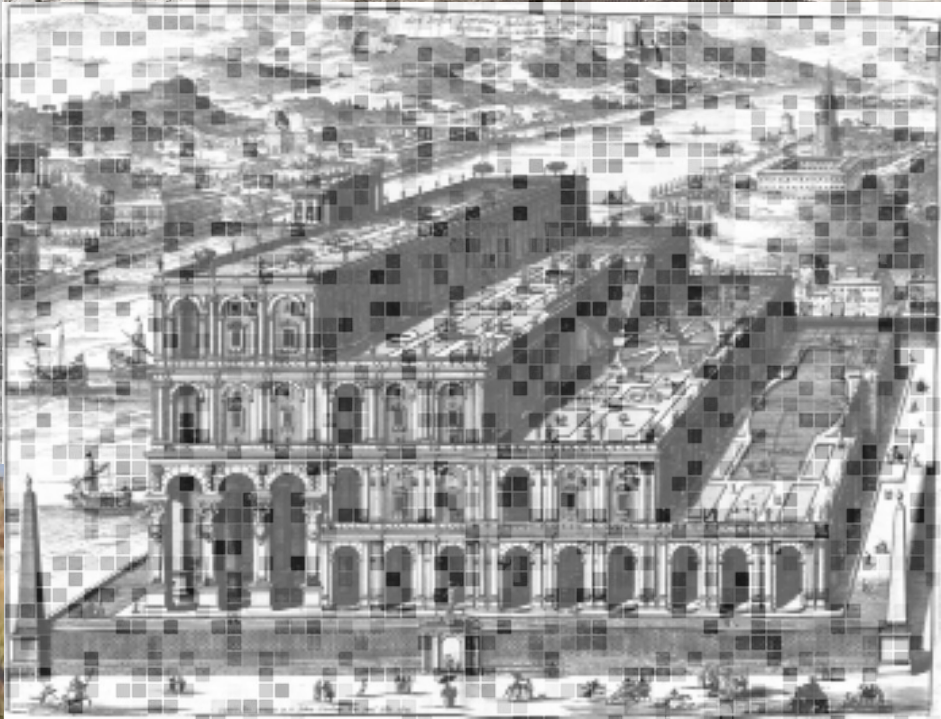
3 See the characteristic terraced geometry of a Ziggurat of the Ziggurat of Etemenanki for example. 14th-9th century BCE.

4 Gargiani, Roberto, *Plates-formes urbaines, de Hénard à Perret*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012, pp. 671-676.

Figure 1. Scene in "Titanic." James Cameron. 1997. Movie / Figure 2. Pope Francis I speaking to his audience at St. Peter's square. 2019. / Figure 3 & 4. First Francisco Franco, second Benito Mussolini both Spanish and Italian dictators waving from their balconies. First half XXth century. / Figure 5. Scene of the movie "Alexander." 2004. Oliver Stone. / Figure 6. Proposal for Palazzo Littorio. Giuseppe Terragni. 1934. Rome. Italy. / Figure 7. Babylon. Maarten van Heemskerck. XVIth century. / Figure 8. Hanging Gardens of Babylon. Athanasius Kircher. 1679. *Turris Babel*.



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methods and styles supported the Biblical narrative in the Book of Genesis. The representation of the Hanging Gardens consists in a multilevel complex constituted by a cascade of terraces whose floors were planted with greenery.

Even Hollywood has featured the Hanging Gardens of Babylon several times. In the 2004 movie *Alexander* for example, a Colin Farrell incarnating Alexander the Great can be spotted in front of a background constituted by a recreation of the city of Babylon amongst which there is the Ziggurat of Etemenanki or the Hanging Gardens for example. Paint, cinema, but as well many other disciplines like for example architecture can be fed by such imaginative displays based on myths, legends, demonstrated past facts or even invented realities for developing and designing a future to come.

The 1916 competition for the *Haus der Freundschaft* or House of Friendship in Istanbul brought to light the contribution by German architect Hans Poelzig.⁵ His design for it proposes a *series of cascading terraces [...] outcropping the Istanbul's skyline* which constitutes a clear exercise on artificially constructing ground.⁶ The terraces are planted with greenery and escalate towards the sky, following a strictly rational plan articulated on a slightly tilted grid that proposes radical geometric boundaries to the building. The expressionist architect proposed such a particular design facing the programmatic requirements of the competition, which was asking for a *multi-purpose complex able to host various cultural activities with spaces for concerts, exhibitions, festivals as well as a library and a café*.⁷ Actually, when envisaging a project for a German building in Turkey, Poelzig came up with such a *deeply imaginative* proposal trying to find a common language between east and west.⁸ And about what interests this research in particular, such project is a great example of a will to deliver open public spaces for a big variety of users and visitors. To use the roof of the building as a very public part of the complex, making part of its design all this planted grounds, is bringing to the complex a high degree of comfort and identity. This cascading landscape of artificially generated public surfaces was defined by architectural historian Kenneth Frampton as a true horizontal *megaform*, which, according to Frampton, is a large form extending horizontally, and oriented towards a densification of the urban.⁹

⁵ This building meant to celebrate the alliance between Germany and Turkey was never built and Hans Poelzig didn't win the competition neither. See Biraghi, Marco; Poelzig, Hans; Friemert, Dorothee; Wachter, Gabriela, *Hans Poelzig : Architektur 1869-1936*, Vice Versa Verlag, Berlin-Kreuzberg 1993.

⁶ Fabrizi, Maria Bruna, *The « Haus der Freundschaft » (House of Friendship): a Megaform in Istanbul by Hans Poelzig (1916)*. Site Visited 01.02.2022. <https://socks-studio.com/2015/07/19/the-haus-der-freundschaft-house-of-friendship-in-istanbul-by-hans-poelzig-1916/>

⁷ Ibid.

⁸ Ibid.

⁹ Kenneth Frampton talked about this project in his lecture titled "Megaform as Urban Landscape" at the 1999 Raoul Wallenberg Lecture at the University of Michigan. More in particular he defines the megaform as capable of inflecting the existing urban landscape as found because of its strong topographical character, not being a freestanding form but rather insinuating itself as a continuation of the surrounding topography.

In a way, the myth of the Hanging Gardens is used in this research as a concept under which several architectural proposals of overhanging planted slabs can be collected. A myth that, sometimes, has been tried to be constructed in reality. A very impressive built example of *Hanging* gardens could be considered Kevin Roche and John Dinkeloo 1968 Oakland's Museum in Oakland, California.¹⁰ The architects proposal is resulting from a quite deep reflection on the several programmatic needs, the origins of the site and the situation of it in downtown Oakland with possible future growth, and with what such things implied socially. The resulting building is an ensemble of terraced new artificial grounds planted with greenery and imagined for public uses, that wants to *play a vital part in the downtown renewal (serving) its purpose best by being a meeting place as well as a museum*.¹¹ In a time where the design of museums was in the spotlight as not responding to the comfort, convenience or psychological needs of visitors, the architects proposed, by converting the whole roof in an overhanging terraced landscape of gardens, this very intricate but smart solution where the roof of some galleries become the terrace of another. All functions in different levels are interconnected by pedestrian paths *each area open(ing) directly onto lawns, terraces, trellised passages, and broad flights of stairs*.¹² Like this, a full new artificial landscape of greenery has been growing and developing with time over the whole building, creating a magnificent garden. Landscape architect Dan Kiley was commissioned to lay out the terraced planes on the new public grounds using the roof of this reinforced concrete-and-glass building¹³. Local landscape architect Geraldine Knight selected the plantings for the scheme so they would fit the local climatological and ecological conditions.¹⁴

When thinking of a more domestic built example of *Hanging Gardens* in which a collectivity of people resides, being a building that works as a sort of domestic garden that stages the way in which the inhabitants spend their everyday life, *Espai Verd* in Valencia, Spain, a reinforced concrete building conceived as high multi-family dwelling block back at the beginning of the 1980s, is composed by a modular system in space that allowed to imagine a cascading landscape with suspended artificially-planted-on-the-slabs gardens for every family inhabiting the block. Conceived by CSPT studio, led by Antonio Cortés Ferrando, the building opened from 1991 onwards, its construction having been achieved by a cooperative system between the future owners of the apartments. Situated in the outskirts of the city, the architectural proposal is linked very much to the agri-

¹⁰ Futagawa, Yukio; Miller, J. Irwin; Hitchcock, Henry-Russell, *Kevin Roche, John Dinkeloo and Associates, 1962-1975*, Office du Livre, Fribourg 1975.

¹¹ Roche, Kevin; Dinkeloo, John, *The Oakland museum*, Description text at their website. Site visited 02.09.2022. <http://www.krjda.com/Sites/OaklandInfo1.html>

¹² Ibid.

¹³ This north-American landscape architect was as well the responsible for the design of the gardens at La Défense, the business district to the west of Paris.

¹⁴ This information is according to what The Cultural Landscape Foundation published in its website. Site visited 02.09.2022. <https://www.tclf.org/landscapes/oakland-museum-california>

cultural fields that surround the city of Valencia becoming like this a site-specific artifact that dialogues with the urban fabric and the landscape. Having again this time as the main characteristic of such an architecture the integration of nature as part of the building, it shouldn't be neglected the fact that for such nature to grow, a constructive system capable of containing vegetation was developed as a terraced ensemble of concrete slabs that could recall multiple references to works of Moshe Safdie, Walden 7 of Ricardo Bofill or even works of José Antonio Coderch.¹⁵ But, in addition, and especially when going down to the domestic scale, the fact that this time the main function of such building is housing, it recalls the lineage of referents starting from Henri Savage's terraced buildings in Paris like for example the one of *Les amiraux* with a public swimming pool in the middle and constructed with sanitary and hygienic purposes between 1922 and 1927. Following such referents there could be hundreds of cases along the list, but it is worth mentioning 1923 Adolf Loos' cascading terraced landscape of the *Grand Hotel Babylon*, with its direct reference to the myth of the hanging gardens, or even the pyramid-like buildings constituting the beach side resort at *La Grande Motte* in southern France, reminding pre-Columbian plateaus and pyramids in South America - such the ones of Teotihuacan in Mexico - as its architect Jean Balladur mentions at some point, and that becomes very visible in the well-known postcards of French photographer David Liaudet.^{16,17,18}

As seen, planning terraced landscapes as new grounds for public uses is a strategy that complements and allows for building and creating indoor spaces, necessary for serving specific programs and needs, but without forgetting to propose comfortable and convenient spaces for the collectivity, for communal or public uses. The fact of conceiving Oakland's museum's roof as a supplementary artificially vegetized meeting and gathering place open to the public in the United States is analogous to what Cortés made for the cooperative of owners in Valencia, offering as well a very big proportion of artificially constructed communal green grounds along the complex. Because of trying to optimize space to the maximum when building an extra structure in a green plot being a public park, the goal of Argentinian architect Emilio Ambasz proposing a terraced green land-

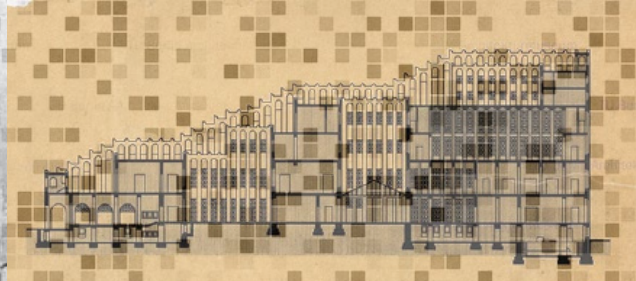
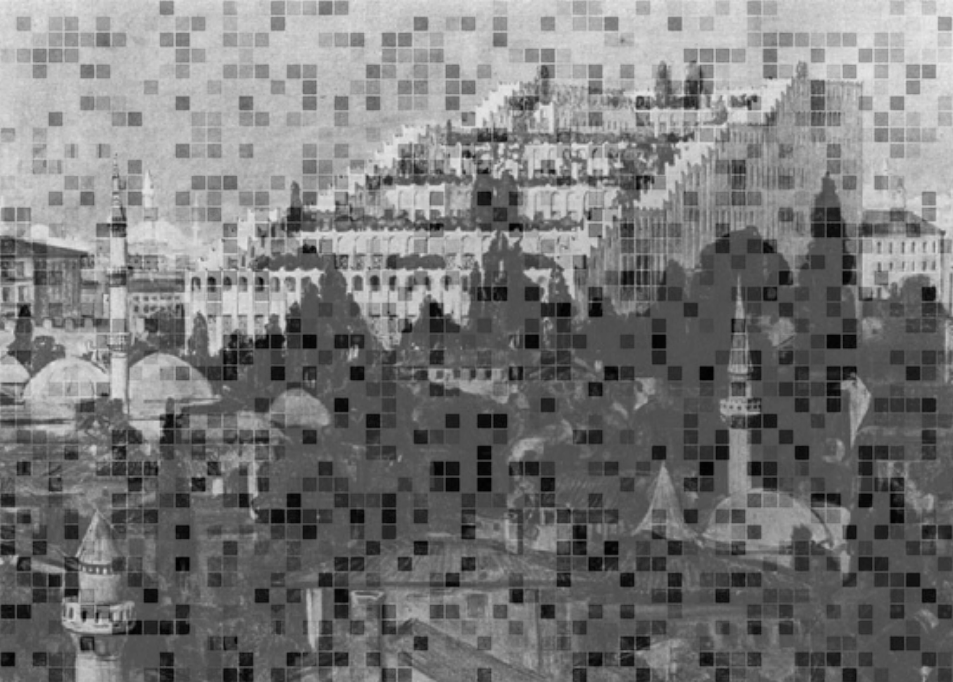
15 Calleja Molina, Manuel, *Nature and concrete. Espai Verd*, En Blanco. Nº 28. Texturas en Hormigón. Valencia, España. (2020) pp. 140-146.

16 Adolf Loos presented the project at Salon d'automne, an art exhibition held annually in Paris since 1903. See Fabrizi, Maria Bruna. *The "Grand Hotel Babylon" by Adolf Loos (1923)*. Site visited. 08.03.2022. <https://socks-studio.com/2016/11/05/the-grand-hotel-babylon-by-adolf-loos-1923/>

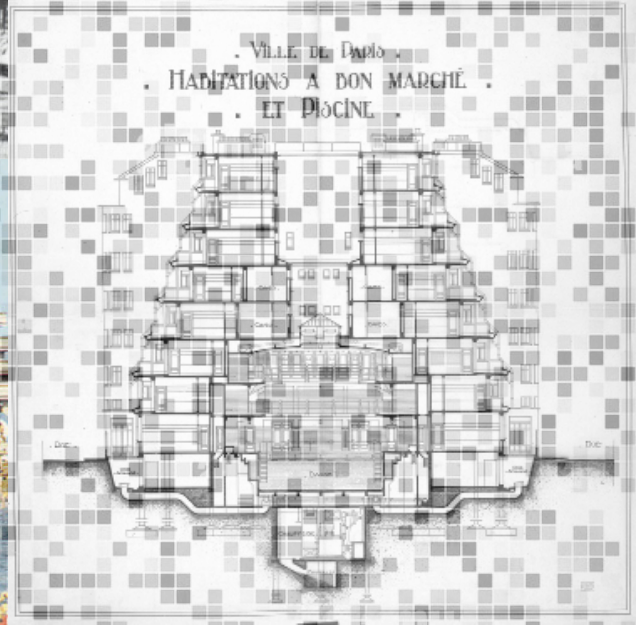
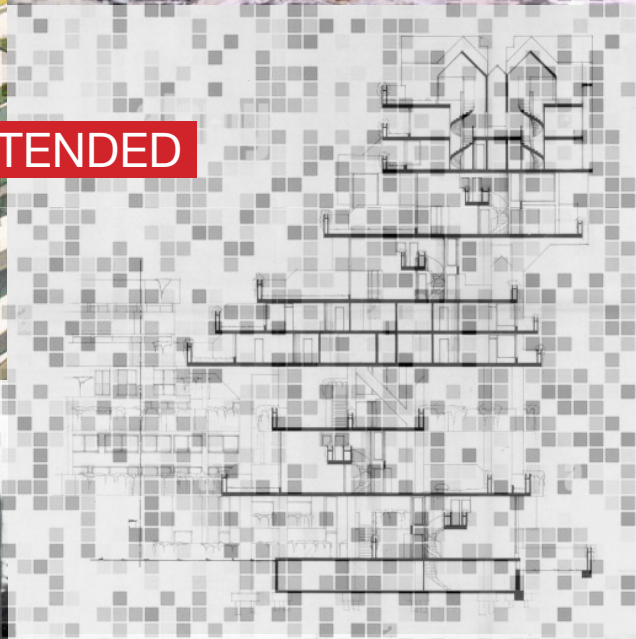
17 Prelorenzo, Claude; Balladur, Jean; Picon, Antoine, *L'aventure du balnéaire : la Grande Motte de Jean Balladur*, Parenthèses, Marseille 1999.

18 Toulhier, Bernard, *Tous à la plage! : villes balnéaires du XVIIIe siècle à nos jours*, Lienart, Paris 2016.

Figure 9 & 13. Competition proposal for "Haus der Freundschaft." Hans Poelzing. 1916. Istanbul. Turkey. / Figure 10. Oakland Museum. Kevin Roche & John Dinkeloo. 1968. Oakland. California. USA. / Figure 11. Grand Hotel Babylon. Adolf Loos. 1923. Nice. France. / Figure 12. La grande Motte. Jean Balladur. 1962-1975. France. / Figure 14 & 15. Espai Verd. CSPT Studio. 1991. Valencia. Spain. / Figure 16. Les Amiraux. Section. Henri Sauvage. 1922-1927. Paris. France.



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scape on top of 1995's new building for the municipality of Fukuoka in Japan, was to not lose any area from existing public equipment of the park, thing that, in a way, can be seen as well as an analogous example to the previous ones.¹⁹ Apparently because of a high occupation of natural land and as it is explained in the website of the architect, *the city of Fukuoka, Japan, desperately needed a new government office building, yet the only available site was a two hectares public park in the center of town. (But) When news emerged that this potential new structure would be located upon the last remaining green area in the city, the citizens of Fukuoka erupted in protest (and) Ambasz won this commission by successfully achieving a reconciliation between these two opposing desires: maintaining the original size of the park while providing the city of Fukuoka with a powerful symbolic structure at its center.*²⁰ The garden terraces stepping up the facade of the building re-offer to the city of Fukuoka a communal space as a park for public uses.

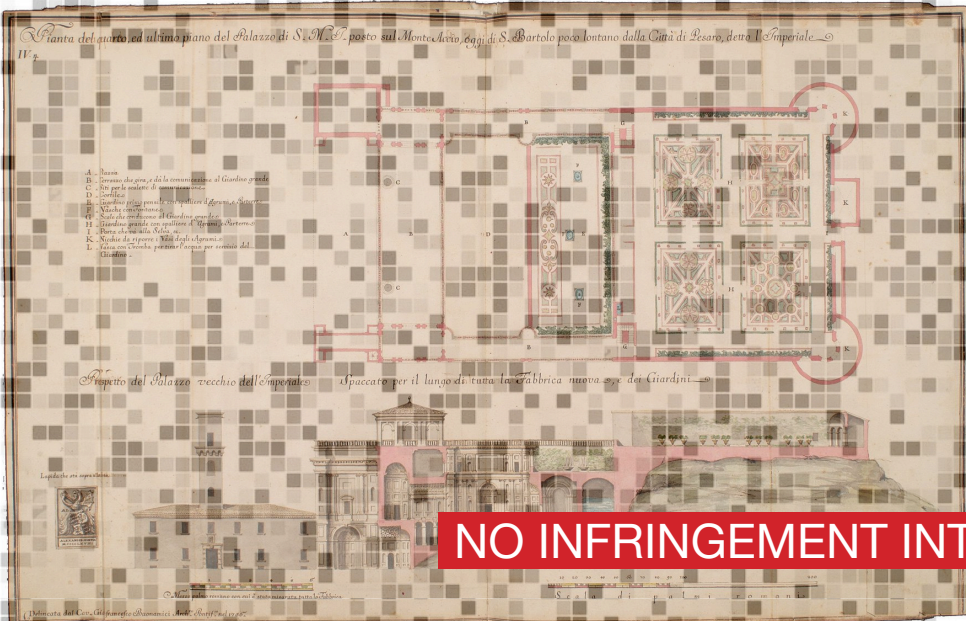
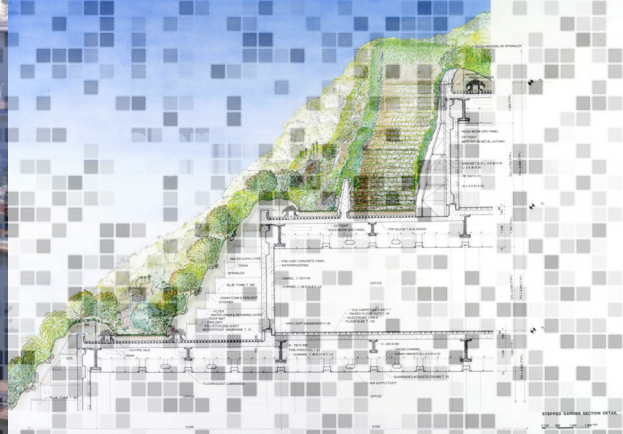
To generate these extra pieces of ground in an artificial way to offer them back to collectivity, used amongst other things for diversion and recreation, generating comfort in the city through designing convenient spaces for leisure, is something that already previously in history has been developed in the private scale. However, and even if these examples being historic buildings or palaces that counted with private terraced gardens conceived for nobles and not really for the collectivity, many things and design features can be extracted from such examples whose size is usually very exaggerated for the use of a single person or a single family and which some of them have even become over time open places for the public. By this it is referred here the big quantity of examples that, during Renaissance times in the Italian regions of Tuscany or The Marches, and because of the hilly topography that characterized them, consequent pieces of ground got constructed or re-arranged artificially in order to offer additional gardens to existing *palazzos*. It has been the case for example of *Villa Imperiale* in Pesaro that, even if its origins go back to 1469, it wasn't until the sixteenth century that an additional wing got built *perched on the hill owing to a terracing system and (hosting) a large number of open spaces: loggias, gardens, and courtyards, ideal places for the leisurely activities of dukes and their guests.*²¹ From the biggest garden, that was built having rearranged into a flat surface the top of the adjacent hill, one is able to see over the roofs of *Villa Imperiale* and stare at the surrounding landscape from a privileged position. Also, and in the historical region of Montefeltro, in The Marches, many ducal *palazzos* were counting with adjacent gardens. In the city

19 Irace, Fluvio; Portoghesi, Paolo; Ambasz, Emilio, *Emilio Ambasz : una Arcadia tecnologica*, Skira, Milano 2004.

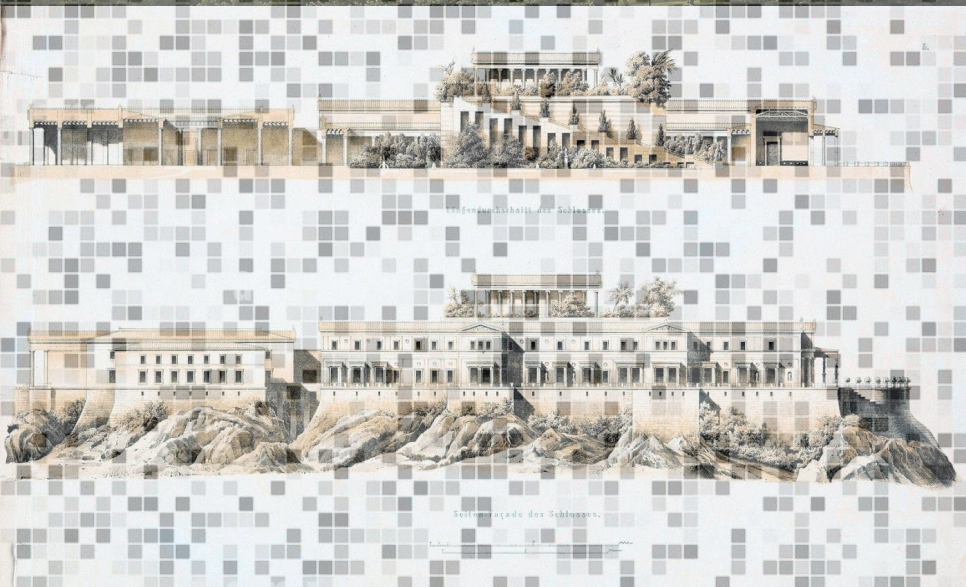
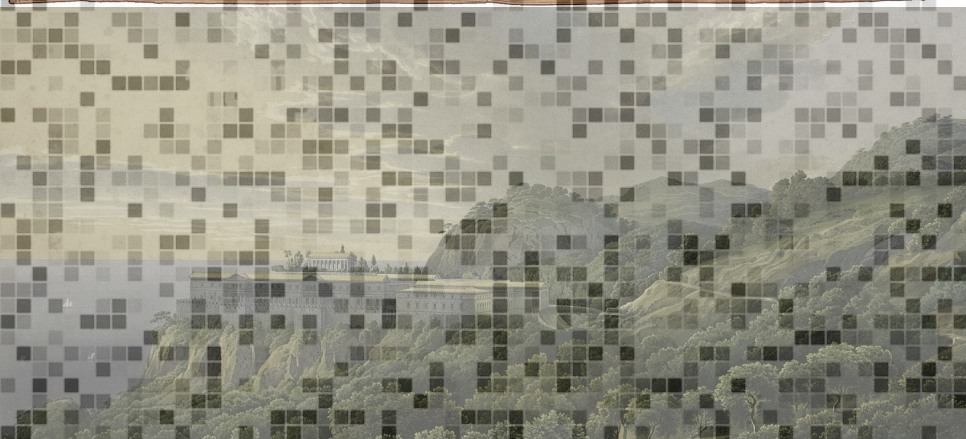
20 See description text at Emilio Ambasz website. Site Visited 02.09.2022. <https://www.ambasz.com/fukuoka-prefectural-international>

21 From the description text at the official website of Villa Imperiale of Pesaro. Site visited 02.09.2022. <https://www.villaimperialepesaro.com/history>

Figure 17 & 21. Fukuoka Municipality Building. Emilio Ambasz. 1995. Japan. / Figure 18 & 22. Villa Imperiale Pesaro. 15th-16th century. Italy. / Figure 19, 20 & 25. Orianda Palace. Karl Friedrich Schinkel. 1837. Oranda. Crimea. / Figure 23 & 24. Palazzo Ducale Garden. 16th century. Gubbio. Italy



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of Gubbio for example the palazzo Ducale counts with a garden conceived as an artificially built piece of ground, mounted on some substructures and dedicated for the leisure of the inhabitants of the palazzo, offering an outdoor space planted with greenery and with a fountain for a *grandissima recreazione*.²² Even if nowadays there is no fountain anymore, the floor plan of 1631 shows so, and the supply of water was made through a pipeline placed in the spaces above the building where renaissance architect, sculptor and painter Francesco di Giorgio is supposed to have made a big tank by using some existing structures. After Tsar Nicholas I offered in 1837 *Orianda* to her wife, a rocky plateau five hundred meters above the Black Sea, near Yalta, on the Crimea peninsula,²³ she asked German Architect Karl Friedrich Schinkel to design there for her a summer residence in classical style, similar to the Charlottenhof Palace in Sanssouci, which Schinkel had built in 1826 for her brother, Prince Frederick William IV. The *Orianda* plateau had already a very privileged position, overlooking the countryside and the Black Sea from there like the strong representations of Schinkel show. Conscious of it, the design for this never-built-palace counted with a raised part in the heart of the complex proposing as a belvedere temple mounted on an artificially created ground, a cubic volume designed for hosting at the same time a museum of Crimea and the Caucasian provinces. In the perspectival section drawings of Schinkel is possible to see how he planned on the thickness of the artificially made new ground hosting the belvedere temple, reserved for planting vegetation. On both sides of the cubic volume used for suspending the new belvedere planted with several trees, straight stairs with resting platforms let to the terrace on the roof, letting the temple stand in a *hanging garden*.²⁴

As it were a stranded ship on top of a rocky hill, *Casa Malaparte* appears in an analogous way as Orianda's Palace was conceived on the rocky plateau (saving the differences in scale, style and ownership) this time facing a Mediterranean sea that has probably not been shown as powerfully that many times previous to Jean-Luc Godard's 1963 movie *Le Mépris*. Located at Capri's *Punta del Masullo*, the house overlooks Salerno's gulf from once again such a privileged location. But what increases the interest on such a structure especially in this research is the way in which the house is conceived. *Casa Malaparte* is a Villa that is mainly constituted by its roof, designed and used as a terrace whereas the bedrooms, living room, kitchen and rest of domestic rooms are located in the volume that is supporting it, below the terrace. Using ground as one of the most primary components to create space, Adalberto Libera designed an inverted pyramidal stair-

22 Isabella d'Este wrote a letter to her sister-in-law Elisabetta after her visit to the palazzo in 1494. "Lo aparato del palazzo e molto magnifico – et ha un giardinetto con una fontana in mezo de grandísima recreazione." Extracted from description text. See site of Ministero dei beni e delle attività culturali e del turismo. Site visited 02.09.2022. http://www.monumentumbria.beniculturali.it/index.php?option=com_content&view=article&id=36&Itemid=315&lang=it

23 Crimea peninsula is a territory politically disputed over the last 8 years between Rusia and Ukraine and under so much pressure in the actual war.

24 Schinkel, Karl Friedrich; Jan Philipp, Klaus, *Karl Friedrich Schinkel: Späte Projekte = Karl Friedrich Schinkel: late projects*, Edition Axel Menges, Sonderausg. Stuttgart 2014.

way leading to the imposing rectangular roof terrace.²⁵ The radical shape of the ground floor of the house as a sustaining volume makes of the generated usable roof above an elevating geometric ground that seems to be somehow overhanging over the organic lines of the landscape. Its clearly defined boundaries, especially in the absence of any fences, work towards the illusion of having a floating piece of artificial ground suspended above the natural site. When accessing on top of it, the space is dilated to the infinity of the landscape together with the sea and the sky, having a sensation of belonging to the surroundings but from a safe concealed space. The roof of the house is an actual stage overhanging the landscape. No building is to be put on top of it, but the user, the inhabitant. The fact that Godard filmed *Le Mépris* in casa Malaparte broadly proofs it as a stage. It is extremely clarifying as well the fact that the movie tells the story of a movie making as its main plot. In his adaptation of the 1954 novel *Il disprezzo* of Italian writer Alberto Moravia, seems like Godard was very much aware that Casa Malaparte, since was already a stage in itself, would be the perfect location to film scenes of fictional movie scenes. Furthermore, and even when in the movie there is not a movie set filming a specific scene on the roof terrace, it still is a stage. When Brigitte Bardot playing the young and beautiful Camille sunbaths alone and naked on a corner of the terrace, the terrace is still a stage.

Such an artificially created surface from where to overlook the vastity of the landscape and the sea can be actually seen as a balcony as well, due to its uniqueness, to its privileged position, overhanging on the landscape, being a lifted portion of ground staging a particular place in space. Far from the totalitarian use of balconies featured previously at the beginning, sustaining the idea of the balcony as a place from which to exert publicly an impositive power, the sense of balcony that Casa Malaparte's roof evokes has more to do with a broader definition of it, with a wider conception in terms of its scale, with a more free and open use, enlarging the range of activities that can be undertaken from it. Examples like the traditional staging of Shakespeare's *Romeo and Juliet* show a romantic use of the balcony that stages the woman as a unattainable goal. Paintings like 1868 *Le balcon* from Edouard Manet show a discreet and delicate use in which the game of seeing and being seen in the city is combined in a subtle way. Or even other paintings like 1877 *Rue de Paris, temps de pluie* of Gustave Caillebotte show a more democratized use of the balcony as rows of them line the facades of the resulting blocks of the restructured Paris by Georges-Eugene Hausmann. When understanding the city as a collectivity of citizens, it is possible to conceptualize a passage from a privative and artificially made piece of ground both naturalized or non-naturalized that has been lifted in the space, overhanging its surroundings, into an artificial ground made for the collectivity. An actual collective balcony, a place from where not only overlook together and communally the surroundings but that stages the importance of the activities carried out there. To understand a kind of urban slab conceived having in mind metaphorically the figure of the

²⁵ The house was imagined together with client Cruzio Malaparte, that decided to live a more bohemian lifestyle separated from civilization and in direct touch with nature.

balcony in order to design a communal one that stages the communal life in a position of power, not to exert it but yet develop it. Another strategy on how to conceive an artificial public surface for collectivity. The concept of *platea communis* was already used in 1203 for referring to Gubbio's town hall square, a still existing medieval structure that proposes a built public slab on top of monumental vaults - *Voltone* - and on which still today multitudinous events and celebrations like *Festa dei Ceri* - Saint Ubaldo's Day - happen every year.²⁶ As well the *Adelphi* complex in London from 1768-74, designed and executed by the Adam brothers, even if proposing an ensemble of private houses that were aiming to transform a slum into a fashionable quarter, proposed as well in addition a terrace in front of the houses overlooking the River. Such terrace acted like a belvedere offering the new citizens of the estate a broad view over the Thames, becoming like this the first great river-side composition in London. It was an "*unprecedented attempt to create a large and entirely new district of elegant housing raised up by some extraordinary engineering on a series of vaulted warehouses [...] to create an even ground level above.*"²⁷ This place, that originally was known as the Royal Terrace, and later the *Adelphi* terrace, was introducing a new artificial ground in the quarter of public use, where people could have a walk along it, take some rest, or even kids could play. To have offered such public surface to the complex was as well a key point on the success of the estate, transforming a not very appreciated urban area into a place that was not only used and well-liked by the inhabitants but that has been represented several times along the history like for example in the engraving of Benedetto Pastorini, reproduced in the third (posthumous) volume of the Adam brothers' *Works in Architecture* (1822) that shows the *Adelphi* and the Thames riverside, looking east with the rest of the city of London behind. When waiting until the 20th century, it is possible to discover a very special prow-shaped Urban Slab for public uses in Barcelona. Conceived as the Heart of the new *Parc Güell* suburban colony, an artificial sanded esplanade was designed and built by Antoni Gaudí at the beginning of the century, overhanging the site's sloped topography and proposing a view on the city of Barcelona and the sea, almost comparable to what Kate Winslet and di Caprio could see from the Titan-

26 Capannelli, Spartaco; Rossi, Gaetano; Sannipoli, Ettore A., *La Platea Communis e i palazzi pubblici di Gubbio*, Media Video, Gubbio (Perugia) 2013.

27 Such half underground spaces became unfashionable and the vaults beneath became « infamous as a haunt of the poor, the homeless and other outcasts of society ». See Tom, Colin, *The rise and Fall of the Adelphi*, Conference to accompany the Robert Adam London's exhibition of Colin Tom from Survey of London at the Sir John Soane's Museum 23.01.2017. Site Visited 02.09.2022. <https://blogs.ucl.ac.uk/survey-of-london/2017/01/13/the-rise-and-fall-of-the-adelphi/>. The survey of Adelphi was recorded in 1936 at its demolition. See *Adelphi Terrace*, in *Survey of London: Volume 18, St Martin-in-The-Fields II: the Strand*, ed. G H Gater and E P Wheeler (London, 1937), pp. 103-108. British History Online. Site Visited 02.2022. <http://www.british-history.ac.uk/survey-london/vol18/pt2/pp103-108> [accessed 11 October 2022].

Figure 26. Casa Malaparte. Adalberto Libera. 1937. Capri. Italy. / Figure 27 & 32. Town Hall Square. Xlth century. Gubbio. Italy. / Figure 28 & 33. Adelphi Terrace. Adam Brothers. 1768-1774. London. UK. / Figure 29, 34 & 35. Parc Güell. Antoni Gaudí. Beginning XXth century. Barcelona. Spain. / Figure 30 & 31. Le Mépris. Photographs. Jean-Luc Godard. 1963. Movie.



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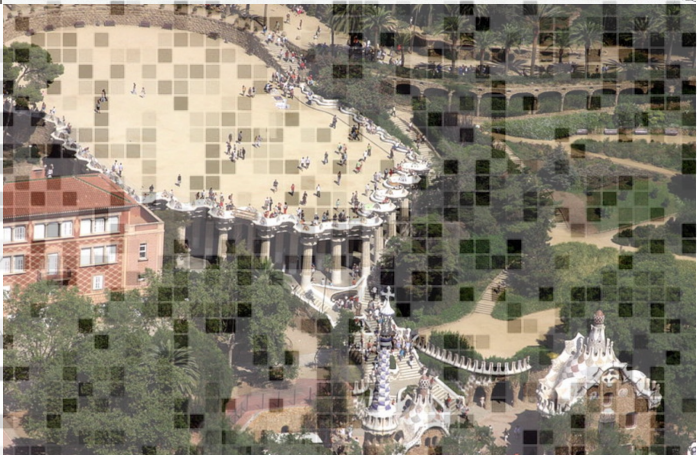
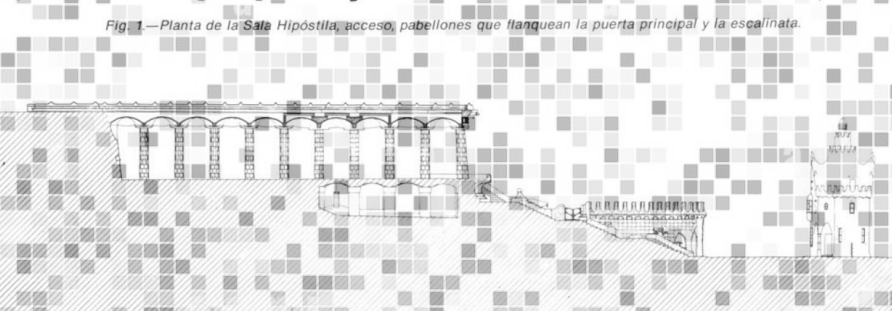


Fig. 1.—Planta de la Sala Hipóstila, acceso, pabellones que flanquean la puerta principal y la escalinata.



ic. When coming back from England, Catalan business man Eusebio Güell asked Gaudí to infuse life into the empty landscape of the lands he bought and to come up and *develop a particular idea of suburban residence* imitating the trendy ideas of Ebenezer Howard Letchworth's garden-city.²⁸ Gaudí projected a master plan for the new quarter that was taking care of the general services that had to be implemented as well as the general system of flows, paths and connections between the different parts of the land plot. All basic infrastructures as well as the communal spaces were constructed, even if the new neighborhood never was a reality. Because of the sloped topography of the site, Gaudí had the idea to plan some substructures below the great esplanade, consisting on a grid of columns, and that made possible to enlarge artificially the flat ground, offering a *large open square for sports, activities, and open air performances*.²⁹ The esplanade, sustained thanks to the colonnade below it then, became really the Heart of the new suburban quarter overhanging the land as the artificially generated new ground it was, offering a place for the collectivity. Furthermore, below the new square, the colonnade was as well rendered public and accessible, proposing a covered market hall. Like this, Gaudí offered an extra public space below the main square, accessible through a monumental stairway from the city. He thought of removing some columns out of the grid of the covered hall in order to propose dilatations of space in three specific points of the hall, providing like this larger spaces amongst the forest of columns, being more functional for the mass of people that would use it. The park was conceived having in mind a *deep human sense, a desire for community spirit*, so by offering this compact but resourceful ensemble of public space, Gaudí was working towards it.³⁰ In a same plot he succeeded to double the quantity of public space, working with the topography, making the spaces accessible and even proposing a functional water tank below still of the colonnade hall, something that, because of the growth in density along the 20th century, it is going to be seen more and more, public spaces using places below others. A particular thing that can be noticed in the design of these spaces meant to be the heart of the community, both, the artificially constructed ground of the main esplanade or major square offered to the collectivity for their activities, as well as the subsequent covered market hall below it, is that the one is depending of the other. Actually the new ground constructed artificially needs the columns in order to stand, but as well, the design of the positioning of the columns is generating a continuous curved line that acts as the boundary of the square. This line it solidifies in the perimetral undulating ceramic bench that acts as the boundary of the higher surface and at the same time as the *crowning glory of the Doric Market hall below*.^{31,32}

28 Solà-Morales Rubió, Ignasi; Català Roca, Francesc, *Gaudí*, Edificiones Polígrafa, Barcelona 1984.

29 Crippa, Maria Antonietta, *Antoni Gaudí, 1852-1926: from nature to architecture*, Taschen, Köln, London, Los Angeles 2003.

30 Casanelles, Eusebi, *Antonio Gaudí ; a reappraisal*, New York Graphis Society, Greenwich, Conn 1967.

31 That is the way in which E. Casanelles defines it. See Ibid.

32 Because of the style of the columns.

During this same period, in 1910 to be more specific, the Belvedere Building, designed by Brazilian architect Francisco de Paula Ramos de Azevedo opened its doors in Avenida Paulista, in Sao Paulo, Brazil. The later called Trianon Belvedere, because of its classical style, got built in the highest part of the extended center of the city, in a special location along the recently built Avenida Paulista, where many started being the big residencies surrounded by wooded lands and owned by a social elite that appeared at the beginning of the 20th century. From the special location where the Trianon Belvedere got built, that was a place where the high society of Sao Paulo could meet the building counted with a big rounded balcony or terrace that was making possible to overlook the *Vale do Anhangabaú* from a privileged position, being it the main north-south axis of the city. The building was hosting cultural events and balls and was the scene of a society that little-to-little through time went slightly opening up to more popular segments of the population. This is probably one of the reasons why the Belvedere of Ramos de Azevedo got demolished in 1950 and in 1951 Eduardo Kneese de Mello e Luís Saia's Trianon Pavilion got constructed as a temporary building for hosting the first International Biennial of Sao Paulo. Few years after, Lina Bo Bardi's MASP, Sao Paulo's Museum of Art, would open its doors in this same exact location.

1957 was the year they demolished the old Trianon, a political center in Sao Paulo where many illustrious careers were launched and many banquets were held on its sun-filled belvedere (practically the only one in the whole city), which lives on to this day in the memories of past generations of children wrote Lina Bo Bardi in his 1967 text *The New Trianon*.³³ She used this introduction to state that this was the *only* place where Sao Paulo's Art Museum of Art could be constructed, *the only site, in view of its special place in the popular imagination, worthy of housing the first museum of art in Latin America*.³⁴ These affirmations already state with clarity the importance that Bo Bardi gave to the political scene and the social collectivity when designing the MASP and that the *heritage of the old Trianon* had to be the base for the new construction on this site. The Trianon was amongst many other things a balcony with a privileged view overlooking the city as much as a place already publicly and politically recognizable to the citizens of Sao Paulo. A stage too, where so many social scenes could take place. And so after several years of political discussions, Lina Bo Bardi got the permission to design the Museum from 1960.³⁵ She explains in her text that *the new Trianon-Museum consists in a demi-buried structure (running parallel to Avenida 9 de Julho), with a raised belvedere on top*.³⁶ The Museum is suspended above the belvedere surface by a massive structure that hangs the box containing it over the ground

33 Bo Bardi, Lina, *The New Trianon*, Steele, Brett (ed.) *Stones and diamonds, Architecture Words* 12. Architectural Association, London 2013. pp. 81-85. Edited version of an article first published in *Mirante das Artes* 5 (September-October 1967)

34 Ibid.

35 Several were the years of political discussions and economical agreements which failed and did not allow the realization of the museum to get started. Finally when the works were allowed, Lina Bo Bardi worked for free, as the secretary of Public Works did. See Ibid.

36 Ibid.

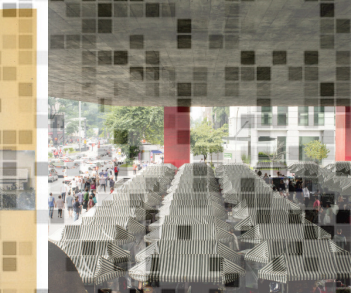
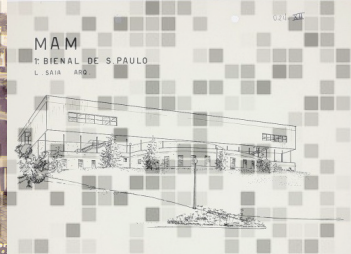
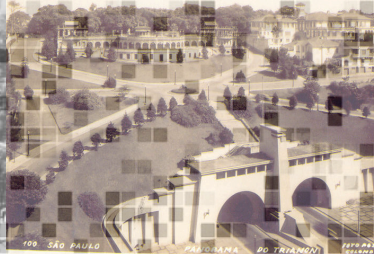
floor. And there are no columns below it, as she wanted it to be. A clear span of seventy meters in the length of the avenue and twenty nine in the depth allows for a column-free belvedere, partly covered by the volume of the museum and partly roof-free, overlooking the city and the sky. The belvedere is an open *plaza*, Bo Bardi claims. But it is actually even more than that. It is an constructed urban slab conceived as a collective balcony and a social stage. With its extremely geometrical boundaries, this public artificial surface becomes a radical piece of ground analogous in its form to the one of Libera in Capri where a multitude of activities and social manifestations can take place. Thanks to the fact that the Museum is placed on a huge pre-stressed concrete-and-glass box suspended above the open plaza, anyone can reach the public surface by walking from the avenue towards the inside of the site, reaching like this even the boundaries of this artificial ground that is overhanging the valley and propose impressive views over the city. As well-known as are the high moral precepts about social justice and collectivity of the architect, she defended the ensemble of the MASP, understanding by it not only the box of the museum but as well the open plaza and the indoor public hall situated below it, half-buried, to conform a *monumental simplicity* understanding the concept of monumentality as everything that was relating to a *sense of collectivity, (that is), a collective consciousness, (...) anything that goes beyond the particular reaching out to the collective.*³⁷

The public and open surface that makes part of the rich but rather simple ensemble of Bo Bardi is not anymore a private roof terrace on top of an exclusive villa in southern Italy, but it has very much in common: the same potential of freedom and spatial dilatation, that, once this roof terrace becomes public and accessible to everyone - children, musicians, artists and even *everyday bad taste* - becomes a truly political urban ground, clearly defined by geometric boundaries but which social potential goes beyond them turning these into porous borders.³⁸ Bo Bardi drew a study for the occupation of the belvedere, featuring an exhibition of children's toys for example. The building of the MASP is a highly relevant example from an urban point of view, related to the evolution of the modern city and the increase of its density and complexity. This new artificial ground, overhanging on top of a volume that hosts a public hall at the same time, offers an amazing view over the city, and has become an important public stage as a collective urban balcony. The space of the public surface is replicated in terms of its area in the lower and in the higher parts of the complex. Below it, there is another surface that hosts the public hall, a multipurpose area that becomes a public interior space whose design was accounting on a constant evolution of the programs it had to host. Above the plaza, two radical rectangular floors have been con-

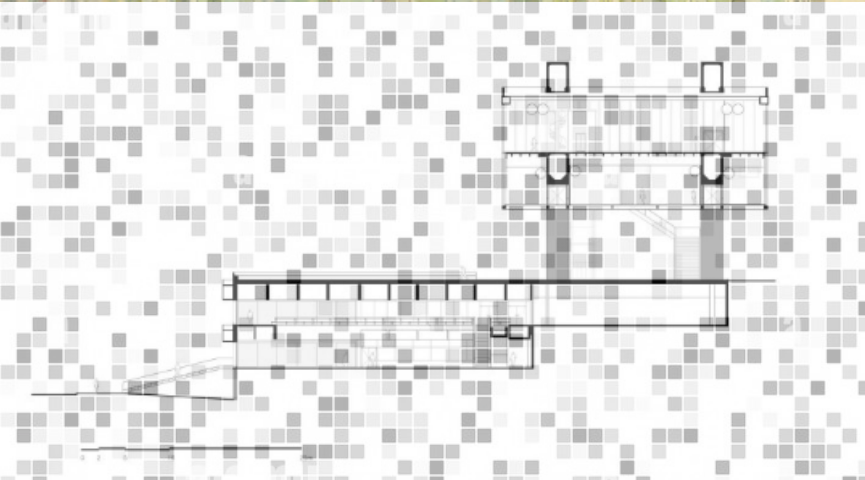
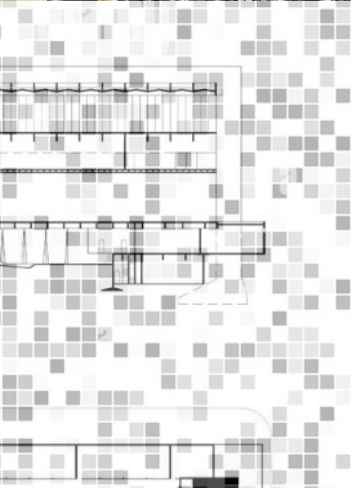
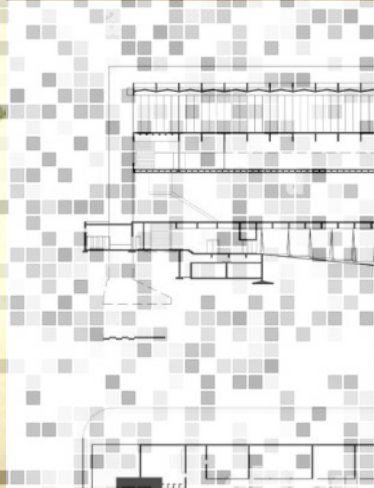
³⁷ Ibid.

³⁸ Distinction between boundary and border the latter being more porous than the former. Richard Sennett.

Figure 36-39 & 42-48. MASP. Lina Bo Bardi. 1967. Sao Paulo. Brazil. / Figure 40. Belvedere Building. Francisco de Paula Ramos de Azevedo. 1910. Sao Paulo. Brazil. / Figure 41. Temporary Trianon Pavilion for the 1st International Sao Paulo Biennale. Eduardo Kneese de Mello and Luis Saia. 1951. Sao Paulo. Brazil.



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structed to host the offices of the museum and the exhibitions hall. Summing up, where before 1960 there was a well-known and highly appreciated belvedere, nowadays there is a multitude of levels able to host a broader quantity of functions in different spaces, all conceived for the public, and amongst which there is still the level of the ground hosting the open plaza. It is a compilation of several surfaces, one on top of each other, like if the surface of the original belvedere is multiplied x times and can be done so still x^n .

2.4

SUPERIMPOSING - FLYING CARPET

As a 1990's child, seeing a young and intrepid Disney Aladdin, riding on his magic carpet above the city, is a thing that has been completely normalized. However, the fact of overflying the city and the landscape on top of a magic flying carpet is an action that encloses the fantastic experience of flying, like birds. It has to be considered that one of the first times where the artifact of the flying carpet appears mentioned, aviation was still for many centuries not invented. In one of the stories of the popularly known as the *One Thousand and One Nights tales*, a collection of Middle Eastern folk tales compiled in Arabic during the 8th and 14th century, prince Husain buys a magic carpet in India with the power of transporting the one sited on it to wherever he wished in the *blink of an eye*.^{1,2} Some other descriptions were featuring a magic carpet where one could sit upon and be caught up by the wind, sailing through the air so quickly. Probably in the nineties, since the world of commercial aviation was completely consolidated, the fact itself of flying was less relevant, but maybe doing it on top of a thin and wobbly carpet, with no seats, no motor nor seatbelt involved even, was the true fantasy. Nonetheless, humans have always wanted to be lifted from the ground, or at least have the sensation of doing so. By doing so, a position of power was acquired, overlooking around from a privilege position, or as well it was believed to be able to reach a certain spirituality getting closer to the sky, as South-American pre-Columbian plateaus and pyramids show, or the obsession of Gothic cathedrals wanting to reach bigger and higher spaces with less and less material, with lighter structures.

The three design strategies addressed up until now, feature always a detachment of the new artificially constructed ground from the original level of the natural ground. In this forth one, the detachment of the new ground is pushed to its maximum, proposing new surfaces that are completely superimposed to the existing ones, this means that they want to be flying over the existing ground, so sustained by the minimum material, to always give the impression of a floating or flying surface. The tale of the flying carpet brought to architecture.

Constructivist artist and architect El Lissitzky's *Wolkenbügel*, German for something like *cloud hanger*, proposes an office building that imagines an "h" shaped floor plan ensemble somewhat floating over Nikitsky's square in Moscow. Thanks to its iron structure, three huge monumental hollow pillars, containing the access stairs amongst other things, sustain the "h"-shaped volume, superposing it over the city and generating like this the weightless character of the project. This 1923-25 designed infrastructure was an attempt to make an architecture directly from the *Proun* series, which were conceived by El Lissitzky from the

1 Russian painter Viktor Vasnetsov illustrated the tales featuring a flying carpet on two occasions.

2 Burton, Richard Francis, *The Book of the Thousand Nights and a Night*, [Reprint ed.] ed. Heritage Press, New York Editions Club 1934.

beginning as interchangers between painting and architecture. The upper floors of the *Wolkenbügel*, developed in 1924, are closely related to the compositional elements of Proun 88, whose sketches date from 1923.³ The large overhangs and the size and audacity of the project make of it quite of an impressive materialization of a dream that human beings has always had, to overfly the ground. El Lissitzky's unbuilt building would have touched the ground really in what is considered a minimum expression of its structure, rising the body of the building over the city, and superimposing these new slabs to the existing ground of the city.

A similar thing happens with another unbuilt proposal, this time for hosting a public institution in the middle of the old city center of an Italian city. This refers particularly to Sicilian architect Giuseppe Samonà's 1967 competition proposal for the Chamber of Deputies in Rome, a project that, inserted in the historic urban fabric of the center of Rome, to be located in the area bounded by *via della Missione*, *Piazza del Parlamento* and *via Campo Marzio*, proposes a series of slabs superimposing the ones to the others. The surfaces design a cascade of suspended volumes above ground and supported on metallic *pilotis*, which program of uses envisaged a library, an archive, two representative apartments, a restaurant and an underground parking garage. *The spatial relationship of the complex is enriched by a system of terraced squares that accompany the successive displacement of the volumes linked to the ground (placing) the restaurant on the top floors.*⁴ This project shows several milestones made possible by the strategy of superimposing the new generated slabs such as an *articulation of the new urban agora and on different levels, the appropriation of the public space of the square, (or) eliminating the cars (...) relocating them in the planned three-story underground parking, and emphasizing the transparency of the pre-existence of the historic city working like this towards the idea of an urban continuum.*⁵

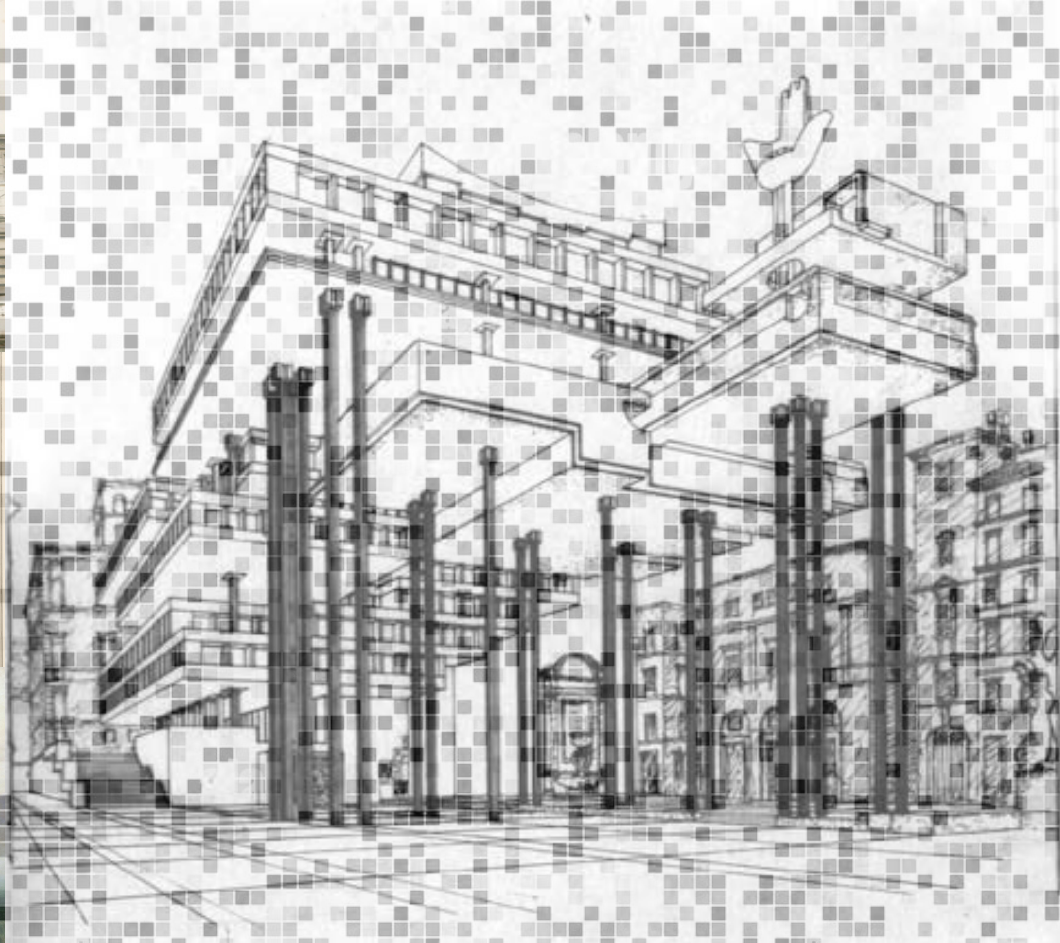
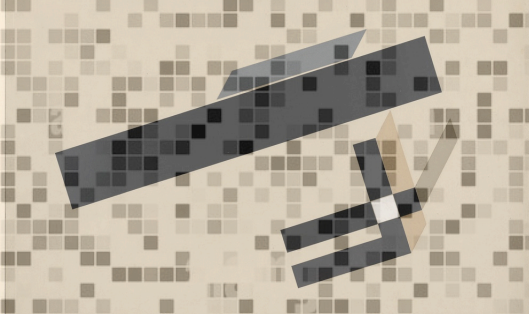
Another monumental structure suspended on the sky is Clorindo Testa's Argentina's National Library in Buenos Aires. The building was projected in 1961 when the competition got organized even if it didn't open its doors until 30 years later. The project consist in a rectangular volume suspended in the air thanks to four concrete legs that contain as well the cores for accessing the volume above. The auditorium, the exhibition hall and the cafeteria are pieces hanging from the main structure. The rectangular volume is offered to the public of the library as a floating reading room, from where it is possible to overlook the city and *La Plata* River.

3 Burgos, Francisco; Garrido, Ginés, *El Lissitzky. Arquitecturas ausentes del siglo XX*, Yale University Press, New Haven, London, 1999.

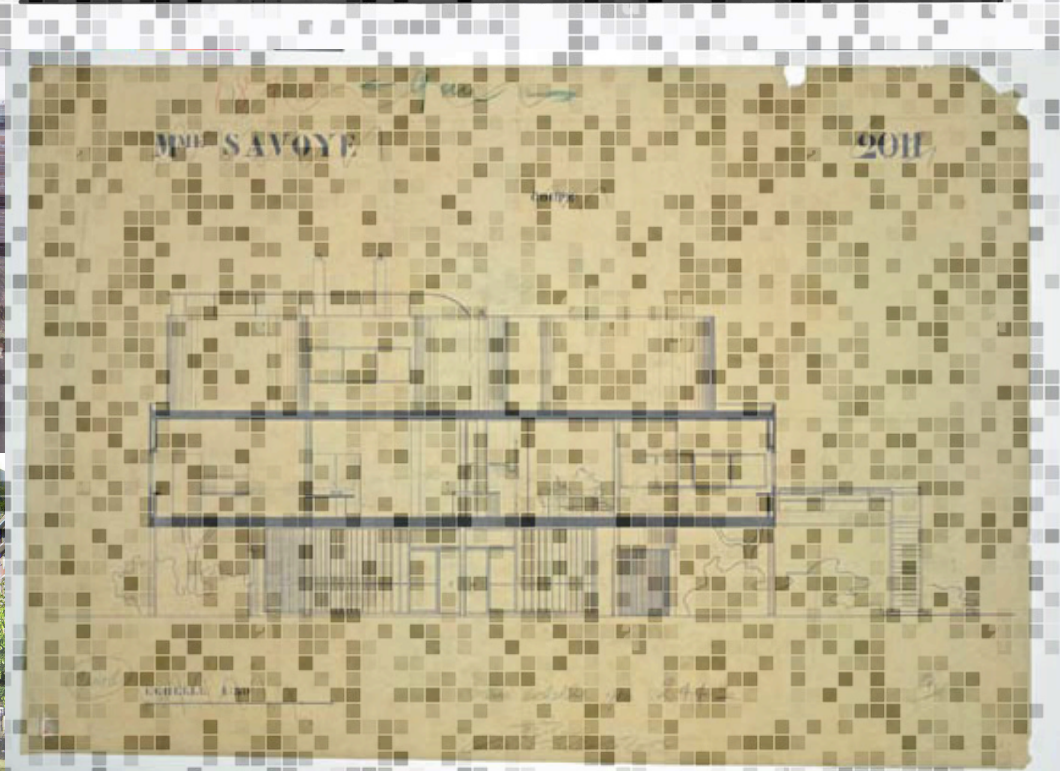
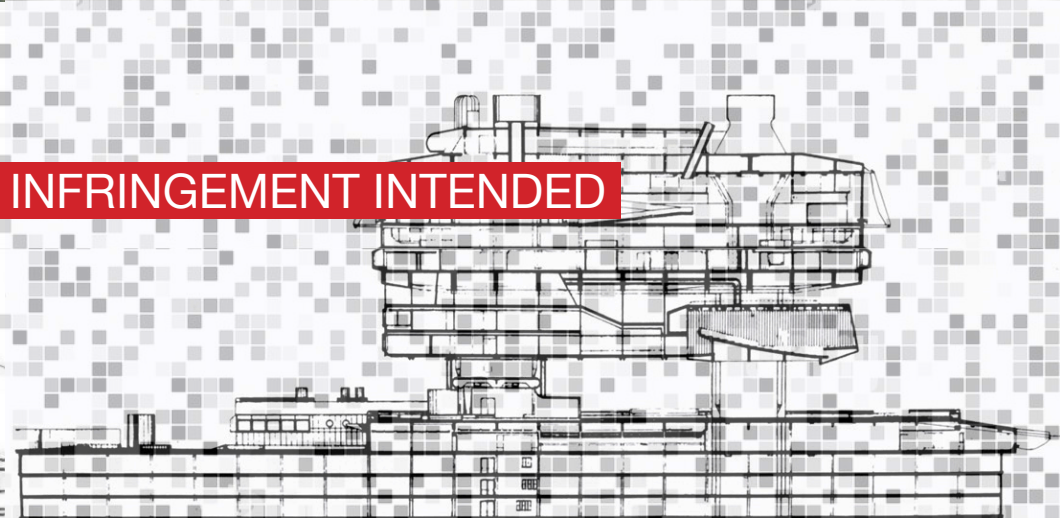
4 Alonso García, Eusebio, *Giuseppe Samonà. Concurso de la Cámara de Diputados. La profundidad del tiempo*, ZARCH 14 (June 2020) pp. 70-85.

5 Ibid.

Figure 1. *Wolkenbügel*. El Lissitzky. 1924. Moscow. Russia. / Figure 2. Proun 88. El Lissitzky. 1923. / Figure 3. Painting. *Riding a Flying Carpet*. Viktor Vasnetsov. 1880. / Figure 4 & 7. Competition proposal. Chamber of Deputies. Giuseppe Samonà. 1967. Rome. Italy. / Figure 5, 6 & 8. Biblioteca Nacional. Clorindo Testa. 1962-1992. Buenos Aires. Argentina. / Figure 9. *Villa Savoye*. Le Corbusier. 1928. Poissy. France.



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Situated in the highest point of the park, the ground floor of the building is liberated and offers a semi-covered large esplanade, integrated with the surrounding park and proposing a frame for any kind of open-air activities. Such a display, even if monumental, has in common many things with *Villa Savoye* of Le Corbusier, and probably the previous ones as well. Both propose again an artificially created new ground, detached from the level of the natural ground, and suspended above it with the help of *pilotis* or other structural elements, superimposing like this the artificial new ground to the natural one. In the case of Buenos Aires, but as well in the unbuilt proposal of Samonà in Rome, this would have been the case too. The fact that the ground floor is not fully occupied, but is liberated thanks to some structural elements, make of it an additional asset that sums up to the new generated surface. There is another advantage which results from having superimposed the new ground above the original one, and is that a car can circulate below the domestic spaces in order to bring the inhabitants to the core of the house for accessing it from below. In the city, the superimposed new urban grounds dedicated for public uses, are, in their origins, having a lot to do with a segregation of the technical functions related with services, as much as with the segregation of vehicular traffic further on along the century. Taking as a base the strategy of the *pilotis*, it is possible to imagine new grounds superimposed to the natural ones that allow for traffic free situations as well as sufficiently raised from the ground not to break the spatial continuity of the existing ground floor, the urban continuum. Le Corbusier wrote about *Villa Savoye* that *if one is standing in the grass, one cannot see very far. Besides, the grass is unhealthy, wet, etc., to live in; therefore, the real garden of the house will not be in the ground, but above the ground, at three meters fifty: it will be the hanging garden whose ground is dry and salubrious, and it is from this ground that one will see well all the landscape, much better than if one had remained below.*⁶

If imagining these statement but in the city, speaking of a public ground instead of a private domestic garden, it could be used completely analogously, stating that the benefits of superimposing a new artificial ground over the ground of the city allows for a position from where it is possible to overlook the city, with ecosystem-controlled conditions for the ground, raised from the original one thanks to the prowess of reinforced concrete.

Becoming less metaphoric and more concrete in the examples, Alison and Peter Smithson imagined together with Peter Sigmond, a system of two superimposed networks, separated ten meters in height the one from the other, for structuring their proposal at the competition held in 1957 for a future new unified capital-city of western Berlin, or *Berlin Hauptstadt*, which they didn't win. Using conceptually the multi-layer structure of *mat-building* the Smithson proposed a project for the city where an inferior network, resting on the natural ground and with a regular layout, handled both road and heavy traffic.⁷ A superimposed layer above

⁶ Le Corbusier, *Oeuvre complète*, Volume 2, 1929-1934.

⁷ Smithson, Alison & Peter, *How to Recognize and Read Mat-Building. Mainstream Architecture as it has*

it with an irregular layout this time, was *intended for local and pedestrian traffic, guaranteeing free space for citizens*.⁸ In this example and through the creation of an *artificial carpet*, considering the concept of the mat-building as an artificial nature, the newly generated surface that was add upon the existing topography, understands *the totality of the center of the city as a public space in itself, unburdened and open*, having the aim of creating a center *calm, urban and even a little bit empty*.^{9,10} So, somehow this project, issued from a segregation of vehicular traffic from pedestrian one, and becoming a new ground floor flying over the existing one thanks to structural means, is as well the outcome of a reinterpretation of traditional streets and squares that have been constituting the public space of cities traditionally, acquiring a new meaning by constructing a new urban scene *both artificial and natural at the time*.¹¹ The Smithson stated that there is chaos at the ground, and that life should be lived in different levels, leaving at the ground just what has to be anchored at the ground but, for everything else, solutions for a relaxed space would be available.¹² This new Urban Slab that was proposing a new pedestrian level in the city, elevated ten meters from the originally existing ground, constitutes an example of superimposing a new public ground on top of the traditional network of streets of the city, allowing to generate places for encounter, commerce, leisure or work, having a perception of the city as an open space with the dominance of long visuals over the horizon *on top of a 120 km/h-city happening below it*.¹³ Being against a possible interpretation of such a new artificial surface conceived as an infinite entity that could extend in all the directions, the Smithson had clearly in mind that *it was vital to have limits again*, and so their unbuilt proposal featured around the city center a line made by tall and curved office buildings that were constituting an unquestionable limit to the extension of this new public ground, allowing it to politically exist as being defined as a limited entity.¹⁴ The notion of the limits are crucial in the understanding of such a superimposed ground in this research, since what is studied along this thesis are clearly defined public artificial grounds that can be appropriated by a collective of citizens thanks to the existence of borders that frame and define such places politically. The concept of the *mat-building* is pertinent here until a certain extent, since what is interesting about it, is its possible parallel definition

Developed Towards the Mat-Building, Architectural Design (Sept. 1974) pp. 179-190.

8 Ortega Vázquez, Estel, *Berlin Hauptstadt: Alison y Peter Smithson con Peter Sigmond*, DPA: Documents de Projectes d'Arquitectura n° 27/28, (2011) pp. 92-99.

9 Ibid.

10 Smithson, Alison & Peter; Chung, Chuihua Judy, *The Charged Void: Urbanism*, Monacelli Press, New York 2005.

11 Ortega Vázquez, Estel, *Berlin Hauptstadt: Alison y Peter Smithson con Peter Sigmond*, DPA: Documents de Projectes d'Arquitectura n° 27/28, (2011) pp. 92-99.

12 Smithson, Alison & Peter, *Ordinariness and light : urban theories 1952-1960 and their application in a building project 1963-1970*, MIT Press, Cambridge, Mass 1970.

13 Ortega Vázquez, Estel, *Berlin Hauptstadt: Alison y Peter Smithson con Peter Sigmond*, DPA: Documents de Projectes d'Arquitectura n° 27/28, (2011) pp. 92-99.

14 Smithson, Alison & Peter, *Ordinariness and light : urban theories 1952-1960 and their application in a building project 1963-1970*, MIT Press, Cambridge, Mass 1970.

as *groundscraper* that, according to American architect Shadrach Woods, while working on the competition of the Free University of Berlin, wrote that *in skyscraper type buildings disciplines tend to be segregated. The relationship from one floor to another is tenuous, almost fortuitous, passing through the space-machine-lift. In a groundscraper organization greater possibilities of community and exchange are present without necessarily sacrificing any tranquility.*¹⁵ In this sense what becomes revealing of such architectures is their condition of horizontal continuity, of a more or less natural and direct deployment along the horizontal axis of space, where transitions are fluid, so is the growth of new urban public surfaces. Another mat-building directly identified by the Smithson, and that could be catalogued as a *groundscape* too, is 1964-65 Le Corbusier's proposal for a hospital in Venice. Such an example becomes useful for understanding the concept of a superimposed artificial surface, identified in this part of the thesis, since it imagines a structure whose ground floor is built on *pilotis*, generating a raised public area in a city, where most of the public grounds are somehow artificially built already, and where admission to the hospital was planned to take place. The historic urban fabric of Venice is somehow the conceptual base for a such a project, where in fact the reinterpretation of Venice squares and narrow streets with their bridges are generating this new grounds with patios above the laguna, acting like a new raised artificial carpet or *tapestry* fulfilling the uses of the hospital.¹⁶ Of course it is interesting to notice as well that there is a kind of module that gets repeated in order to generate this increasingly large *groundscape*, as it is the case in other mat-buildings like it is in the actually built Free University of Berlin 1963 original winning scheme from Candilis, Jossic and Woods, but it is a feature that interests less in this discourse. In this sense, the artificially constructed surfaces superimposed to original grounds, that are looked for in here have as a clear *sine-qua-non* condition, the fact of having clear borders defining the limits of such a new ground and allowing through them to define such new places as framed political stages to be appropriated collectively.

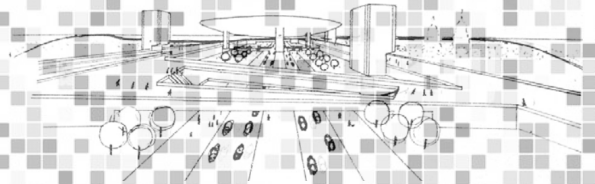
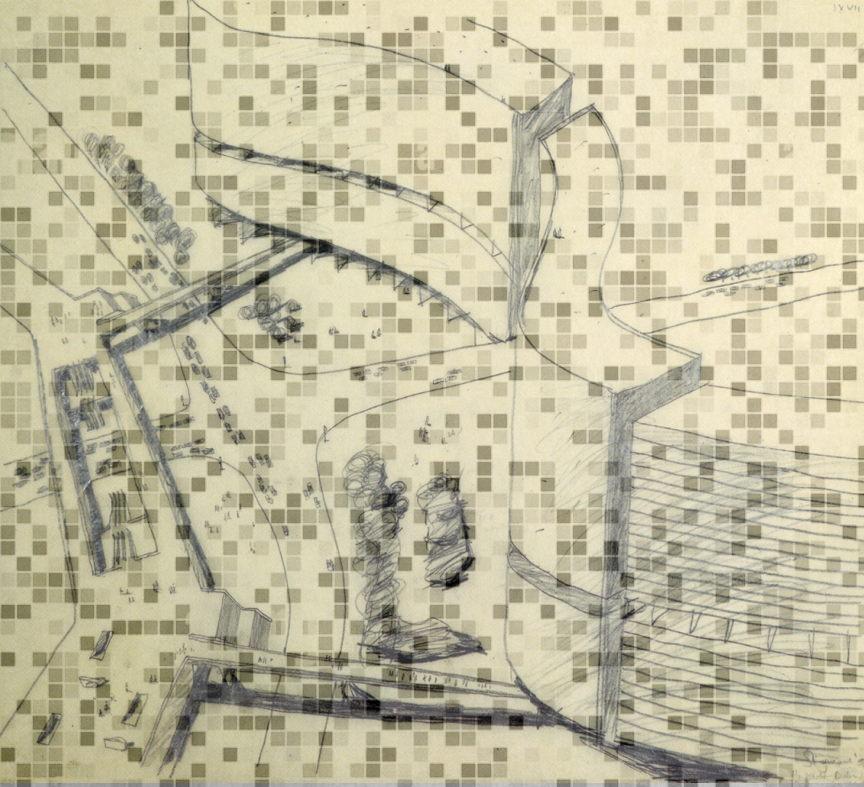
Flying over Madrid's northern rail yard there is Madrid Chamartín – Clara Campoamor railway station. The station, projected and built during 1970-75 by Corrales and Molezún, is a large artificially built new ground on top of the train tracks, superimposed thanks to a grid of big columns that raise the passengers building and the rest of functions 6,5 meters above the level of the tracks.¹⁷ Having as a

¹⁵ Domingo Calabuig, Débora; Castellanos Gomez, Raúl; Ábalos Ramos, Ana, *The Strategies of Mat-building*, Architectural Review n° 1398 (Aug. 2013) pp. 83-91.

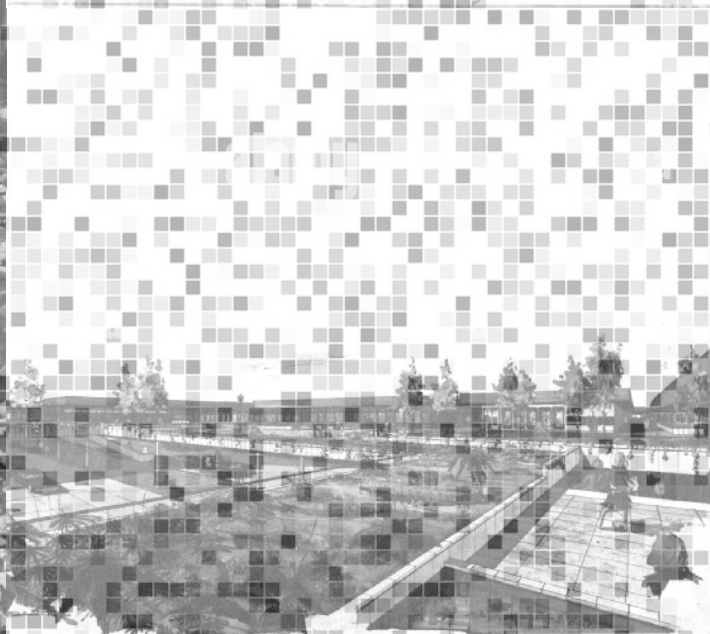
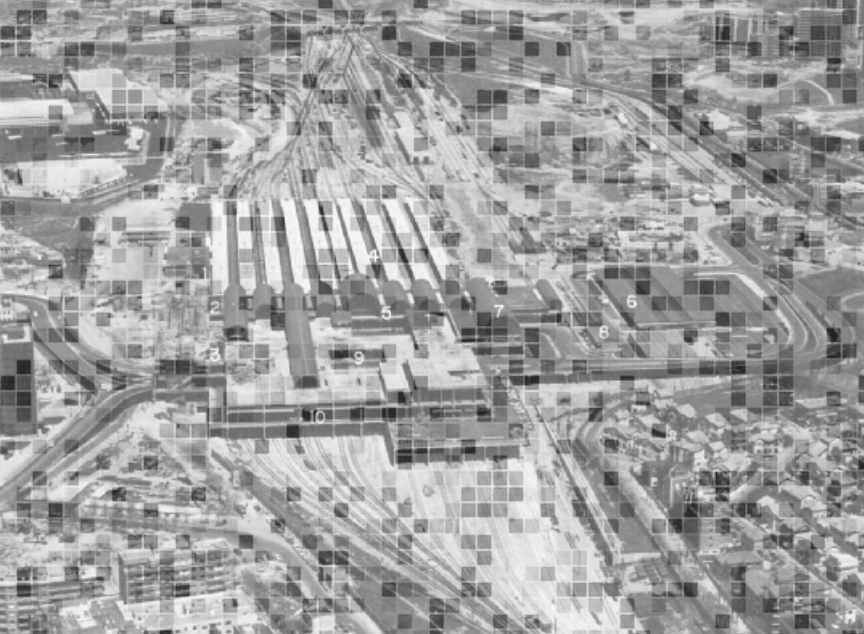
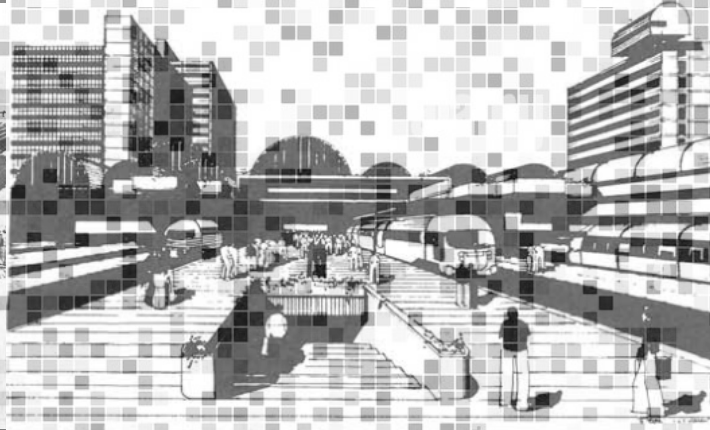
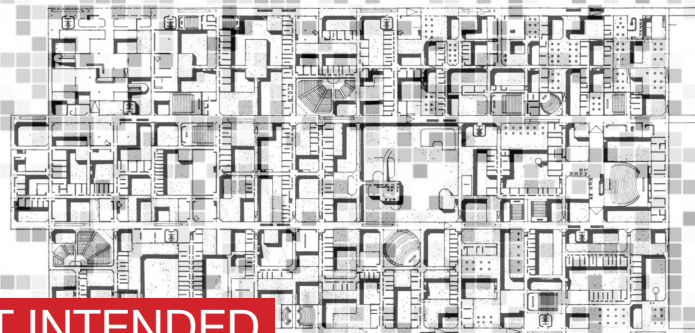
¹⁶ Ibid.

¹⁷ According to docomomo iberico the station was designed by José Antonio Corrales Gutiérrez and Ramón Vázquez Molezún, authors as well of the Spanish Pavilion in the 1956 Expo in Brussels, together with José Antonio Pruneda Argota and Rafale Olalquiaga Serrano. Site Visited 02.09.2022. <https://doco->

Figure 10, 14 & 15. Berlin Hauptstadt competition Proposal. Alison & Peter Smithson with Peter Sigmund. 1957. Berlin. Germany. / Figure 11. Venice Hospital. Le Corbusier. 1964-65. Venice. Italy. / Figure 12, 13, 17 & 18. Madrid-Chamartín-Clara-Campoamor Station. Corrales y Molezun. 1970-75. Madrid. Spain. / Figure 16. Freie Universität Berlin. Candilis, Jossic & Woods. 1963. Berlin. Germany.



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goal to create a station that would act as a *representative center* the station is organized in two levels above the railways.¹⁸ The first level and new superimposed surface hosts a terminal building for passengers that proposes a vertical connection with the platforms below it for passengers and their luggage. There is as well as a square for allowing the circulation of vehicles like taxis, buses or even private cars, finalizing in the southern edge in a parking garage above the trains. The road connection with the rest of the existing city network is made on the west side by a ramp that lifts the vehicles to the new artificial superimposed ground and on the east connects at the same height of the new ground since the station benefits of such a topographic configuration of the area. A second level above this first superimposed surface, 13 meters high from the railways, is completely dedicated to pedestrian circulation and inter-exchange. It proposes a pedestrian square in the middle that links the terminal building with the hotel located in an adjacent elongated tower in the west, the offices building for the management of the station and is closed by some commercial premises in the south, planned to be connected with a covered walkway to the city level on the east. From this level the idea was to have a calm surface, where all motorized traffic would stay below and from where it would be able to overlook the city. To have resorted to the strategy of superimposing a new ground on top of the railways proposes an *ideal solution from an urban, functional and topographical point of view, based mainly on the creation of a large urban development complex built on the yard of tracks*.¹⁹ Having in this way a true flying carpet, with clearly defined borders by the three main programmatic volumes - the terminal, the hotel and the offices - these new surfaces created for public uses, pedestrian and motorized, render accessible and allow the use of existing tracks as a new passenger public train station.

Contemporary to the construction of the station, and as well in Madrid, José Miguel de Prada Poole, partnering together with Andrés García de Quijada, proposed in 1970, on the frame of the Colon Square national competition organized by the Municipality of Madrid, an innovative proposal whose goal was to reflect upon the contemporary city and traditional methodologies of urbanism.^{20,21} The proposal, signed by both architects, featured a structure composed by twelve 45

momoiberico.com/edificios/estacion-de-ffcc-ferrocarriles-de-chamartin/

18 López Astorga, Roberto, *Estación de Chamartín. Madrid. España*, Informes de la construcción. Vol. 29, nº285 (Nov. 1976) pp. 43-92.

19 Ibid.

20 Spanish architect de Prada Poole is probably known the most because of his Instant City inflatable temporary structures made in Ibiza one year after this competition, in 1971. Though, his iconic work and legacy has been forgotten up until recently when, thanks to researches like the one of Nuria Prieto González in 2014 at the University of A Coruña or the monographic exhibition hosted in 2018 in the CAAC (Centro Andaluz de Arte Contemporáneo) in La Cartuja, Sevilla, the figure and work of the architect has been reassumed by the contemporary scene.

21 Prieto González, Nuria, *La arquitectura de José Miguel de Prada Poole : teoría y obra. Arquitectura en la Vanguardia, Utopía construible y contracultura española, Capítulo 3*, in Prieto González, Nuria (ed.) *La utopía es posible*, Thesis University of a Coruña, 2014, pp. 347- 352.

meter high masts, which were the only points in contact with the natural ground together with the road junctions, that were holding a superimposed new ground, raised from the level of the city and composed by different modules some of which could host vegetation, offering like this in a new level a new public surface for the city constituting the actual Colon's Square that the competition was asking for. In addition, and linked with the reflection of the architect about the permanence and construction of traditional *monolithic urbanism* in opposition to *fragile, perishable or non-constrictive* the proposal was featuring a solution ready to disappear without leaving any trace but only twelve piling points.²² The modules with which the new surface was built were polyhedral and could be made of reinforced concrete in the cases they had to host vegetation, or paved with glass bricks in the other cases so they would allow the light to go through. In the middle of the square, a monumental polyhedral vault is the *water theater* built with glass bricks as well and imagined to be traversed on its surface by water, thought to host performances such as ballet, theater or citizen participation activities, so with a big political mindset. The modules were even thought to be removable or exchanged, proposing a more suitable design distribution of the newly created ground for each specific use. The building was planned to be completed with the help of helicopters that would carry on the modules and suspend them on the air.²³ The existing square was already counting with an enclosure made by the perimetral buildings and roads. The structure adapts to such preset disposition and proposes analogous borders on the superimposed surface to the ones of the existing square. The inferior level, located on the original ground of the city, is proposed to be used for solving communication nodes and to be used as a parking lot.

Such a new square, superimposed to the existing one that lays on the original ground of the city, incarnates an example in which a public space is imagined in a newly constructed artificial ground allowing for duplicating the available area of the space and to let several activities to happen in different rhythms at the same time, like it was the case in the Smithsonian's proposal for a Capital Berlin, the infrastructural flying carpet hosting Madrid Chamartin's Station or would have been the case in Colon's square proposal of de Prada Poole. In this sense, the superimposed bridge-like complex that makes possible to use the platforms in this particular place as a station, proposes a slower speed of movement than the trains that pass below it, offering broader spaces for the public before going down to the narrower platforms. When the original ground of the city is too much used by a higher speed of movement, featuring not only trains but as well roads for cars or highways, infrastructural public spaces can be generated on top of this level, or existing ones re-appropriated, in order to offer a possible space for

²² These are the words De Prada Poole employed to define such cases. See *Ibid.*

²³ At some point along the competition documents, it is mentioned by the architects the analogy of the constructive system with Frei Otto's Munich Olympic Stadium of 1972, in order to defend their proposal and try to not feature it as utopian as it could look but more plausible with all the possible benefits in terms of long construction sites, demolitions, debris.

pedestrians, for the human scale. It is for example what has happened in New York, with the formerly in use elevated railroad known as The High Line, which now is a long public urban park using the existing superimposed ground of the route, stretching from Meatpacking District to the Hudson Rail Yards. Instead of demolishing it, as some voices were proposing, it was maintained because of a consideration on the positive impact a new public space, elevated from the hectic ground of Manhattan, could have on the value of the neighboring buildings. Of course using public space for real estate speculative matters is not the goal of this thesis but somewhat, the fact that an increase of the price of the neighboring buildings has surpassed the price of the ground on which the structure stands, can be taken as reference of the success of reserving such space for public uses according to people's opinions and desires for leisure. According to the architects Diller Scofidio + Renfro, the intervention, carried between 2004 and 2019, *was inspired by the melancholic, unruly beauty of this post-industrial ruin, where nature has reclaimed a once vital piece of urban infrastructure, [...] It translates the biodiversity that took root after it fell into ruin in a string of site-specific urban micro-climates along the stretch of railway that include sunny, shady, wet, dry, windy, and sheltered spaces, and accommodates the wild, the cultivated, the intimate, and the social.*^{24,25}

Pointing out nature as an important ingredient of this intervention, that gives back to the citizenship an artificially generated ground superimposed to the city because of identifying it as an available asset, it makes to think as well in another re-appropriated infrastructure, this time featuring a long surface in Seoul, the Seoulo Skygarden by MVRDV opened in 2017. The architects define the newly pedestrianized 1970's viaduct, formerly used as a highway, as a urban *plant village* that accommodates the biggest variety of Korean plant species, proposing a long public park that flies over the Historical Seoul Station, offering amazing views over the city, and transforming it into what they called a *Skygarden* or what it could be as well understood as a flying carpet hosting a garden on the sky.²⁶ Such an artificial surface given back to the pedestrian realm, making of the viaduct an urban public park populated with sixteen small pavilions such as cafes, shops, a gardener's pavilions, trampolines, a foot bath, a little stage, an information point or a children's theater, offers citizens to find a new space in the city where to have a walk, cross from one side to the other of the city to go to the

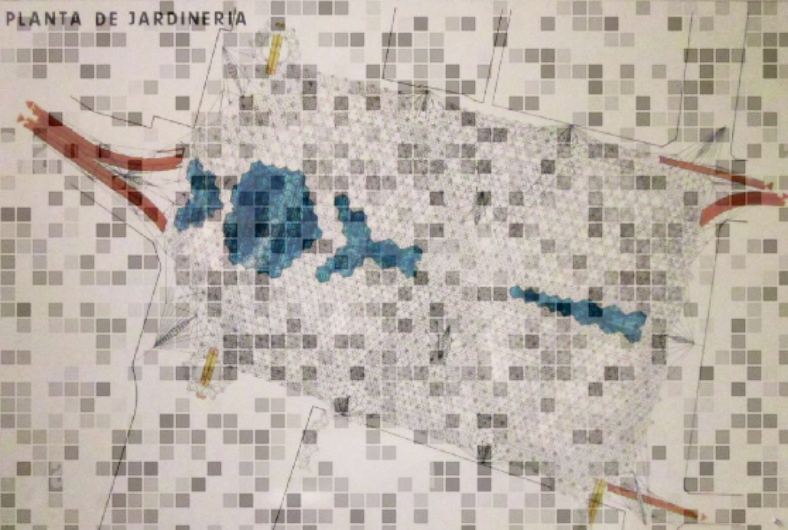
24 Diller Scofidio + Renfro. Description text at their website. Site visited 02.09.2022. <https://dsrny.com/project/the-high-line>

25 Anon, *High Line City Walk, New York*. Diller Scofidio + Renfro *James Corner Field Operations* in Diller Scofidio + Renfro. AV Monografías n°221. (229) pp. 14-23.

26 MVRDV. Description text in their website. Site visited 02.09.2022. <https://www.mvrdv.nl/projects/208/seoulo-7017-skygarden>

Figure 19, 23 & 24 Colon Square competition proposal. De Prada Poole y Garcia de Quijada. 1970. Madrid. Spain. / Figure 20, 25 & 26. High line. Diller Scofidio + Renfro. 2004 - 2019. New York. USA. / Figure 21, 22, 27 & 28. Seoulo Skygarden. MVRDV. 2017. Seoul. South Korea.

PLANTA DE JARDINERÍA



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office or visit a friend, and enjoy the green new landscape of this unique park in the heart of the city, that makes the city *friendlier and more attractive*, having the possibility to learn about all the species assembled on it and organized by alphabetical order.²⁷ Understood as a collection of small gardens that create the totality of the elongated park, this superimposed public surface artificially generated is featuring once again the potential of rising a public surface to the point of making it fly over other activities, allowing for a more dense but still organized arrangement of functions, where people can freely interact by the means of just enjoying the space together, by the means of leisure, of sports activities or sharing a drink.

²⁷ MVRDV, « Seoulo Skygarden / MVRDV » Description text provided by the architects. Site visited 02.09.2022. https://www.archdaily.com/882382/seoulo-skygarden-mvrdv?ad_medium=gallery

2.5 DIGGING - POOL

When speaking about modifying the existing ground in order to generate a recognizable limited surface, that in the case of this research is aimed to act like a potential collective place, it is impossible not to think about one of the most direct ways of provoking a difference in the level of the ground. In opposition to all of the four former strategies featured along the text, and dedicated to design an artificial surface, the fact of generating a depression in the ground, to subtract matter, is in this case the fifth chosen action closing the collection of strategies. When at the beach, children and adults have a sandy ground as an endless resourceful for modeling new imagined structures like sand castles, towers, forts. Nevertheless, the most immediate act is the one of digging. Either in order to recuperate matter with which to build a new structure or, in many of the cases, to create a hole in the beach. A hole that often interacts with the wavy stream of salted water, getting filled in by the sea waves, and then dried out. In general, it would even be possible, thanks to the slightly irregular topography of the sandy beaches when they meet the water, to find naturally generated pools keeping portions of ground inundated regularly. A pool is by definition a *small body of still or standing water, especially one of natural formation* more generally an *area of liquid on the ground*.^{1,2} In a depression of the ground, water, or any other liquid, can easily accumulate, generating a clearly limited area with borders on the ground. Sometimes such pools then can be staying more on the surface of the ground, but some other times, thicker holes can be made artificially to store a bigger quantity of water. In western India for example, where rainfall is low for much of the year, so many *wells* have been built during the four thousand last years at least. Well is the name they receive, being however somewhat a kind of pool that has been specifically designed and made to store water for the whole year. The striking characteristic of these wells are the steps that are constructed around the walls of the well as a usual practice, in order to be able to reach the water level downstairs. Some of these wells have been constructed, thanks to the stability of the available ground, as two opposite arched walls retaining the ground behind them and generating a narrow slit in the earth, becoming kind of strict and linear pool-like wells.³ This is the case of *Agrasen ki Baoli* Stepwell in New Dheli from c. 1400. Some other times, different solutions had to be designed in order to absorb the lateral forces of less solid grounds, generating like this broader and larger, more quadrangular stepwells like for example the one of *Surya Kund*, in Modhera, and from 1026.

120

1 Definition of « pool » at the Oxford English Dictionary. Site visited 02.09.2022. https://www.oed.com/search?searchType=dictionary&q=pool&_searchBtn=Search

2 Definition of « pool » at the Cambridge Dictionary. Site visited 02.09.2022. <https://dictionary.cambridge.org/dictionary/english-french/pool>

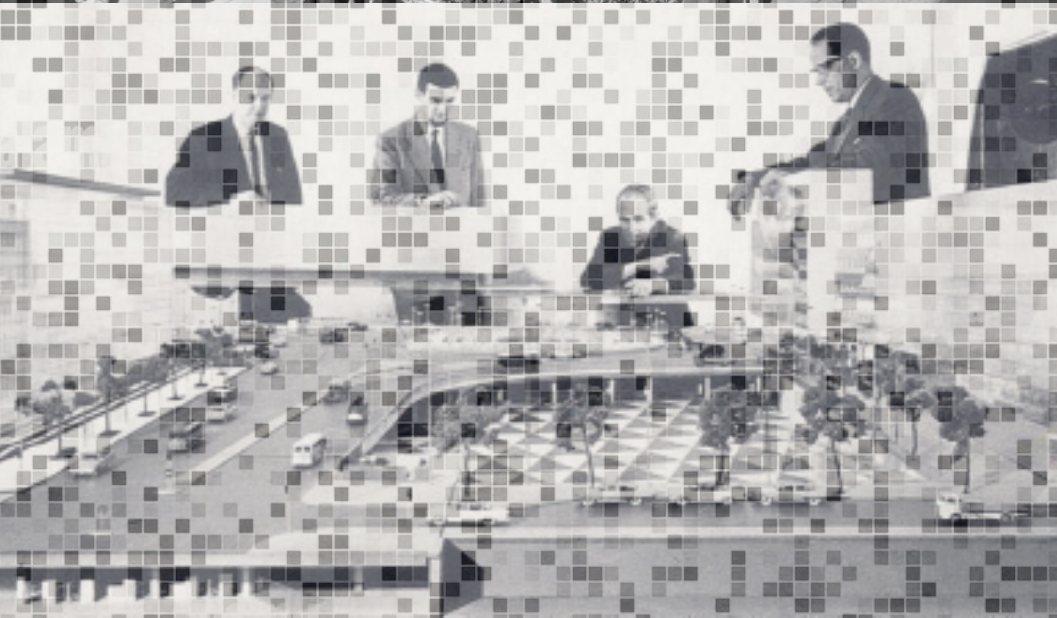
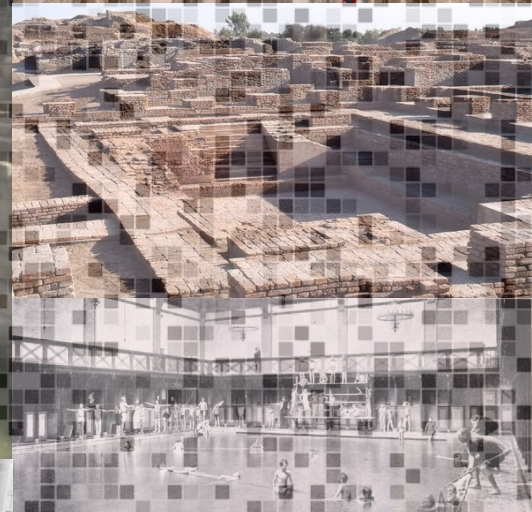
3 Mastenbroek, Bjarne; Mecredy, Esther; Baan, Iwan, *Dig It! : Building Bound to the Ground*, Taschen, Köln 2021. pp. 408 -457.

And so what actually seemed to be just a strictly functional infrastructure, made for storing water preventing times of drought, has in the background a deep public space character. The surface occupied by the water is obviously not able to be used by people, since we are not speaking of a swimming pool here, but all the steps and stairways leading down to the water, create a highly rich place spatially, able and open to host the public and their possible social interactions. Such terraced artificial landscapes, composed of steps and built for accessibility, are already a potential scene and a powerful inspiration when thinking on the shaping of contemporary urban artificial public grounds. The functional aspect of wells is something that interests much less this research whereas all the displays around them that were considering the access for humans are an example of typologies that even if not consciously invented and planned for the public, hide an enormous potential for a contemporary reflection about today's public space. The act of digging creates a system opposite yet analogous to that of building a podium. In this sense Koolhaas's *Captive Globe* is an emblematic example.

A kind of public space that is somehow linked with the modeling of the ground, generating punctual depressions inside it in order to store some water are the baths. To artificially construct a structure bound to the ground and able to host a consequent quantity of water inside, it is something that has been made for thousands of years in human history. The first example of swimming pool is considered to be the one found at the Great Baths of *Mohenjo-Daro* dating from the third millennium BC and supposedly used for ritual functions, made out of bricks covered with a tar-based sealant.⁴ What it is revealing about the typology of the swimming pool, in opposition to the one of the step-wells, and even if both structures are used to store water, is the direct public function the swimming pool represents. Even if swimming pools and baths have been existing along the last 5000 years of human history, it has not been until the 19th century that the swimming pool has gained the status of publicity that it is associated nowadays to it. From the indoor swimming pools at the 1850s in England, little-to-little they have become framed spaces on which people could not only sport or enjoy a bath but as well compete, or perform in a broader scale, involving a larger public. The boundaries that, when constructing in the contemporaneity a swimming pool - and thanks to reinforced concrete - are represented by the containing perimetral walls, frame a space that automatically becomes limited and defined, on which it is possible to manage a big range of public aquatic activities. A public stage on which, because of its limited size and concreteness, it is easy to focus on. Prob-

⁴ Great Bath. Ancient bath, Mohenjo-daro, Pakistan. Encyclopedia Britannica. Site visited 02.09.2022. <https://www.britannica.com/place/Great-Bath-Mohenjo-daro>

Figure 1. Surya Kund Stepwell. 1026 CE. Modhera. India. / Figure 2 & 8. Lower Plaza. Raymond Hood. 1931-1936. Rockefeller Center. New York. USA. // Photography of 1949. // Revised design 2020. / Figure 3, 9 & 10. Sergels Torg. David Helldén. 1967. Stockholm. Sweeden. / Figure 4. Agrasen ki Baoli Stepwell. c. 1400. New Delhi. India. / Figure 5. Great Baths. 3000 BC. Mohenjo-Daro. Pakistan. / Figure 6. Swimming Pool. Mid XIXth century. UK. / Figure 7. Olympic Swimming Pool. Kenzo Tange. 1964. Tokyo. Japan.



ably everyone can easily source for a memory where, during the month August, there was a live synchronized swimming competition at the Olympic games on TV. The legs, heads and bodies in general of the swimmers, are easily captured by the cameras since their performances are taking place inside of a specific and limited frame that is the swimming pool. Such borders make of swimming pools easily understandable entities, both in the public sphere as well as in the private one, where they have become a symbol of economic progress somehow and its democratized consumption amongst the middle class is comparable to the one of the automobile. The metaphor of the pool is then helping in this research to define and draw the kind of artificial public spaces generated by the strategy of digging, which have all of them: very easily recognizable borders, they are constructed thanks to the progress in construction engineering, and represent a public stage to the scale of the city, a urban focal point easily recognizable.

During the 1930s, the Rockefeller Centre, *America's largest privately owned business and amusement complex of the pre-war period* got constructed following the master plan of architect Raymond Mathewson Hood.⁵ In the very center of the complex, a lower Plaza or sunken central public space is located below ground level, thought to initially precede the Metropolitan Opera House.⁶ When the building of the Opera got canceled, the sunken square stayed, and was built surrounded by commercial premises. In 1936, and initially as a temporary measure, an ice rink got installed replacing unprofitable retail space that had been constructed as part of the original center.⁷ As it were an almost empty swimming pool, with its last layer of water frozen because of the winter temperatures, the ice skating rink soon became such an attraction and a symbol of the central space. Even nowadays is a scene where it is possible to either practice skating or just stare at people doing it. The sunken plaza has always been a framed artificially generated ground able to attract the interest of people and host several leisure activities along the different seasons of the year. Such an iconic urban space, being located in the greatest ecosystem of artificial urban grounds which is Manhattan, is according to some architects, like for example Chinese – North American architect Ieoh Ming Pei, *perhaps the most successful open space in the United States, perhaps in the world*, due to its capacity of reassembling people.⁸ Even if the strategy of digging the ground, in order to propose a space separated from the existing original level, is something that has been used in several occasions, it cannot be said that is easy to have successful public dig grounds in the city because often they fall into decay, for lack of care, cleanliness, or organization, being an added difficulty to manage a space below ground. Also as well because perhaps they have never really been designed for the human scale.

5 Davey, Peter; Sharp, Dennis, *Twentieth Century Architecture: a Visual History*, The Architectural Review. Vol. 189, (1991) pp. 257.

6 Balfour, Alan, *Rockefeller Center : Architecture as Theater*, McGraw-Hill ,New York 1978.

7 Herselle Krinsky, Carol, *Rockefeller Center*, Oxford University Press, Oxford 1978.

8 Balfour, Alan, *Rockefeller Center : Architecture as Theater*, McGraw-Hill ,New York 1978.

In Stockholm, another example of an iconic sunken public plaza is found in the very center. It receives popularly the name of *Plattan*, the plate, the flat, the platform even, an artificial ground taking place under a bigger circulation node constructed in the 1960's and known as *Sergels Torg*. Even if the city was not touched by any bombings during the second world war, after it, central Stockholm was completely renewed. A new master plan proposed to replace the city existing structure with a straight and aligned modernist layout, with its consequent building blocks. The whole length of the facade of the new 1974 *Kulturhuset* complex, by Swedish architect Peter Celsing, connects with the sunken part of *Sergels Torg* in an open air condition, the part that truly is known as *Plattan*. The rest of the dig level is covered by a concrete slab holding motorized traffic on top of it, and offering spaces below it for commerce, cafés and a direct access with the metro lines. Designed by David Helldén, the sunken plaza, which floor covering triangular pattern is part of the iconic image, it was finished in 1967 and counted with a large *perron* of stairs on the west side, with a ramp next to it, allowing to access to the level of the sunken plaza from the level of the city. The more or less rectangular plaza is clearly framed by the ending of the slab covering a part of the sunken level. And even if during its history it has been seen as a decadent space by the inhabitants of the city center, especially because breaking aesthetically with the vision of the center of Stockholm, and because of *becoming a center for drug trafficking, (falling) into disrepute*, the truth is that for the people *travelling from the suburbs, the square does not present itself as an aesthetic rupture but as a continuation*.^{9,10} What at this point of the discussion becomes a great fact is that this pool-like sunken space in the very center of the city of Stockholm represents, since the urban renewal took place in the city from the Sixties onwards, a direct entrance to Stockholm from the suburbs by the means of underground lines, into the core of the inner city, which fights at the same time somewhat against such fact. By using the strategy of digging a new public space, such connection was brought in the city already back in the Sixties. Politically, this space is such a goldmine. Directly linking the city and its suburbs with such a socialist program as the House for culture and the city theater - *Kulturhuset* - offering spaces for exhibitions, an extensive library, and a restaurant at the rooftop, *Plattan* has been used periodically for demonstrations and celebrations since its creation. Even if some people *do not regard Plattan as a nice place, though many regularly use it*, until the point that is calculated that one hundred thousand people pass by *Plattan* every day.¹¹ All these facts make of *Plattan* an artificial social pool dig in the ground and offer to the public for collective uses. As many agree, strong emotions are attached to *Plattan* and its future, being able to understand the place and its management as an important social engineering project. In terms of its design, not only the fact of digging it into the ground is making of this example an

9 Franzén, Mats, *A Weird Politics of Place: Sergels Torg, Stockholm (Round One)*, Urban Studies, Vol. 39, No. 7 (June 2002) pp. 1113-1128.

10 Ibid. pp. 1124

11 Ibid. pp. 1123

iconic one, but the triangular pattern covering the surface of the artificially generated public ground is as well contributing to it. Stockholm's municipality tries to then give care to such public space in order to maintain it, dedicating recently some millions of Swedish crowns to renew the pavement of the ground.

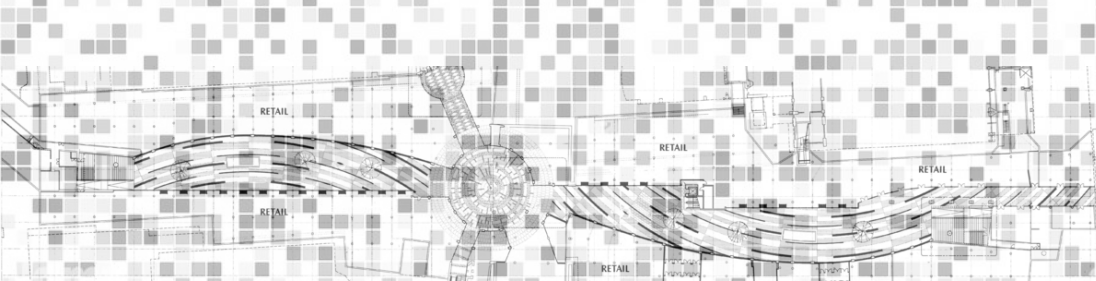
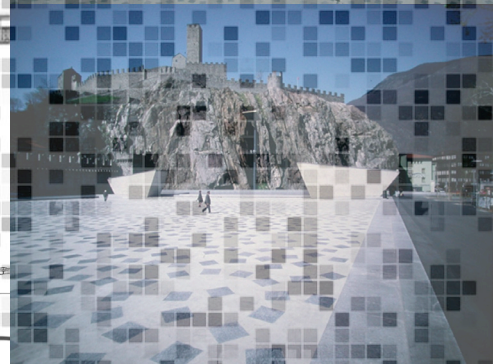
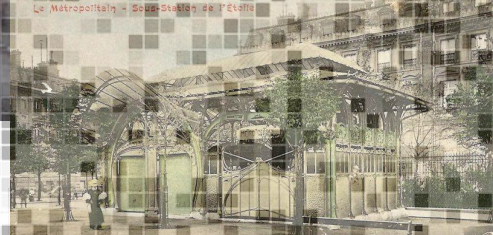
In a city that, in big opposition to Stockholm, was completely destroyed because of the 1940 German bombing, Rotterdam, long reconstruction works have been undertaken along the decades to reconstruct the whole city. In its center, the important project of the *Lijnbaan* by Dutch office Van den Broek & Bakema, was opened in 1953, proposing like this a new main shopping street for the citizens. Along it, several were the new buildings that got built with commercial purposes like for example the new *Bijenkorf* department store building by Hungarian born Bauhaus architect and designer Marcel Breuer.¹² In the 1990s, nearly fifty years after World War II, Rotterdam was still suffering from its needed reconstruction. Just parallel to the *Lijnbaan*, on the other side of the *Bijenkorf* building, *Coolsingel* Avenue, the city's busiest traffic artery at the time, severed downtown shopping into two separate, and weakened, districts.¹³ This was the reason why, in order to *heal the split and the city*, Jon Adams Jerde's architectural office collaborated in the creation of a pedestrian street dug below the six-lane *Coolsingel* Avenue called *Beurseplein*.¹⁴ Californian post-modern architect Jon Jerde's firm has specialized in the development of commercial areas and centers. *Beurseplein* proposed a sunken promenade, surrounded all the long of it with commercial premises. Its goal was to propose an easy connection between the commercial hub around the *Lijnbaan* and the rest of the city to the north of *Coolsingel*, digging a street below the avenue. Even if defined like a street, because of its more elongated form and used functionally to cross from one side to the other of the Avenue by a tunnel below it, the *Beurseplein* proposes a *plein*, a plane, a plate, flat, newly generated surface that even if rendered continuous through the tunnel that crosses the traffic axis, is composed of two mirrored semi-lunar pools dig in booths sides of the avenue. Such newly designed artificial public surface, even if surrounded by privately owned commercial premises, surfs between the public realm and a private sphere, in a traditionally neo-liberal country where the complementary participation between the two spheres is more than usual, and some little times, positive for the public. Almost like a post-modern extension

¹² Marcel Breuer is as well very well-known because of its furniture design, amongst which stand out the Wassily or Cesca chairs.

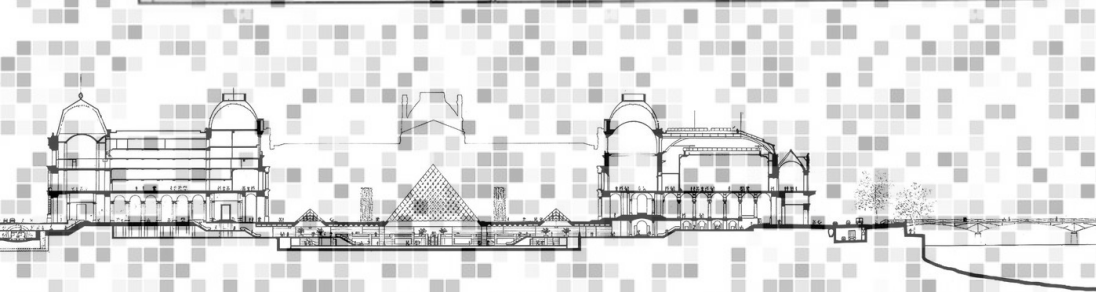
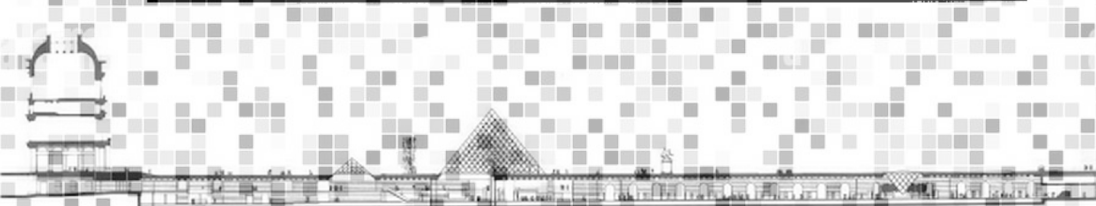
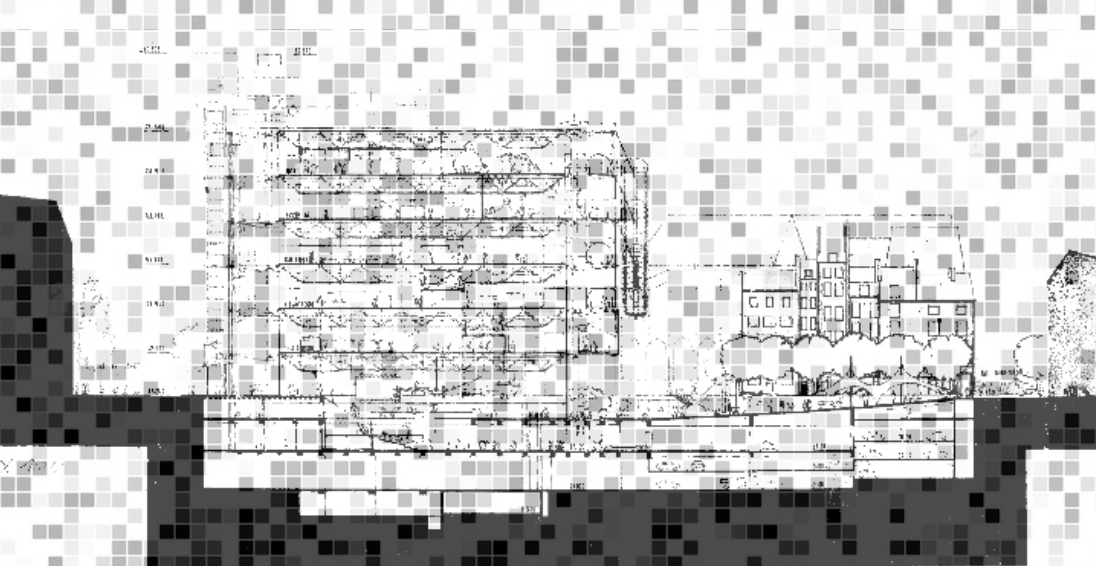
¹³ Jerde Architects, *Beurseplein*, description text at their website. Site visited 02.09.2022. <https://www.jerde.com/projects/8331/beurseplein>

¹⁴ Ibid.

Figure 11, 12 & 19. Beurseplein. Jon Jerde. 1993-1996. Rotterdam. The Netherlands. / Figure 13. Transversal section. Centre Georges Pompidou. Richard Rogers and Renzo Piano. 1971-1977. Paris. France. / Figure 14 & 15. Transversal and longitudinal sections. Grand Louvre. I.M Pei. 1989. Paris. France. / Figure 16. Lijnbaan. Van den Broek & Bakema. 1953. Rotterdam. The Netherlands. / Figure 17. Bijenkorf. Marcel Breuer. 1956. Rotterdam. The Netherlands. / Figure 18. Entrance Metro Station. Hector Guimard. Early XXth century. Paris. France. / Figure 20 & 21. Piazza del Sole. Livio Vacchini. 1996-1999. Bellinzona. Switzerland.



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of the *Lijnbaan*, by use of the strategy of digging, *Beurseplein* became an easily recognizable spot in the city, clearly framed by the facades of stores, acting like spatial containing walls and located below the natural ground level of the city. Independently of the style in which the space is built, (abusing of a yellow very-different-in-its-looks stone to the one employed on the *Bijenkorf* facade yellow stone, and somewhat of some Hector-Guimard-inspired turquoise metallic pergolas and urban furniture) the *Beursplein* is a more than less successful example on how to employ and use this changing on the level of the city for proposing gathering spaces in continuity with the rest of the city, thanks to the slopes that render them accessible, but being clearly identifiable since the unevenness of the ground frames it as a space for collective use in the center of the city.

The strategy of digging new public surfaces in the thickness of the ground, generating pool-like voids in the city, is something that has been as well particularly used as a successful threshold between the city and a public building like a cultural center for example. Somehow similar to the Swedish disposition of an esplanade or *Plattan* next to the Culture House, what Renzo Piano and Richard Rogers proposed to insert in the historical plateau of *Beaubourg* in Paris, was a parallelepiped volume, containing the required spaces by the program of the competition, and rendered accessible through an inclined artificial surface that, through digging an even discreet slope along the longitudinal facade of the new building, was making possible an urban continuum between the level of the city and the entrance to the cultural center in the underground.¹⁵ The adjacent artificially generated surface to Centre Pompidou in Paris is part of the building and of the city at the same time. The center, built between 1971 and 1977, was preceded by this public place on which the activities that take place are fully addressed to collectivity. Again a pool-like sloped slab that covers an underground parking garage below it but that, at the same time, is framed as a public urban ground, borrowing its form and size from the volume hosting most of the cultural center program. An open urban new artificial surface offered to the city and delimited and framed thanks to the strategy of digging in the thickness of the natural ground, that allowed for any sorts of cultural and social performances as well as for political and recreational activities to take place in this free space to be used by citizens. But the plaza is sunken specifically here to create an enclosed place for the contemplation of an informative facade with audiovisual screens. This aspect is important since this plaza becomes a gathering place to inform people of the most current political events at the time, like the war in Vietnam for instance. To dig inside the ground has as well been the strategy used by several architects in the last Thirty years to give access or organize additional spaces and programs affecting existing buildings. Chinese – North American architect Ieoh Ming Pei 1989's Louvre's palace intervention, resonates of his love for the sunken Plaza at the Rockefeller center in new York. He proposes to reorganize in a sunken level the question of the access to the museum as well as all the additional program to

¹⁵ Hamzeian, Boris; Piano, Renzo; Le Bon, Laurent; Gargiani, Roberto, *1968-1971 : Live Centre of Information : De Pompidou À Beaubourg*. Actar, Centre Pompidou, New York, Barcelona 2022.

be injected into the Louvre, connecting the city to the museum through a hole on the slab covered by a transparent glass pyramid. The hole covered by the glass pyramid will then be the connecting place between a new underground floor situated below the level of the city and the existing level of the city itself.¹⁶ Other more recent museums expansions and refurbishments used the underground as well as an available asset to give solutions to the programmatic requirements, offering available public surfaces at the level of the city on top of such spaces like the Joanneum Museum in Graz, Austria, of Spanish architects Nieto y Sobejano from 2012 or the Amos Rex art museum by jkmm architects in Helsinki from 2018. But the real power of the strategy of digging the ground in order to generate such clearly delimited and defined new artificially made public surfaces, is believed to reside in the way in which the ground is modeled and shaped. Following the subtle way in which the sloped public surface of the Centre Georges Pompidou allows from giving access to the center to frame the public place, proposing some clear boundaries that allow to delimit the space, making it understandable as a concrete urban entity for public use in the city, 1999 Livio Vacchini's Piazza del Sole slight difference in level with the surrounding asphalt, in the small town of Bellinzona at the Italian part of Switzerland, allows to close the borders of this sixty meter square surface. The discretely sunken plaza of Bellinzona, proposing a clearly framed new artificial public surface, is actually functioning as well as the roof of the parking garage below it. Defined as a *peculiar place* by the architecture office, the newly created surface is as well creating a unique and regular slope, used in this case to eliminate the rainwater that would flow into a hidden crack on one side of the square, apart from being as well a design strategy to frame the public space.¹⁷ The floor is paved with squared granite tiles laid in an *only seemingly* random manner, composing again a recognizable pattern that even has its technical reasons for the concrete not to crack. This case study designed during the eighties and affecting little bit less than three thousand five hundred square meters, is a rather simple by effective example on how to shaping of the ground by the strategy of digging can create and define a public ground in the city, generating like this a public - empty - pool for citizens to take collective ownership over the space, which it is enclosed and defined by clear borders at the same time as in a very easy continuity with the rest of urban space.

¹⁶ <https://www.pcf-p.com/projects/grand-louvre-modernization/>

¹⁷ See Piazza del Sole description text at studio Vacchini's website. Site visited 02.09.2022. <http://www.studiovacchini.ch/opere/14>

3

THE THICKNESS OF URBAN SLABS

**From Below-Slab Technical Equipment
to Public Interiors**

If in the first two chapters the main interest of the speech focuses on Urban Slabs made by human beings for generating several sorts of gathering and meeting places. Now in this third part the focus slightly shifts and concentrates on the construction, consistency and thickness of these *slabs*, how are they made and constituted. The technical thickness of the Urban Slabs occupies the discourse now. This third chapter identifies then precise examples and explores the potentialities of below-slab spaces as well from a sociological and political perspective. Urban Slabs can be proposed as raised surfaces from the natural level of the city as well as being human-made grounds replacing the actual natural existing ground of cities and working as the roof of anything happening below it. Such artificial grounds can be seen as not only mere surfaces on which collective activities can take place but, actual slabs that have to be designed and constructed and that host a world of activities and functions above it, generating an above-slab universe, but as well another below it, being able to speak about a below-slab world related initially to only serving functions. However, below-slab spaces are going to host important functions and activities for a contemporary understanding of these artificial grounds.

Urban Slabs that are raised from the regular level of the city, as well as the ones that are directly at the existing ground level of the city, are going to generate either newly constructed underground spaces or simply excavated ones inside the depth of the natural soil. Both cases will have an analogous value in this thesis. In the first case, when the slab is built raised from the ground floor level of the city, a new underground space can be located completely above it, no needing any digging inside of the soil for its construction. In the second case, when the slab constituting the artificial ground is located at the same level than the rest of the city or even below it, excavated underground spaces will be generated which, for its existence and consolidation, different and more specific construction and structural solutions will have to be applied.

This thesis grants an analogous conceptual value to both underground spaces, representing both of them a network of below-slab spaces that traditionally started existing exclusively because of technical reasons and that in the contemporaneity, little-to-little, have started to acquire a status of remarkable habitability for humans, conferring to such spaces a spatial status comparable to other architectural spaces designed for people essentially on the surface of the earth, in the above-slab world.

These underground spaces, even if initially seen as an available asset for hosting storage spaces, canalizations and serving tunnels in the modern city, have been identified with time as a potential resource for hosting more public spaces directly related with the ones hosted by the apparent public surfaces situated above it, above-slab. An important step forward came with the arrival of transportation

technologies and motorized traffic. The underground of cities and below-slab spaces were used to host functional activities like inserting the metropolitan systems of train networks, with all the tunnels and stations these implied, as well as other networks of tunnels and tubes and below-slab roads as part of strategies that tried to segregate motorized traffic from pedestrian one. Even if they were activities related with the technology insertion in the city, they brought with them an initial presence of human being inside the underground of the city. The ensemble of layers situated below the visible surfaces of Urban Slabs constitute then the below-slab world, the complexity of which this third chapter is aiming to thresh through an extensive genealogy, featuring step by step below-slab spaces as being inhabitable for humans, with all the challenges that such fact implies.

3.1 EARLY URBAN SLABS: THE GARDEN TERRACE

Infrastructural basements are taking place below the visible surface of artificial grounds. An example in which it is possible to acknowledge the notion of the below-slab spaces of an artificial ground is found in Pienza, a small town in Tuscany, Italy, where, a *perfectly flat and open on the panorama* hanging garden was commissioned by the pope Pius II to Bernardo Rossellino back in the 1450s.¹ Such construction got realized in order to offer an additional garden to *Palazzo Piccolomini* at the same level as the ground floor of the palace in which it would be possible to enjoy of some recreation time, fresh air, and to divert oneself away from exclusively productive matters. As it is well known, Tuscany is a hilly region, and Piccolomini's Palace was built on top of one of these hills. Since there wasn't any available flat pieces of ground around the palace where to place a garden, the idea of Rosellino was to build a ground on top of which it would be possible to artificially plant some greenery. But as it is imaginable, plants cannot really be planted on a surface but they need of an extra thickness where to develop their roots. This is the first reason why the notion of the thickness starts to be important to understand the relevance of such an example. Not only the slab starts to have a certain thickness, allowing for the roots of the greenery to grow and develop, but as well Rossellino imagines and builds a system of ventilation chambers below the needed layer of soil because of technical reasons. Thanks to a structural system of cross vaults sustained by a grid of short columns, a voided chamber collects the several water infiltrations produced by the layer of soil. Water is then evacuated to the exterior through a system of channels or is evaporated thanks to ventilation flows provided by some openings along the perimeter walls that enclose the chamber. This new rectangular garden, which lays on a system of cross vaults and pillars, appears then here as an early example of an artificial ground that starts showing the potential and necessity of this thickness below the slab where infrastructural basements take place. Additionally, and thanks to the big unevenness of the topography of Tuscany, there was still enough space below the slab and the voided chamber that Rosellino imagined some extra covered stables for hosting the horses the Pope had for functional and recreational reasons. These stables were accessible from the lowest part of the slope in which this garden terrace got built. In the present, these stables are as well devoted to recreational functions hosting as a bar from which it is possible to overlook the landscape in almost the same ways as from the level of the garden.

Pienza's garden terrace constitutes an example of early artificial ground in which it has been proposed an additional space for the palace hosting recreational

¹ Da Caiano, Vittorio, *Structures horizontales à fonctionnement diversifié, de Brunelleschi à Kircher*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 234-241.

functions on top of a built slab. This slab is counting with an extra layer below it that contributes to the proper functioning of the garden, it being a quite of an innovative air chamber working as a system for the evacuation and evaporation of water filtrations.

Continuing with this genealogy, and as it was the case in Pienza, the garden of the *Palazzo Ducale* of Urbino is another example of a flat artificial ground built on a slope, in which it is possible to identify as well below-slab layers under the visible planted surface which were inspired of the garden of Piccolomini's Palace. In this case, such underlying technical chambers for evacuating and collecting the water of the rain and the snow, are attributed to Francesco di Giorgio.² It is inside these subsequent layers below the slabs in which the additional complexity of artificial ground and the several functions of it can be revealed. To recognize such layers in the thickness of Artificial Grounds is important in order to survey and acknowledge their big potential as human made infrastructures that can contribute to the collective sphere. Even if such gardens were not yet thought and designed for a big an open collectivity of people, they feature open air spaces devoted to the enjoyment of nature and fresh air for spending free time. Such gardens are early examples of artificial grounds devoted to diversion time and leisure activities without yet a collective dimension though.

The topic of the garden brings up then the notion of recreation and enjoyment of free time on one side, which are important concepts in this thesis since they start speaking about a potential network of collective places in which diversion is allowed and encouraged, constituting the result of a political will even if back at the renaissance to enjoy free time was not something within everyone's reach. On the other side, the fact of planting greenery on an artificially-made ground or, better said, inside it, carries with it the technical issue or challenge of constructing a slab needing to host sufficient quantities of natural soil in order for the greenery to enroot inside such artificial slab and serve as roof to the extra below-slab layers related with serving functions like air chambers or even stables.

So once garden terraces are understood conceptually as taking place on top of built slabs holding inside their thickness enough soil to be able for the greenery to enroot there, nothing really stops such slabs to not anymore relate with the more or less natural level of the ground in the city like it was the case in Pienza or Urbino, but to be brought to a much higher level in buildings. Similarly to what the XIVth century garden terrace of the *Guinigi* tower looks like, in the city of Lucca, Italy, on which several trees are planted at the top of the forty four meters tower, Antonio Averulino known as the *Filarete* imagined in his *Treatise of Architecture*

² Ibid.

a Garden Palace close to *Plusiapolis*, whose roofs on the top floors would be actually garden terraces planted with greenery.^{3,4} Filarete drew a perspectival front view of its facade, already back at the 15th century, that was anticipating a long subcategory of artificial grounds planted with greenery on top of buildings, before even the invention of concrete and reinforced concrete.

The case of the roof garden at Jean d'Etienne's apartment in Rue Ménilmontant in Paris by Jacques-Guillaume Legrand, in the 18th century, was an example of roof top garden that, even if built on top of a wooden slab made with wooden beams, counts with a *particularly resistant concrete covering* that is going to propose a more innovative solution for rendering the surface of the slab more impermeable with the goal to not have to deal with any water filtrations.^{5,6} Even if still the collective dimension of such green roof was still not existing since this is the case of a private roof terrace planted with greenery at a private apartment, such project proposes innovation in construction techniques that are going to precede further developments fully developed in reinforced concrete this time.

Le Corbusier identifies reinforced concrete as an especially convenient construction technique for constructing flat outdoor artificial grounds. *The reinforced concrete construction has determined a revolution in the building aesthetics. By eliminating the roof and replacing it with terraces, reinforced concrete led to a new aesthetic of the plan that was previously unknown.*⁷ With this sentence, Le Corbusier was assuming as a revolution the fact of switching a roof into a usable flat surface, without necessarily acknowledging the pre-existence of several cases and just maybe not specifying enough that it was through reinforced concrete that the construction of flat roofs could be universalized. This would be the case amongst many of his villas from the 1920s onwards, like Villa Savoye for example, in which a garden is proposed at a height of six meters above the natural ground. Reinforced concrete started offering the possibility to build slabs that would on one side behave in an efficient way both, structurally and in terms of waterproofing. Thanks to these characteristics, the fact of imagining such new artificial grounds to hold some soil in order to plant greenery was as well a closer reality.

3 The Treatise is from the XVth century, around 1460. Il Filarete; Grassi, Liliana; Finoli, Anna Maria, *Trattato di architettura*, Ed. Il Polifilo, Milano 1972. Vol. II pp. 93.

4 Plusiapolis or « rich city » is an imaginary port city featured in Filarete's Treatise. Hub, Berthold, *La "Sforzinda" de Filarete: Ciudad ideal y recreación del mundo*, Boletín De Arte, n.º 29, (marzo de 2018), pp. 11-36.

5 Gargiani, Roberto, *Vers le toit-jardin en béton, de Soufflot à Coignet*, in Gargiano, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 482-491.

6 Ibid.

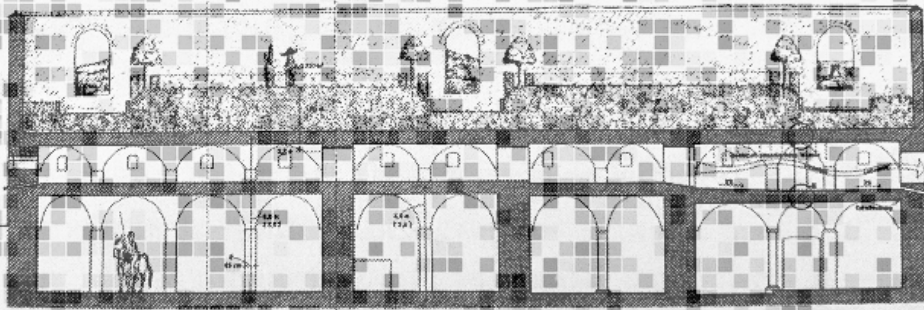
7 Le Corbusier, *Vers une architecture*, Nouvelle éd. Revue et augm. D'une lettre inédite de l'auteur prés. Par Eugène Claudius-Petit, Flammarion, Paris 1995. pp. 47.

The terraces of the apartment of Mr. Charles de Beistegui in Paris constitutes a pertinent example of roof terraces in reinforced concrete as an addition to an existing structure seen by Le Corbusier as a *completely new installation on top of an old building (being the site) the occasion of important research (seeing) the construction of the three hanging gardens (as) an eloquent response and a solid archive to modern roofing technology*.⁸ Probably going a step further, it is possible to identify in such an example a very imaginative relationship that these newly created artificial surfaces, conceived actually for an exclusive domestic leisure, establish with the city. Such urban terraces planted with greenery count with additional electrically controlled vertical displays that allow for a selective apparition of views on the city, constituting like this not only an example on the advancements of constructing artificial grounds on reinforced concrete slabs but as well on how to potentially equipped them for recreation and diversion. The terraces of the apartment of Mr. Charles de Beistegui are conceived in reinforced concrete by Le Corbusier for a private client but counts with a big urban potential already. Taking artistic movements as inspiration like surrealism or dadaism on one side, and the technological advancements that the technique of reinforced concrete brings on the other, Le Corbusier is able to concretize a space of a kind that is extremely innovative and not focusing only on the harmonized beauty of *pure plastic shapes and volumes under the light*, but that is welcoming another world more related with the sublime, the bizarre, and the unexpected; all of these being characteristics of the city as found, as a ready-made entity, and illuminating with such example, possible paths to follow in which to merge the advancements of technologies like construction systems or the electric power, in favor of better and more significant experiences of space, of urban public space through the means of artificial grounds. The terraces of the apartment of Mr. Charles de Beistegui are a floating ensemble of artificial grounds that establish such an imaginative relationship with the existing urban artifacts and an *increasingly surreal and dreamlike scenario* in itself, the *chambre à ciel ouvert* being the ecstasy of such an experiential use of artificial grounds.⁹

⁸ Le Corbusier, *Œuvre complète*, Volume 2, 1929-1934.

⁹ García-Germán, Jacobo, *Trece puntos, tres ejemplos y un tapiz que se dispara en muchas direcciones*, Revista Arquitectura, n° 333. (2003) pp. 20-29.

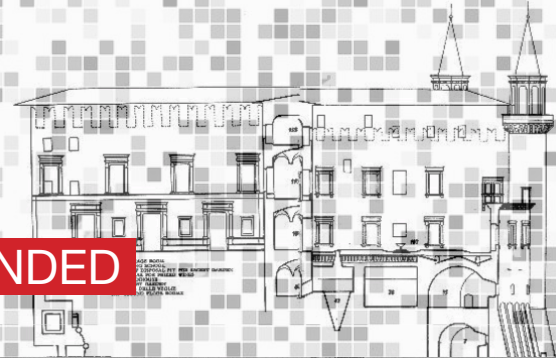
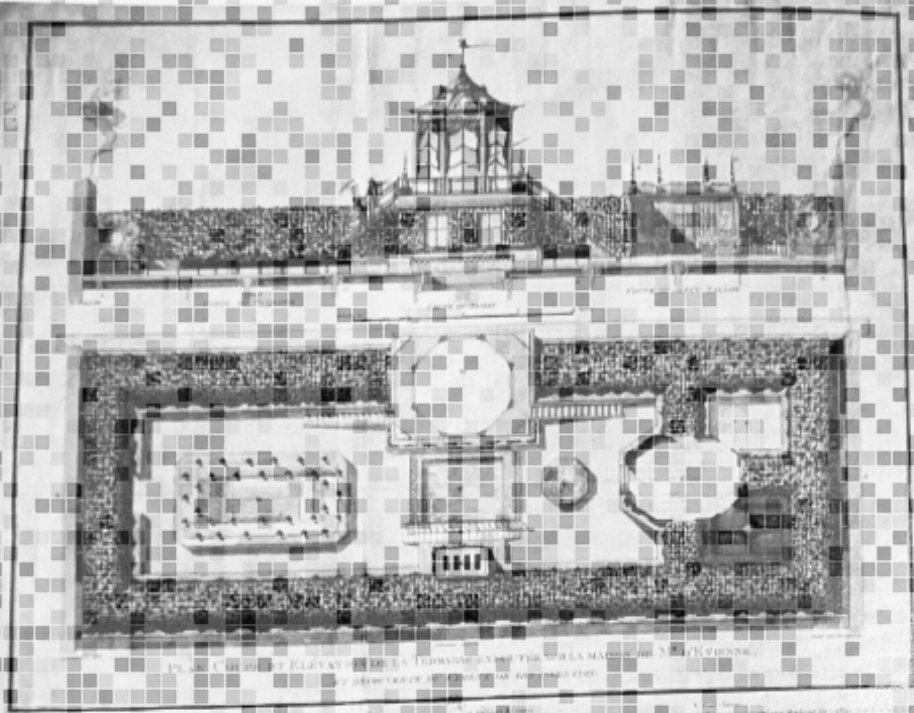
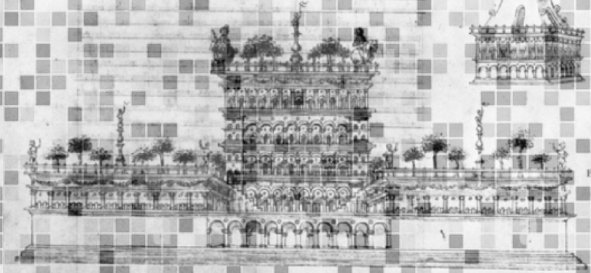
Figure 1. Section through the hanging Garden of the Piccolomini Palace. Pienza, Italy. XVth century. (J. Pieper, Pienza: der Entwurf einer humanistischen Weltsicht, Stuttgart, Menges, 1997, p. 428, fig. 1287) / Figure 2. Rooftop Garden at Menilmontant street, Paris. J.-G. Legrand. 18th century. / Figure 3. Hanging Gardens above the Rockefeller Center rooftops. Raymond Hood. New York, USA. 1935. Figure 4. Palazzo Piccolomini's Hanging Gardens. Rossellino. Pienza, Italy. 15th century. / Figure 5. Garden Palace close to Plusiapolis. Treatise of Architecture. Filarete. XVth century. / Figure 6. Section of the hanging Garden at Palazzo Ducale di Urbino. Attributed to Francesco di Giorgio. Urbino, Italy. 15th century. / Figure 7 & 8. Mr. Beistegui Apartment roof terraces. Le Corbusier. Paris, France. 1929.



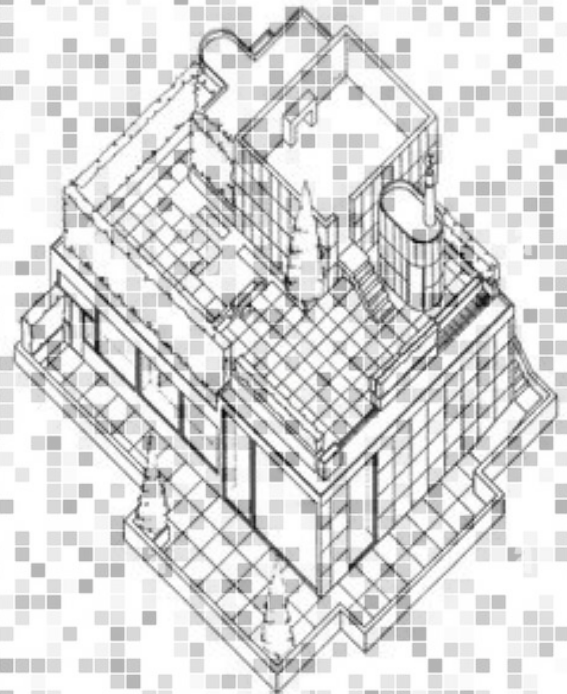
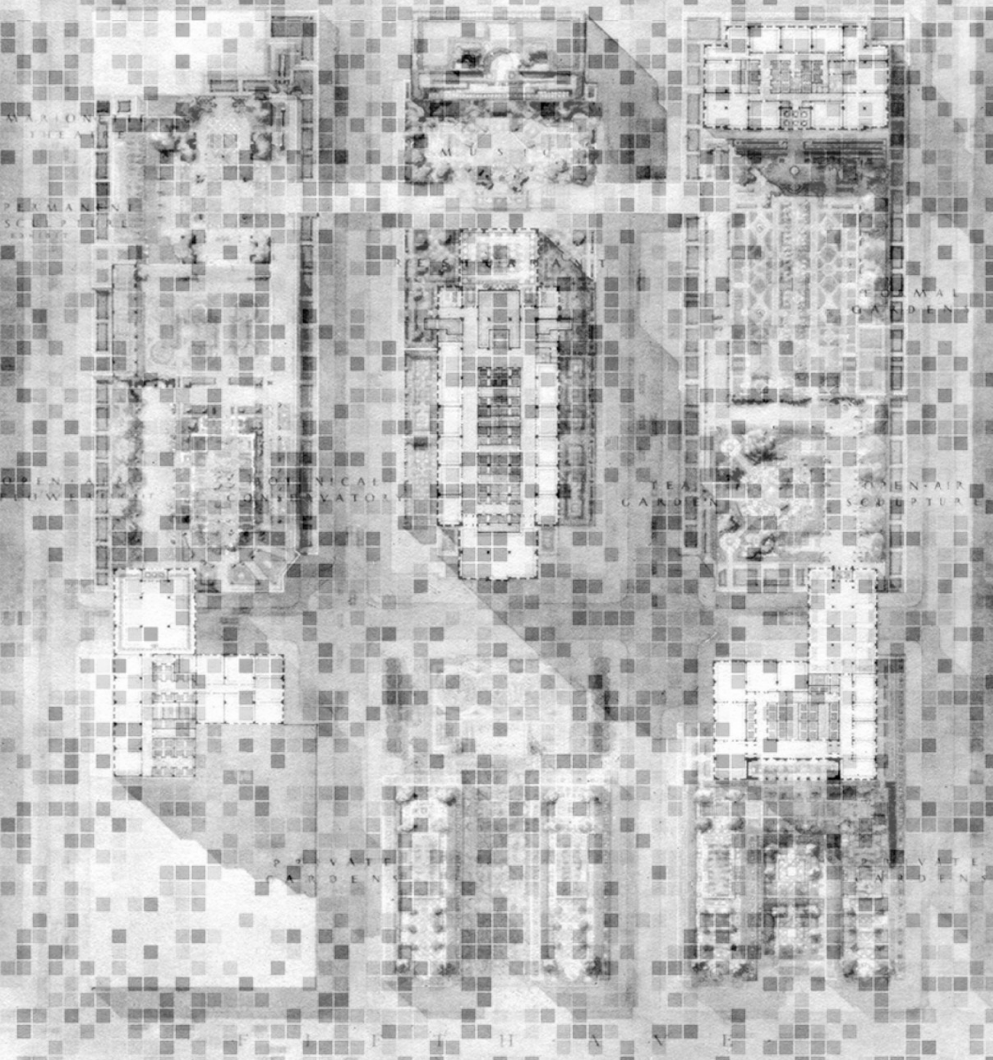
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Trying to look for a bigger or more collective example of garden-terrace constituting an early artificial ground as well but brought to the public scale this time, the look shifts to the North American continent. The garden terraces that architect Raymond Hood imagined for the roof tops at the Rockefeller Center, counting with a good knowledge on Le Corbusier's ideas through the lecture of the English version of *Towards a New architecture*, were proposed to cover the roof terraces of the basal buildings of the complex with an extensive network of greenery.¹⁰ In this sense, substituting by a green garden all the *asphalted surfaces and holders of water cisterns*, the users of the towers, growing from the eleventh floor upwards could enjoy of a much nicer view as well as would be able to use the green spaces located at this level.¹¹ These roof gardens were compared by Hood to the Hanging Gardens of Babylon and finally got built only on top of the buildings along Fifth Avenue. Even if the publicness of such spaces is not comparable to the scale of collectiveness featured in this thesis, they are already a very precious precedent featuring a more and more open type of artificial surfaces on which to enjoy free time towards a fully public paradigm.

¹⁰ Maniaque, Caroline, *Les jardins suspendus du Rockefeller Center*, in Gargiani, Roberto (ed.) *L'architecture, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 718-723.

¹¹ Ibid.

3.2

THE UNDERGROUND OF THE CITY AND THE CONSTRUCTION OF URBAN SLABS

The concept of Urban Slab becomes especially pertinent when bringing it to the scale of the city, imagining public spaces for a collectivity and shaped according to the needs of each era, trying to propose advancements on the quality of the urban built atmosphere. The possibility for a new urban slab built in concrete and taking a considerable extension to the scale of the city, forming like this an *artificial ground* for the city, was already imagined by François Coignet at the end of the 19th century.¹ This slab would contain cavities below itself for the passage of water and gas pipes and electric cables, as well as truly underground streets. From the moment François Coignet experimented with and tested the construction of flat floors in cement, this fact has triggered a theoretical line of thought amongst architects and the technicians of concrete. Along these thinkers that have devoted some of their time to researching in such matter, Eugène Hénard proposed in 1910 in his *Les Villes de l'avenir* - Cities of the future - the possibility to construct a monolithic slab made of reinforced concrete, built at a height of five meters above the natural ground, covering the streets of the city, and that would be able to hide below it all canalizations.² It is at this point, at the beginning of the 20th century, that the infrastructural basements start acquiring a remarkable importance in the conception of the city as a built environment. Such proposed slabs, like the one of Coignet or Hénard, are not anymore mere artificial structures built in one way or another to cover a certain function that finds itself into the underground, proposing like this a continuity of the surface of the city. Such artificial slabs, built at a remarkable height from the natural level of the city, to a point that is even imaginable to have covered streets below the new surface, are examples of true artificial grounds counting with infrastructural basements above the natural level of the ground, hosting in the below-slab spaces, a full new world related with the management of any technological device and a multitude of services. Not only because of the thickness involved in the constructive materialization of the slabs themselves, but together as well with the new buffer spaces they propose below it to install all the canalizations, piping and even serving streets and spaces, such infrastructural basements feature a way in which either below or above the level of the natural ground of the city, technical undergrounds are proposed as serving spaces additional to the traditional spaces of the city. It is important to comment that something similar was imagined already back

¹ This term is already used by Prof. Roberto Gargiani in his article. Gargiani, Roberto, *Vers le toit-jardin en béton, de Soufflot à Coignet*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 482-491.

² Hénard, Eugène, *Les Villes de l'avenir*, in *L'architecture*, XXXIII, n°46 (1910) pp. 387

at the 15th century by Leonardo da Vinci on the base of a couple of precedent examples along this century too.

It would be needed to refer first of all to the Filarete's Ospedale Maggiore in Milan founded from 1456 and known popularly as *Ca Granda*. Even if not completely being an example proposing a network of serving spaces below public spaces of the city, it is important to acknowledge that the Ospedale Maggiore, regarding back to the Ospedale degli Innocenti in Florence by Filippo Brunelleschi, learnt about how to conceive a raised surface through means of a slab that would host the main program of the buildings above it and would allow to fit additional serving spaces below it at the same time. This could be considered one of the reasons why the main level of the Ospedale Maggiore in Milan by the Filarete, is as well built as an elevated ground that allows to locate around its perimetral facades little shops on one side, and storage rooms below the vaults on the other side. Such below-slab spaces are reachable by boat, since the hospital is built next to a big water channel. Thanks to fact of building the hospital next to the channel and to the designed thickness below the elevated slab, that can as well be called *functional platform*, the water is canalized by means of sluices through superimposed pipes to clean the latrines, to drive the blades of a mill and to feed the laundries.^{3,4} *Ca Granda* was then a huge elevated artificial ground constituted by a main floor for the patients but that, at the same time, was equipped thanks to the additional thickness that the Filarete foresaw below it, with a functional layer able to supply clean water and evacuate the used ones; a very important feature for sanitizing the building especially being one hosting patients with a multitude of diseases.

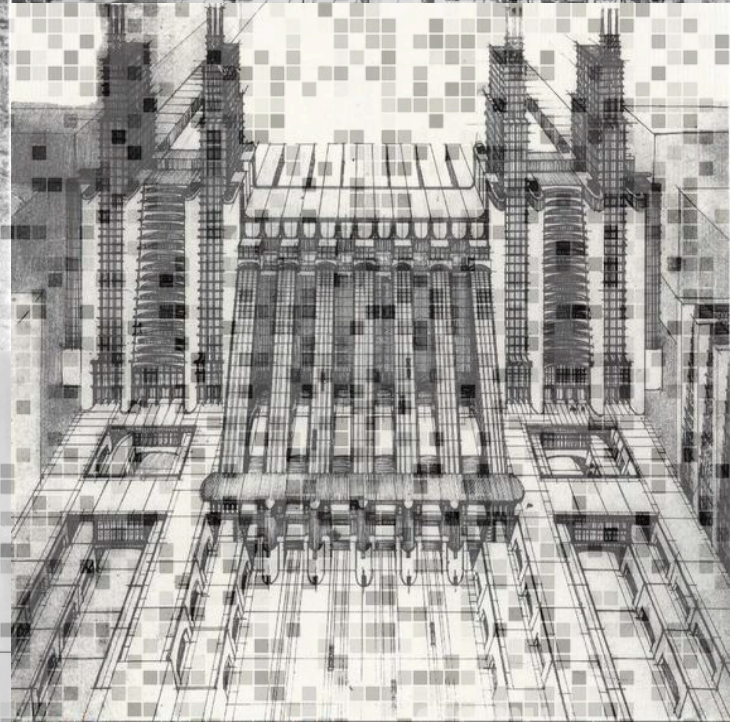
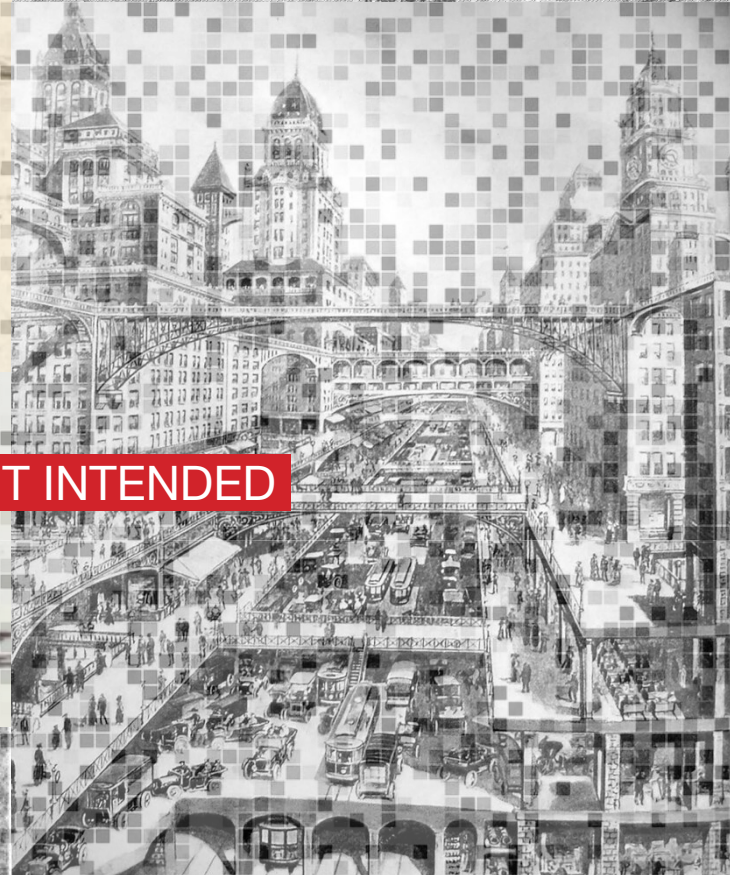
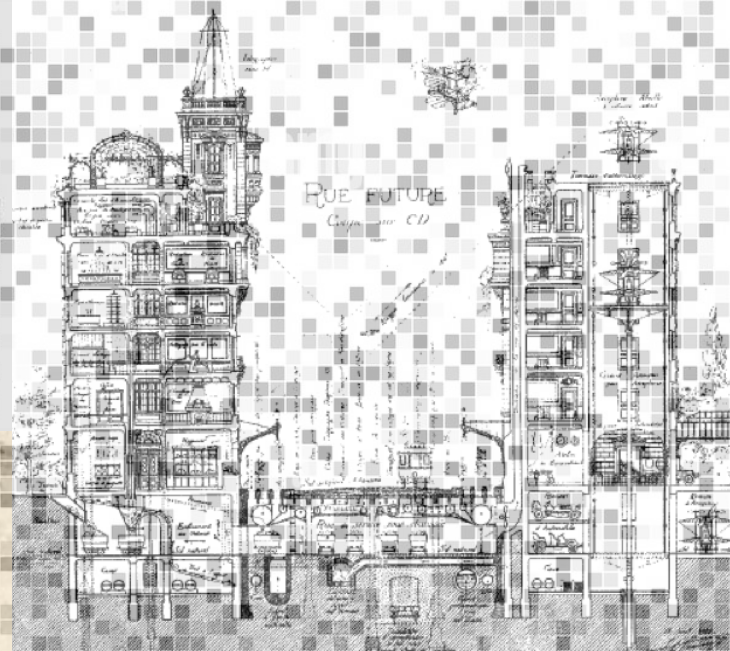
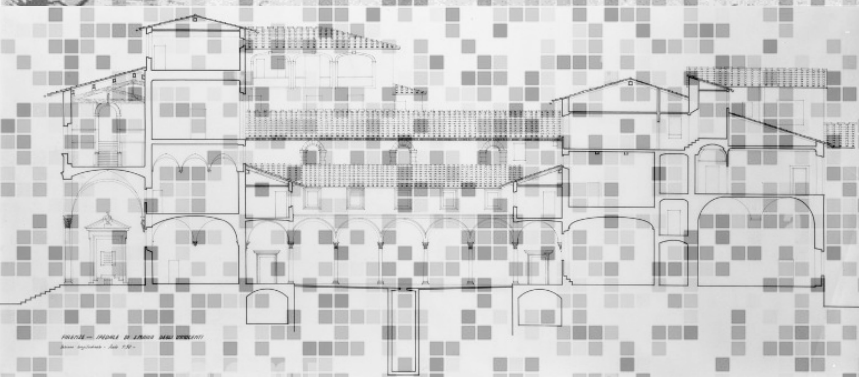
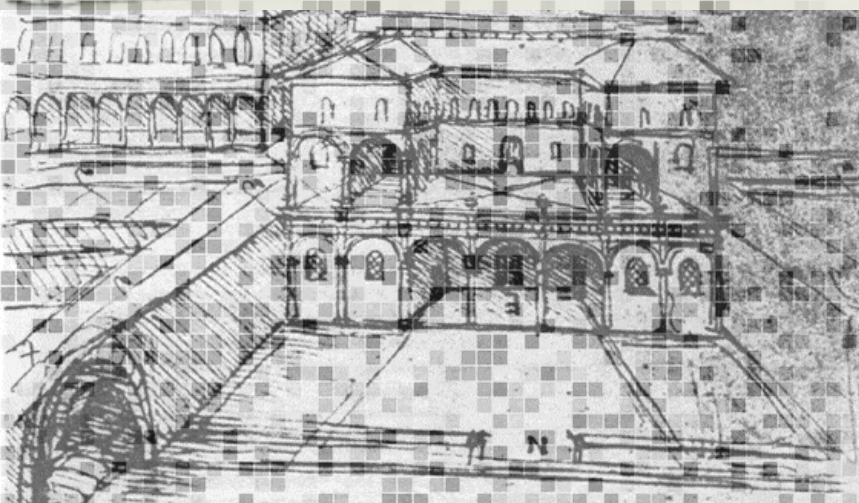
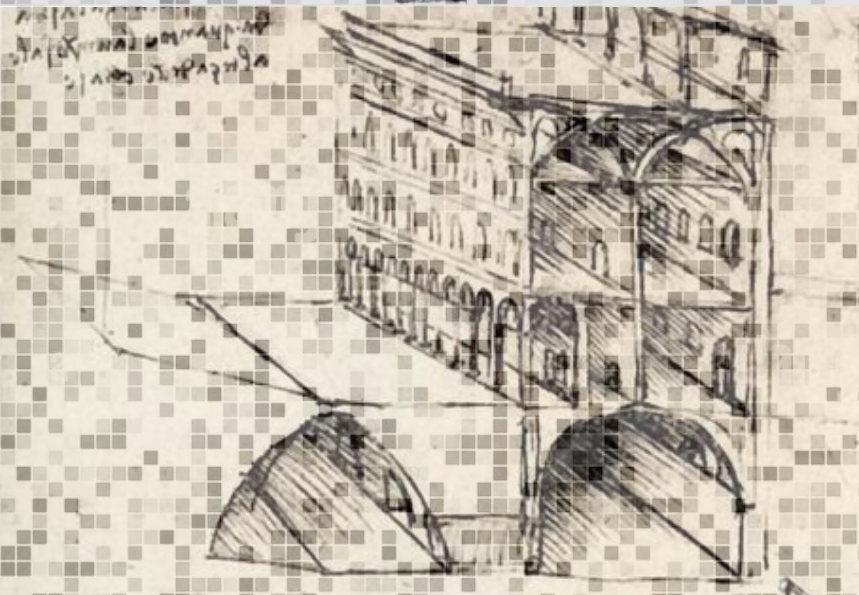
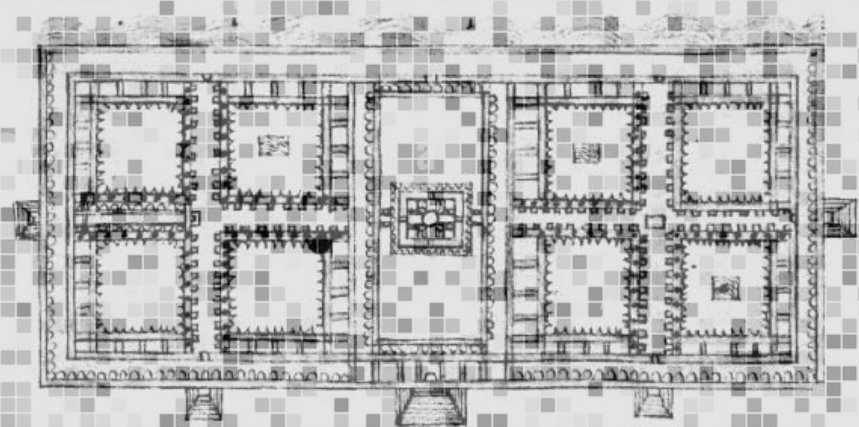
On the basis of such a functional example featuring the system of substructions on which the Ospedale Maggiore was built, Leonardo da Vinci imagined and drew during his stay in Milan from 1487 to 1490, a system of technical substructions under a city. In it, he featured instead a full neighborhood of a city counting with a system of below-slab paths showing with different kinds of separated traffic and canalizations placed inside of this layer *for the city's rubbish to be washed away by the waters* as he wrote in some of his manuscripts.⁵ He continued defining different kinds of dwellings, that were segregated as well: above, the houses of

3 It is the name that the author gives to this artificial ground. Ibid.

4 Ibid.

5 Da Caiano, Vittorio, *Structures horizontales à fonctionnement diversifié, de Brunelleschi à Kircher*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 234-241.

Figure 1. Floor plan of Ospedale Maggiore Milano. Ca Granda. The Filaret. Milan. 1456. / Figure 2, 3 & 4. Sketches drafting a town on two levels. Leonardo da Vinci. Around 1488. / Figure 5. Section of Ospedale degli Innoventi. Filippo Brunelleschi. Florence. 1419-1445. / Figure 6. Section of a future street. "Cities of the Future." Eugène Hénard. 1910. / Figure 7. Future New York. H. W. Corbett. 1911. / Figure 8. Città Nuova. Antonio Sant'Elia. 1913.



NO INFRINGEMENT INTENDED

princes and signers, below the ones of *people full of infinite evils*.⁶ *In the upper streets no carts may pass, so they are reserved exclusively for gentlemen; those below are for carts and other beasts of burden for the use and convenience of the people* he asserted. Through such descriptions, it is possible to imagine the presence of humans inside the infrastructural basements of this imaginary city. However, there is not the slightest hint of any description that would feature such spaces as properly inhabitable ones, properly imagined for people to move or to inhabit them. Maybe such spaces were imagined by da Vinci as counting with some torches fixed to the walls for bringing some light to the spaces, or maybe everyone had to carry one torch to be able to see something amongst the dark of these underground spaces. But in any case there is no mention to any design detail that would make such spaces suitable for human use. On the contrary, da Vinci leaves clear that these are spaces full of *infinite evils*. Being able to relate then more easily such below-slab spaces to the technical reasons that Coignet or Hénard would have imagined and represented in their ideas about better cities to come at the beginning of the 20th century.

Following with the legacy of Coignet as well as Hénard and having a look at the time of physical and ideological expansion of the North American city, having Manhattan as one of the most radical examples, several will be the visions that will contemplate the construction of an ensemble of slabs stacked on top of each other as in the case of skyscrapers, and serving different functions and different kinds of public circulations of several different ways of transportation like trains, metropolitan lines, cars, pedestrians. This is something that its clearly noticeable particularly in Harvey Wiley Corbett's proposal of a *Future New York* in 1911, in whose representation, using a perspectival section, is possible to identify several levels in which people and cars and trains can move, multiplying like this the available space that beforehand was available for such matters.

Such visions, taking the big North American metropolis as an example, and particularly New York, are going to inspire European architects too like for example the Italian Antonio Sant'Elia that in 1913-14 will draw his *Città Nuova* based once again in an underground of the city articulated in a system of urban slabs.⁷

Taking as a basal point the possibilities that reinforced concrete could offer, as well as belonging to the same line of thought that François Coignet triggered through his theoretical and practical work, Auguste Perret, that built already in 1903-05 a series of panoramic terraces in reinforced concrete together with his brother Gustave on top of their *immeubles de rapport* at rue Franklin in Paris, started writing about the potential that reinforce concrete could have on the de-

⁶ Ibid.

⁷ Gargiani, Roberto, *Plate-formes urbaines, de Hénard à Perret*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 671-676.

sign of the city already in 1914. Taking the fact of sanitizing the city as a major benefit, Perret was defending the construction of a new ground for the city, hold by an elevated concrete slab at a height of ten to twenty meters above the natural level of the ground, and under which *all public transportation services, and all other services will be carried out without embarrassment*.⁸ This concrete slab would be extended to the whole of the city ideally and would propose then a subsequent infrastructural basement for the whole city. It is in this same specifications that the figure of Le Corbusier appears next – as it is obvious to imagine since Perret was somehow his master – claiming authorship of the idea for urban elevated slab in his text *Le Plan* constituting the third out of the three texts composing the *Trois rappels à MM. Les Architectes* featured in L'Esprit Nouveau in January of 1921. According to Le Corbusier, he told Perret about his idea of a city built on an elevated slab and that he called *Ville-Pilotis* already back in 1915. The truth is that it was not until 1921 that a proper scheme of such idea got published by Le Corbusier. In it, Le Corbusier was considering exaggerated the thickness proposed by Perret of ten to twenty meters inside of which such infrastructural basement would take place. Instead, he said that his *Ville-Pilotis* would be raised of four-five meters, closer to what Hénard defended. Le Corbusier's idea of a raised slab that proposes a thickness below itself to deal with all the technical aspects, like for example all *life's excretions*, would include this time specific references to the composition and design of its structural system.⁹ He would call his new city *pilotis* because he would imagine to construct such slab hold by a grid of columns or *pilotis* that would serve as the foundations for every building constructed on top of this new ground.

In a similar line of thought to the previous examples, would be important just to mention Ludwig Karl Hilberseimer's *Hochhausstadt* or *High-rise City*, proposed in his treatise on urban planning of 1924 a vertically integrated high-rise city where residents would live and work in one seamless unit, having as well a new ground for living raised from the level of the natural ground and traveling up to apartments and down to factories in elevators.

One of the important aspects of building a new ground for the city, artificially raised of several meters from the natural ground, is that the sewer systems and other diverse canalizations located below-slab would be easily reachable in case of any need of maintenance. Additionally, its construction would be much easier compared to the difficulties of creating such systems in the natural underground of the city, having to pierce the earth and so on, as Auguste Perret defended in

⁸ Ibid.

⁹ Auguste Perret would refer to this particular service in his interview at L'Intransigeant in 1920. See Gargiani, Roberto, *Plate-formes urbaines, de Hénard à Perret*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 671-676.

1945 at a meeting of the municipal council of Le Havre while he was in charge of the city's reconstruction plan. Such reflections potentially shed light on the idea of an equipped ground for the city, that, through the construction of an equipped technological slab, can bring services and solve many of the problems and needs of the collectivity inhabiting the city.

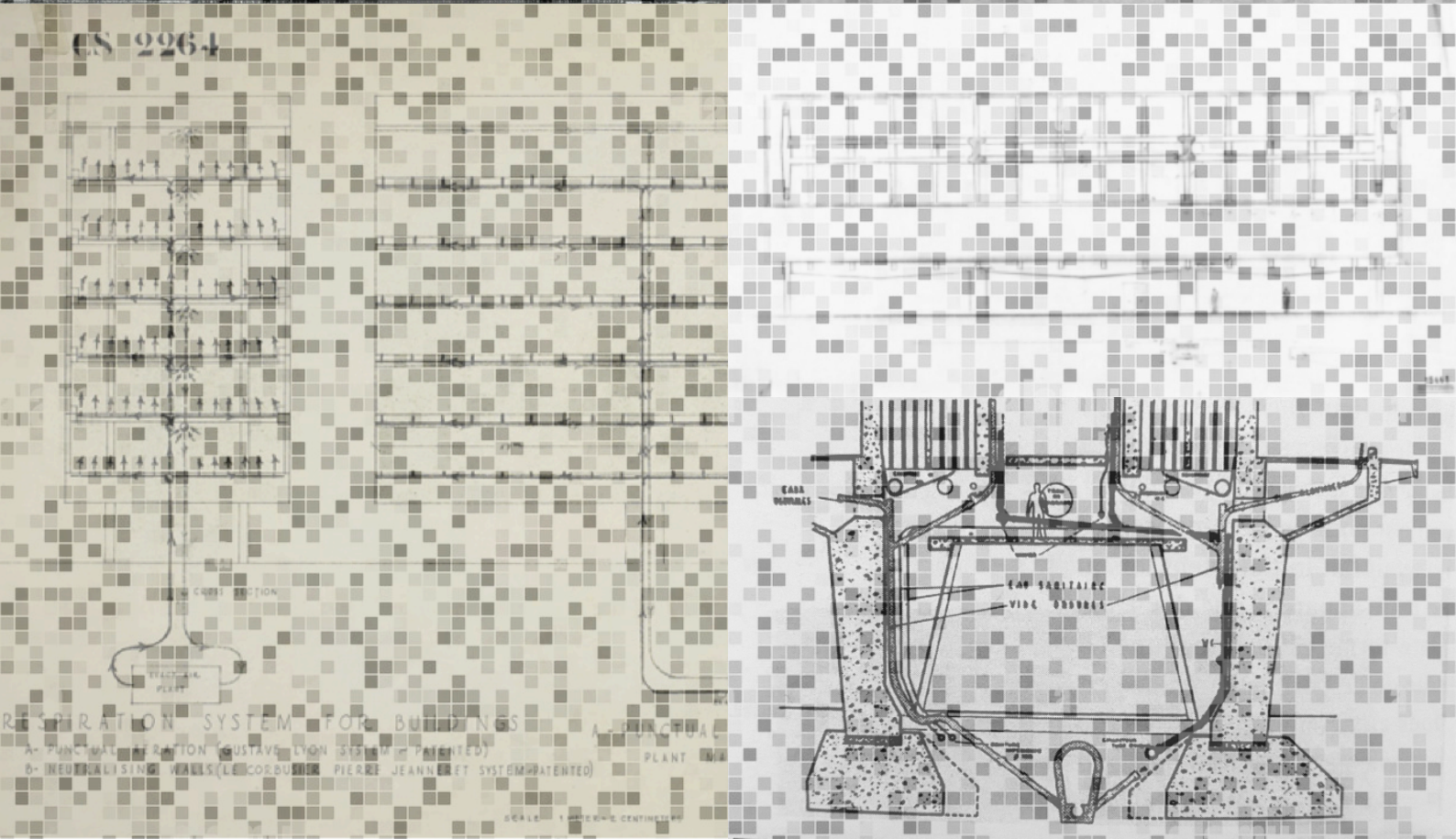
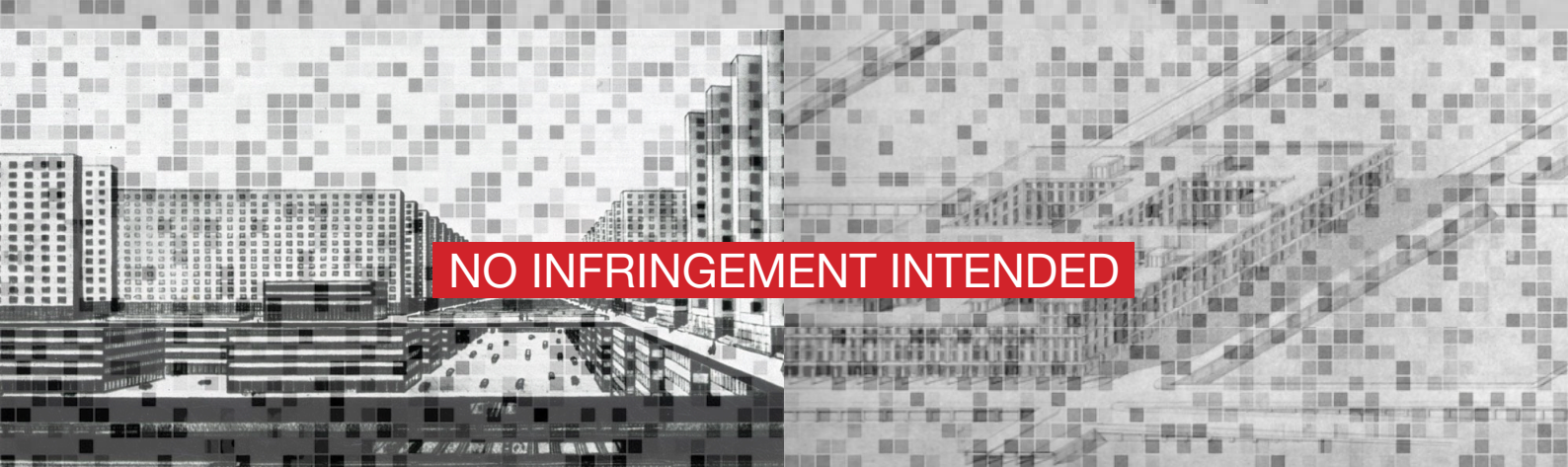
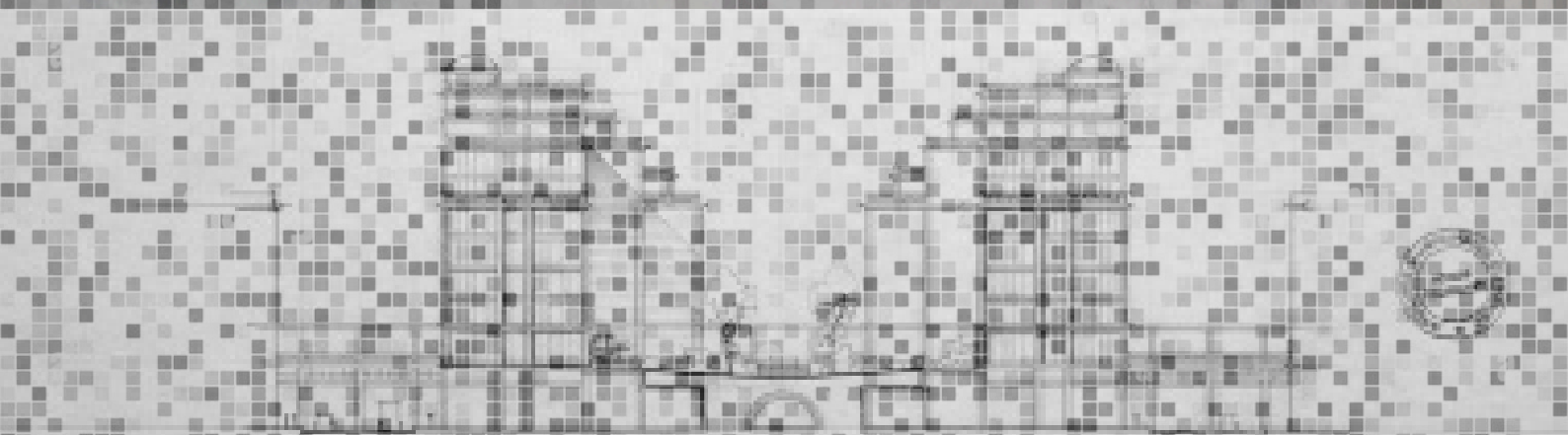
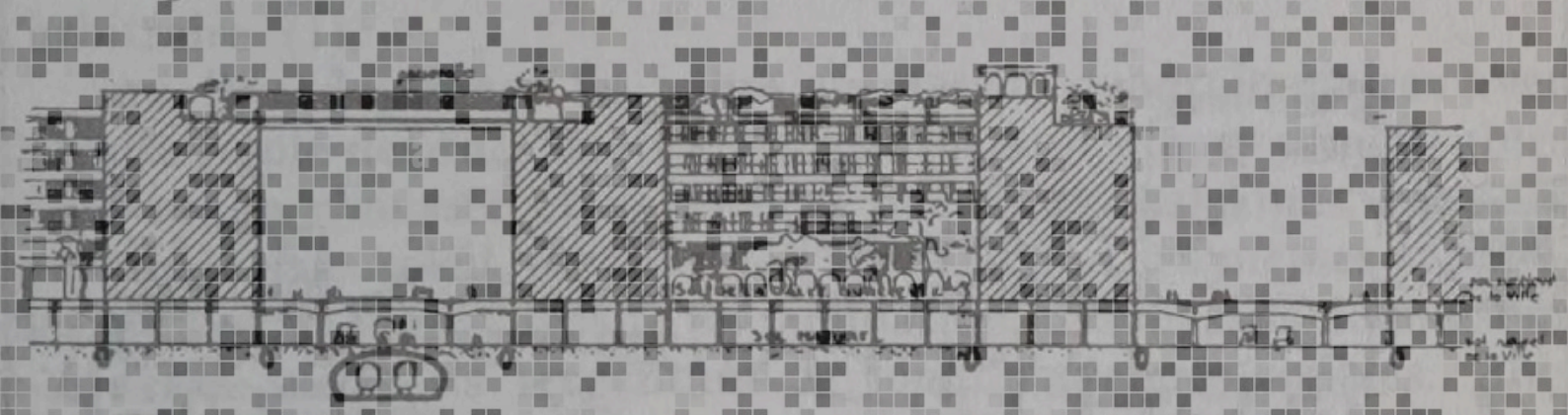
It was as well Le Corbusier that at the end of the 1920s would carry research and would experiment on a type of slab conceived as a technological structure integrated with heating and cooling technology, as a way of conceiving structural elements inside whose constructive thickness, several installations and canalizations could be installed, becoming like this *complex organisms*.¹⁰ Amongst his most remarkable proposals maybe it would be noticeable the invention of a *respiration system* for buildings in 1928 at the design proposal for the *Centrosojuz* project in Moscow. In it, the slabs contained a *technical void* in which some ducts for air circulation were installed. Such respiration system could remind of several advancements made previously in the United States on the matter of air circulation. John Gorrie published already in 1842 *Refrigeration and ventilation of cities*, a book containing research on potential solutions to render the air of cities healthier.¹¹ But Centrosojuz was not Le Corbusier's only example in which he imagined concrete slabs equipped with technology. He actually got to construct real examples of equipped slabs in reinforced concrete, probably being the most remarkable example the *artificial ground* - *sol artificiel* - at the *Unité d'Habitation* of Marseille, in which a new and more evolved *organism* is developed on the base of other previous buildings like for example the Swiss Pavilion in Paris (1929-33).¹² Le Corbusier makes a parallelism between the artificial elevated surface of cities and his new artificial ground for the *Unité d'Habitation* since it conceives the building as well as a city in itself. A two meter tall gallery was designed at the interior of the elevated artificial ground on which the *Unité d'Habitation* rests. Such void makes part of an ensemble of technical voids that go around the hall building, horizontally as well as vertically, hosting all aspiration and diffusion air

10 Rosellini, Anna, *Les plates-formes de Le Corbusier*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 741-750.

11 Leong, Sze Tsung, *Air-conditioning*, in Cha, Tae-Wook; Koolhaas, Rem; Leong, Sze Tsung; Chung, Chuiha Judy (ed.) *Harvard Design School Guide to Shopping*, Taschen, Köln 2001. pp. 92-127.

12 Le Corbusier already named this equipped slab as "artificial ground" in his sketches of 1951 on the *Unité d'Habitation* in Marseille. Rosellini, Anna, *Les plates-formes de Le Corbusier*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012. pp. 741-750.

Figure 9. Ville Pilotis. Section. Le Corbusier. Appeared in "Vers une architecture." 1921. / Figure 10 & 13. Le Havre. Atelier de Reconstruction de la Ville du Havre. Elevated streets system. Auguste Perret. 1945. / Figure 3. View. Hochhausstadt. Ludwig Karl Hilberseimer. 1924 / Figure 4. Respiration system a Centrosojuz Moscow. Le Corbusier. Moscow, Russia. 1928-1936. / Figure 6. Study of pilotis and beams. Swiss pavilion in Paris. Le Corbusier. 1931. / Figure 7. Section of *Unité d'Habitation* Platform. Le Corbusier. Marseille, France. 1945-1952.



ducts, heating pipes, every beam in the base being pierced with a circular whole to allow technicians to pass through the whole equipped slab for maintenance, installation of extra systems, or reparations of any leak.

Big urban slabs constituted a specific topic when talking about the architecture of the city from the 1960s onwards. In France for example, many were the cities or quarters that got built from scratch with the help of the strategy of a monumental concrete slab or *dalle*, that at the same time were constituting new artificial – generally pedestrian – grounds for these cities-to-be, segregating like this all motorized traffic and railroads below, inside of an infrastructural basement of serving spaces. These new cities or quarters from which can be highlighted cases inside and around Paris like for example *Front de Seine*, *Argenteuil*, *Les Olympiades*, or *La Défense*, were even defined as cases of *urbanism on slab*, which have been extremely controversial examples of public spaces built on a new artificial ground since their inception, being labeled as proposing inhumane, out-of-scale spaces, lacking vegetation, shade, amenities, and also sometimes defined as unsafe and dirty.¹³ If all these are the adjectives that residents' associations, the media, and citizens in general have used to refer to the open spaces in the open air, expressing their enormous dissatisfaction with the mediocre quality of these spaces, one can glimpse negative comments about the physical state of the spaces located underneath the slabs. Seen as a turning point in the construction of the city, the slab of la Défense arrived conceptually in the Nineteen Sixties as an urban revolution enhanced by the governors and politicians of the time. The idea was to try to deal with all the density and congestion of flows at a specific space, proposing safe spaces for pedestrians as well as connecting them with the rest of mobility like automobile routes and train networks.¹⁴ However, and even if it was a good step forward dealing with the complexity and congestion of the city to come, many have been the improvements in transportation and mobility in general from which such kind of urban strategies could benefit nowadays.

¹³ This is the English translation from French *urbanisme sur dalle*. For more information see Lefebvre, Virginie, *Paris, ville moderne : Maine-Montparnasse et la Défense 1950-1975*, Norma éd, Paris 2003.

¹⁴ Picon-Lefebvre, Virginie, *Les dalles urbaines de la Défense et de Maine-Montparnasse*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques et Universitaires Romandes, Lausanne 2012, pp. 845-849.

3.3 INHABITING BELOW-SLAB SPACES THROUGH TRANSPORTATION EQUIPMENT

As it was specified at the beginning of this chapter, for the study of the concept of artificial grounds, both newly constituted or natural underground spaces, are taken as having an analogous conceptual value in this research. However, the operations to deal with underground spaces directly excavated and dug inside of the natural ground of the city, are differing from the other cases seen up until now. When excavating spaces and cavities inside of the natural ground to place installations, canalizations or extra spaces for the city, probably not only the logic of the Typical plan can apply for designing a structural framework concept. As well other structural solutions, adapting to the nature of every case, can be applied. There are as well diverse possibilities that can make the slabs built directly at the natural level of the city, replacing like this the natural ground of the city and constituting artificial grounds, to have different constructive natures and diverse structural solutions applying in their constructive thicknesses.

The world of the underground in general has traditionally been related with the liturgical action of burying, of getting inside of an unknown depth, often unexplored too. Underground spaces have been along the centuries, and still nowadays are, often related to dirt, to bad smells, to diseases, to death: maybe because of the lack of light, maybe because of the fact that sometimes it is possible to find recesses where dangers can hide in it, etc. Especially in the city, there is still today a feeling that such underground spaces could be insalubrious, dangerous, and not very desirable. It is not that of a coincidence since from several centuries already, the underground of cities have mainly been used for technical reasons, especially to install the first modern sewage systems. For example, in 1756, at the moment of Lisbon's reconstruction after the big earthquakes and the later fire of 1755, Eugénio dos Santos, an engineer whose team was asked indirectly by the Marquis of Pombal (in charge of the reconstruction of the city) to propose solutions for the reconstruction of the city, submitted a drawing in which a system of sewers was represented below a street, in the middle, in the underground part of it, as a sort of big gallery or tunnel collecting the used waters of the inhabitants of the adjoining buildings.¹ Twenty years later, Pierre Patte proposes as well a similar solution in his well-known *Profil d'une rue* - Section of a Street - in which it is possible to identify another big central underground gallery collecting the used waters of the adjoining buildings.² Through such examples it

¹ Tallon, Andrew J., *The Portuguese Precedent for Pierre Patte's Street Section*, Journal of the Society of Architectural Historians 63, no. 3 (2004) pp. 370–77.

² In this drawing it is possible to contemplate how the new constructive techniques and all the available technology at the time is implemented to the city, both meaning the collective space like the street, and

is possible to understand that the underground of cities started being used for evacuating the dirt, to expel the defecations out of the city, to transport the insalubrious biological rubbish until somewhere far from there. A kind of digestive system of the city, or better said, of intestines, more specifically.

It is amusing to see how, out of the fantasy, a series of Marvel's comics featured mutant characters during the 1980's like *Cerebus*, *Ronin* or *Dardevil*, the last one telling the story of organized ninja clans that were fighting for the control of New York City's underworld. It is in this context that Kevin Eastman and Peter Laird created the Teenage Mutant Ninja Turtles (TMNT) comic book series as a sort of parody somewhat featuring the story of a former ninja master, that was expelled from his clan in Japan and ended up in New York, having to take refuge in the sewers.³

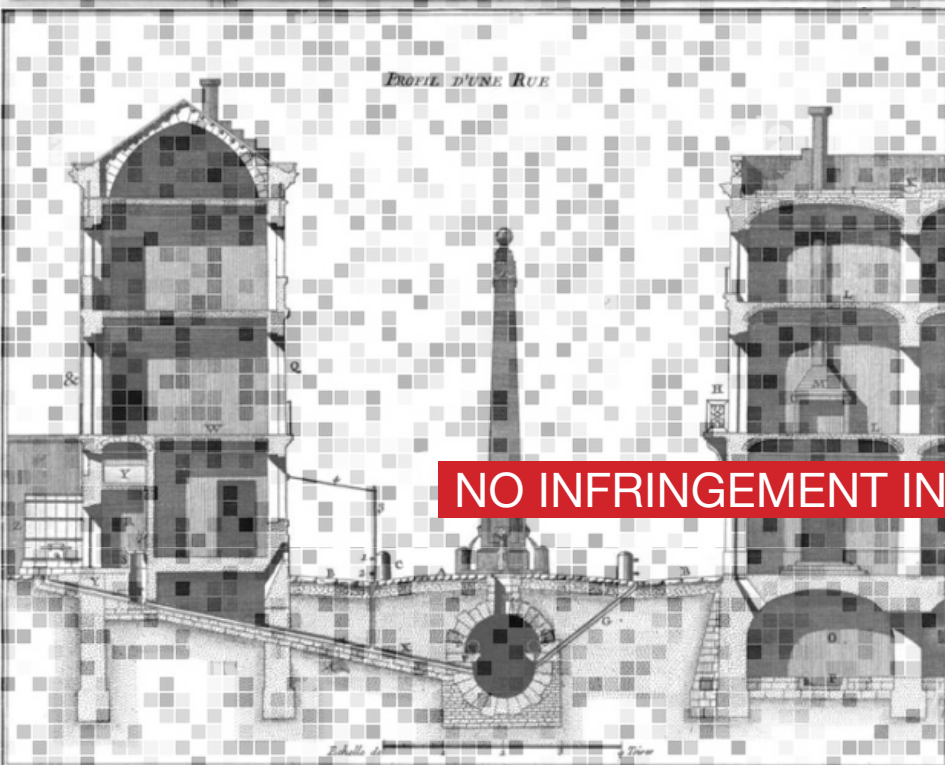
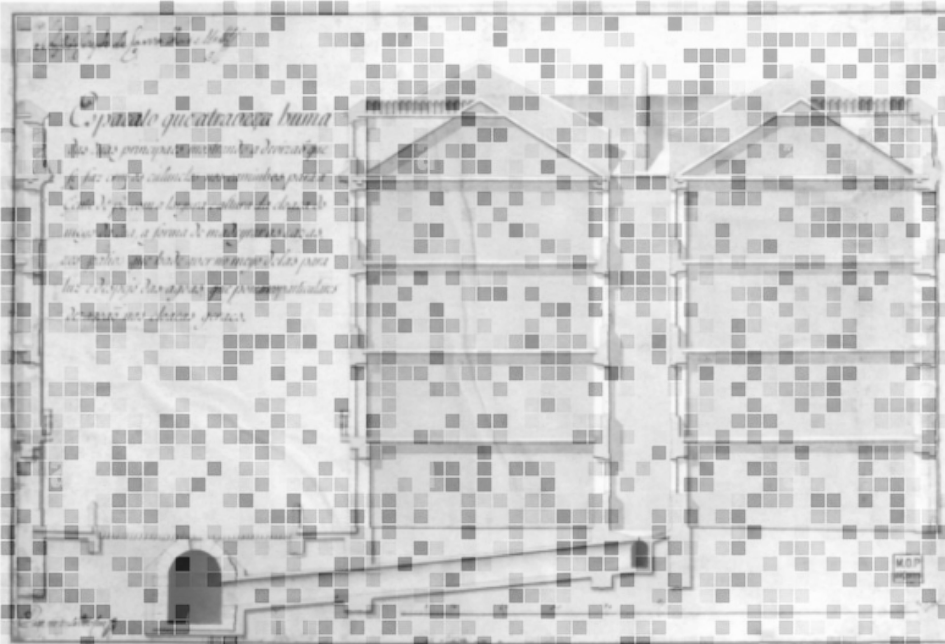
Probably seems crazy to attempt to place such a story of fantasy inside of this discourse but, sewage systems of cities have been arousing the curiosity of the population since the beginning of its existence which, probably was not envisaging to find a place to live inside them, but certainly wanted to have the possibility to access such spaces together with someone that would help visiting them. Already in the first half of the 19th century, it was possible to visit these newly excavated tunnels in the underground of big cities like London or Paris. Eventual visits were organized for the curious to see what was going on inside these newly and recently rendered *accessible* underground spaces. A sort of *underground tourism* started to take place inside of the new technical systems of the Modern City.⁴

as well the private apartments constituting the buildings. One of these buildings counts with a flat roof terrace, a walkable artificial surface that substitutes the former inclined roof of buildings, and that offers an extra available space for its inhabitants, at the same time as proposing a structural solution that reduces the weight to be carried by the structure, accounting on the parallel researches that Pierre Patte would have been carrying in such matter, already in the second half of the XVIIIth century. Gargiani, Roberto, *Vers le toit-jardin en béton, de Soufflot à Coignet*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Constructio*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012, pp. 482-491.

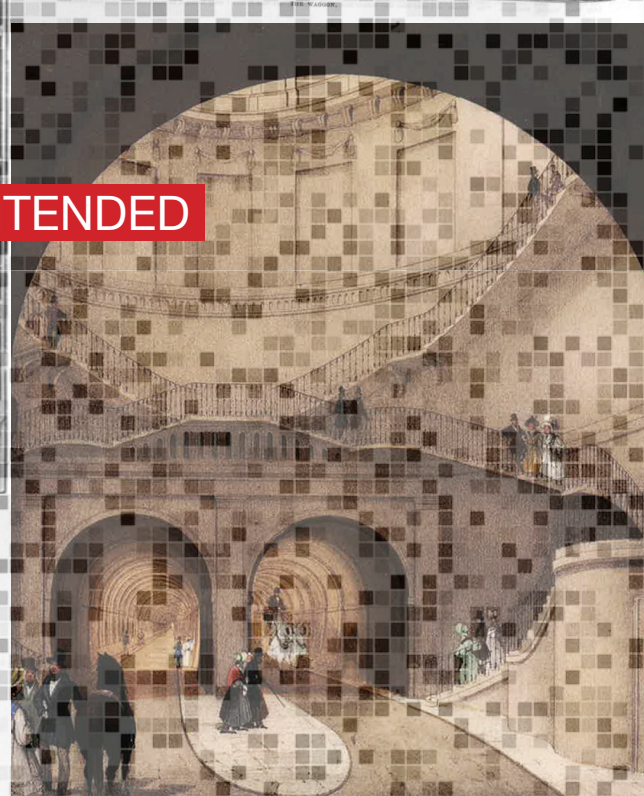
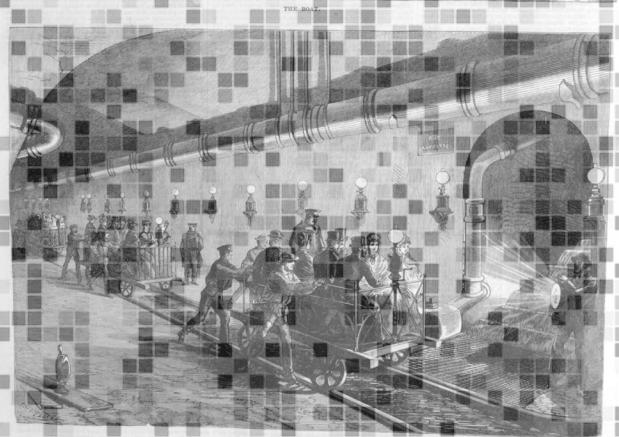
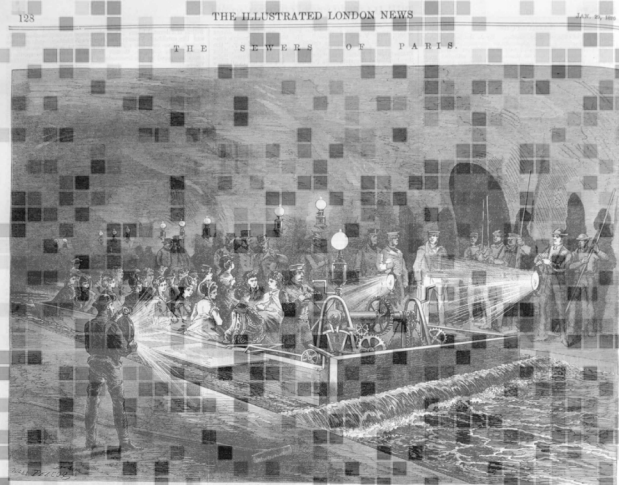
3 There he will end up meeting four turtles, bought previously in a pet shop by a kid, and slipped accidentally inside of the sewers. Because of a mutational substance present in the underground sewage system of New York City, the five of them will mutate, the former ninja master becoming a sort of humanoid rat, since he spent that much time with rats in the sewers, and the turtles becoming humanoid turtles that later be taught on how to fight like proper ninjas by their new master Splinter. Such a successful story, later transformed into a TV series and all kind of merchandise, has shown, with lots of fantasy, how was it to live inside of the sewers As a curious fact, the four teenage mutant ninja turtles, that live in the underground sewage system of New York City with their master, and basically had pizza as the only meal in their diet, they are called Leo, Donnie, Raph and Mikey corresponding upon the full names of four of the masters of Italian renaissance so Leonardo (Da Vinci), Donatello, Raphael (Rafaello) and Michelangelo.

4 Reques del Río, Alberto, *El ascenso del subsuelo. Estrategias de ocupación del subsuelo urbano*, Mas-

Figure 1. Eugenio dos Santos sewage system proposal. Lisbon, Portugal. 1765. / Figure 2. Section of a street. Pierre Patte. 1977. / Figure 3, 4, 6 & 7. Sections and views. Brunnel's Tunnel under the Thames. London. 1825-1843. / Figure 5. The illustrated London News. Visits to the sewage system of Paris. 1870.



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Initially, the underground of cities got used mostly exclusively to host serving facilities adding comfort to the fact of living in the city. However, at a certain point, and probably having as well as a precedent this curiosity that got born together with the construction of such underground infrastructure like sewage systems, the underground of cities started to be used as well for other functions that conceptually involved the human presence underneath the surface of the city. One of the first examples of an underground public space in a city, designed and built for being a space that would welcome humans underground, is Brunnel's tunnel under the Thames in London. After several failed trials to construct a tunnel that would allow especially pedestrians to cross from one bank of the river to the other, since the traffic of goods and people got unsustainable to be done through bridges and boats crossing the river, in 1825 started the construction of an underground passage to connect both sides of the Thames on its passage through central London. The huge quantity of people that had to cross the river daily and the big amount of goods that had to be transported from one side to the other, reached such a level of congestion that the proposal of constructing an underground tunnel in order to solve the dramatic situation appeared as an innovative idea potentially able to offer a solution. French engineer Marc Isambard Brunnel (1769-1849) was in charge of the construction of such an infrastructure meant to be one of the first times that below-slab spaces in the city could be used in a collective way, or would be though and designed especially for serving the collectivity, implying the presence of human beings inside such public spaces-to-be. Because of the difficulty and novelty in which the tunnel had to be carved, allowing a river to flow above it, lots were the problems that were encountered along the almost twenty years of construction of the tunnel, both in terms of economic and human resources. In 1826, only one year after the initiation of the works, Brunnel organized a feast inside the already carved first meters of the four-hundred-meters-projected tunnel in order to encourage the workers that, amongst other difficulties, had their salaries decreased. For it, Brunnel ordered to place some tapestries and gas candelabra in order to make of the tunnel a more welcoming space, probably without being conscious of the fact that what he was doing was to try to render inhabitable such spaces, to transform for one of the first times what, up until these days, would have been an exclusively serving and infrastructural space in the city into a properly inhabitable for humans one. After this first feast, several were the events that were hosted in the tunnel, like for example visits and as well concerts, probably taking place as part of this new phenomenon appeared at the beginning of the 19th century being the so called *tourism of underground* spaces, and that, along the following years, tried to raise a little extra budget to be able to continue meeting the high cost of the works.

Brunnel's tunnel can be seen as one of the first projects of urban mobility at the very beginning of the modern city, in the first half of the 19th century. With its opening in 1843, the city of London assisted to a revealing event, hawking the beginning of modern public occupation of the urban underground. Even if the tunnel still had to serve a functional function, which was the mass transportation of people across the Thames, for one of the first times, the presence of the collectivity underground was taken as one of the major design exigences of the project. Brunnel's tunnel was a public infrastructural underground space for the passing of the collectivity. One of the first underground public spaces recorded. However, and because of the lack of a proper lighting system and maintenance, the tunnel spaces started to be considered as insecure and more and more marginal along the years. The complexity of human life had the sufficient freedom there to get developed, helped by the lack of light and dark recesses, so, little-to-little, street vendors, thieves and prostituted women started to become Brunnel's tunnel main inhabitants. From 1869 the tunnel was highly deteriorated and was acquired by the East London Railway company, that installed rails in order to substitute the original pedestrian connection with one made for underground trains.

It was precisely in London that some years before, the world assisted to the opening of the first underground railway connection between Paddington and Farrington in 1863. The underground was used once again to host technical functions, to serve. However, the collectivity had to be able to reach these trains in the underground. The fact that a broader public had to have access to the newly created underground railway services brought with it as well the need of designing spaces of transition between the surface of the city and the access to the train. The spaces that had to host the platforms for accessing the trains supposed a big list of new conditions in terms of the functioning, morphology and design of city spaces.

In cities like London, Paris or even cities in the United States, like Chicago or New York, because of the apparition of underground metropolitan train lines at the very beginning of the 20th century, many metro stations, originally, started needing to be covered by a new ground after having been excavated. Trains could circulate through vaulted tunnels, that could even be excavated without removing completely all the layers of earth above them, but just as a pierced cavity. But at the stations for example, the moment in which humans had to join the underground level from the level of the city, more space was needed in order to perform such access. It is in some of this cases that a big hole was excavated and then, the ground of the city had to be reestablished artificially, for which construction, a

slab was imagined in so many cases constituting a new artificial ground in the city. Just before a use of reinforced concrete in a massive way would take place, such slabs started being built at the beginning of the centuries many times with the North American building system of iron and brick strip floors.⁵ Originally this system started to see the light of day in the second half of the 19th century, the moment of its expansion being the years following the Chicago fire of 1871. The system of steel columns and beams, combined with brick coving and a layer of concrete, spread in a massive way, back then, having the reconstruction of the city as a reason amongst other things. Such system was applied for example to build the slabs proposing a new ground on one side and serving as roof on the other, at the first metro stations in Paris along rue de Rivoli for instance.

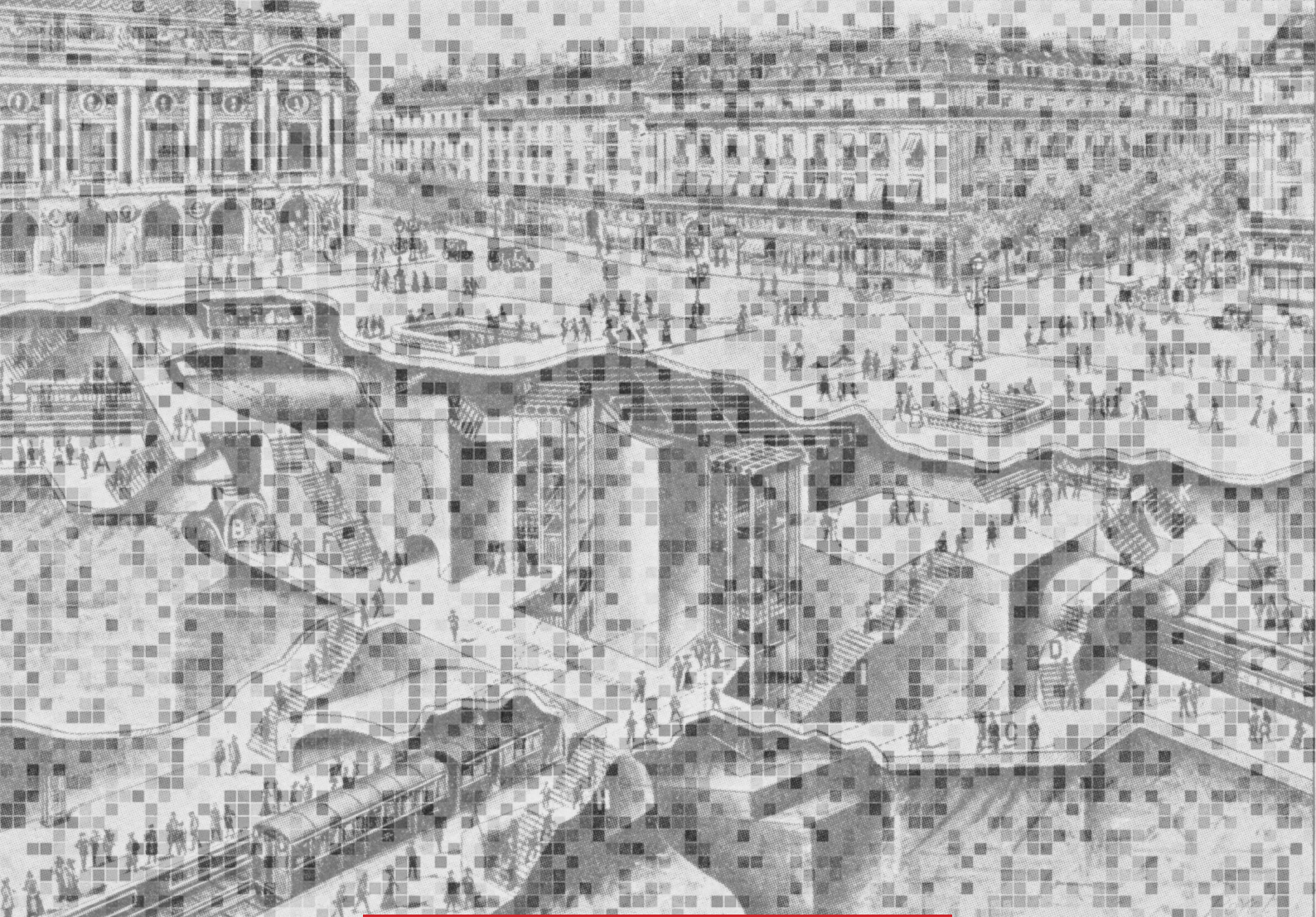
It was during the summer of 1900 that the first metro line in Paris got inaugurated. For it, Hector Guimard had been in charge to design and produce elements that would pay special attention to the threshold spaces between the surface of the city and the underground metro lines, serving then as entrances to the underground. He got commissioned to design these entrances to several metro stations at the very beginning of the 20th century (1900-1904). Guimard's canopies are world-wide famous examples of Art Nouveau artifacts that he imagined and designed after having visited Belgian architect Victor Horta's work in Brussels, reinterpreting like this when coming back to France Horta's Art Deco's architecture. Nevertheless, the interior spaces of the metro tunneling systems were not designed in an analogous way. Functional spaces hid behind these spatially designed entrances, like the narrow and dark accesses to the trains that related mostly still to the world of serving spaces that were not designed at all looking for human-specific spatial qualities.

Such spaces were still during the first years of the 20th century functional spaces that only contained the minimal components for allowing people transit through them; steps going downwards, some artificial lighting, basic signalization and a flat an elongated ground constituting the platform from which it was possible to access the trains.

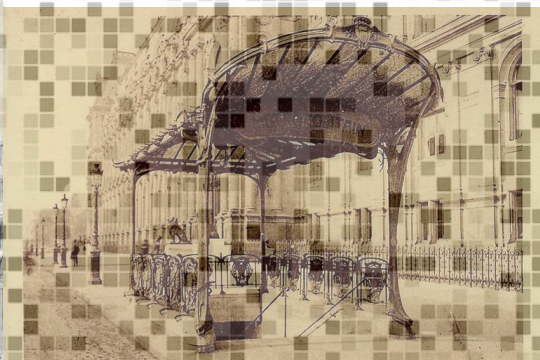
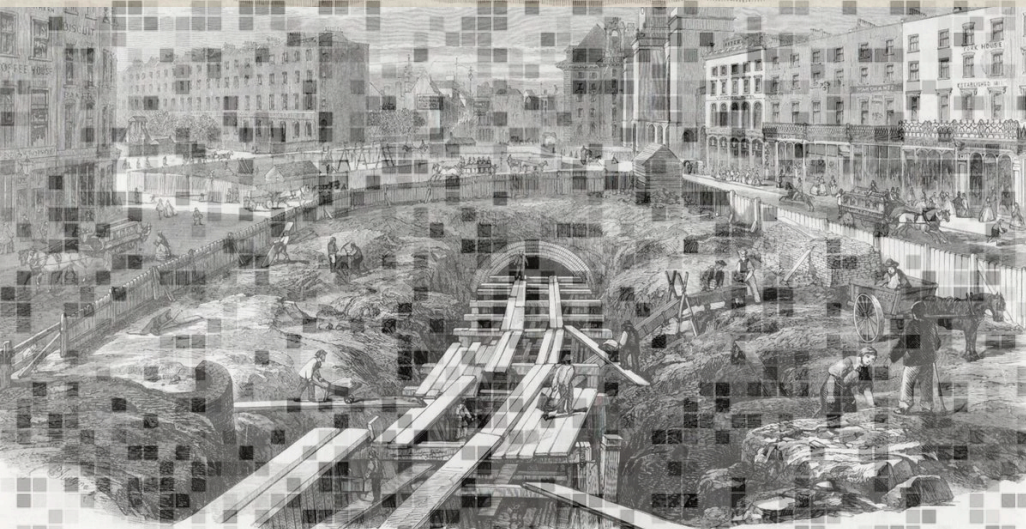
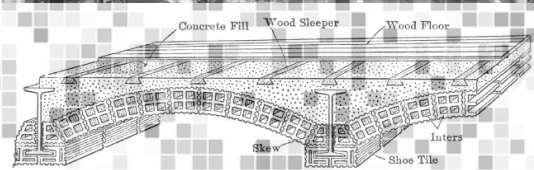
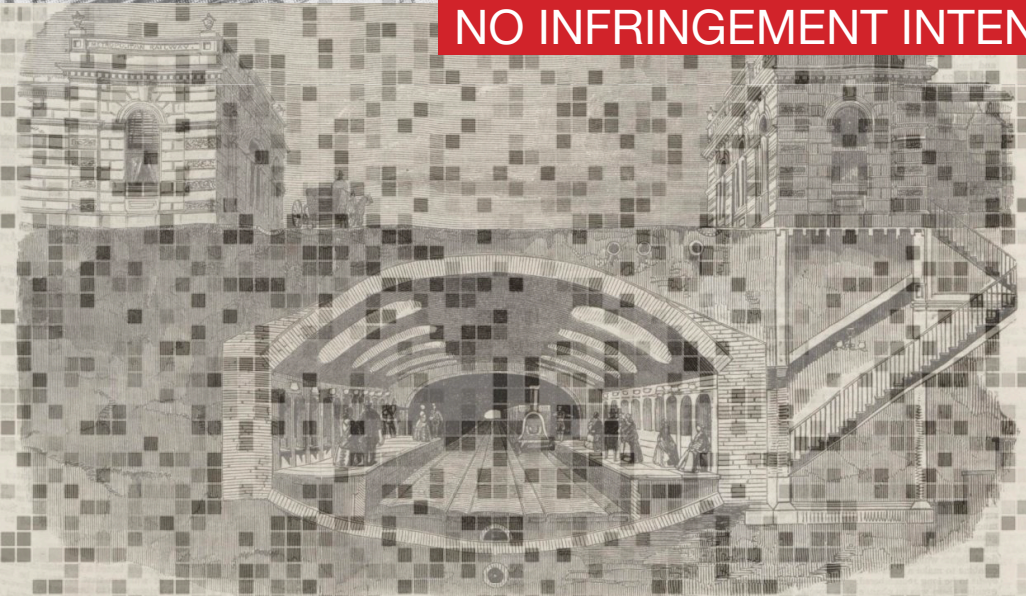
In the path for understanding the potential that exploring spaces inside natural undergrounds can offer, as well to threshing the complexity of artificial grounds in

⁵ Gulli, Ricardo, *Les Planchers à plates-bandes en fer et brique dans la construction américaine*, in Gargiani, Roberto (ed.) *L'architrave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Construction*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012, pp. 522-528.

Figure 8. Axonometric view of the crossing networks below Place de l'Opera in paris. Beginning of the XXth century. / Figure 9 & 10. Section and construction of the first metro line in London. 1863. / Figure 11. Construction of the metro in Paris in Rue Rivoli. Paris, France. Beginning of the 1900s. / Figure 12. Sketch. Iron and brick strip floors. Second half of the 19th century. / Figure 13 & 14. Hector Guimard's canopies for entering the metro stations. Paris. 1900-1904.



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Paris. — Chemin de fer Métropolitain. — Entrée de la station de l'Hotel de Ville.
Le Métropolitain - Sous-Station de l'Etoile



THE METROPOLITAN (UNDERGROUND) RAILWAY. — WORKS IN PROGRESS AT KING'S CROSS.

the city, there are two main transportation systems that, from their invention until nowadays, have been traditionally using the underground of cities, natural and newly constituted, for existing and further developing inside increasingly denser urban conditions. Once again, the structural nature of the spaces is going to differ from the Typical plan paradigm especially when speaking about tunnels for trains and cars. However, if speaking about stations and parking garages, it is possible to find references back to more free organizations of the ground, counting with a more or less rational or gridded disposition of columns holding the slab.

The invention of the steam machine in the 17th was the first milestone accomplished for the invention of the steam locomotive in the 18th century, and with it, the invention of the train. Adding to such inventions the one of the internal combustion engine in the 19th, the base for automobiles to move autonomously, the Modern city has been marked from the very beginning by these motorized modes of transport which were already fully mechanized. This fact is one, amongst other several ones, that have influenced the life in cities from the modern period. Partly thanks to such technologies, cities have experienced an exponential demographic growth, concentrating in this way larger and larger masses of population, being able to move faster along the territory occupied by the city, generating urban collectivities forced to live together and to share all the problematics of access to services, limited amounts of space and general urban congestion, each century reaching higher rates. The reason why it is considered fundamental to speak about motorized ways of transportations in this thesis is because of its important presence in the city, not only because of what they mean in terms of the possibilities they approach, but as well because of their physical presence in the urban geography, generating boundaries, problems of storage, disconnections or traffic jams. Motorized means of transportations like automobiles, buses and trains have had and have an impact both offering faster connections but interrupting the city as much. In this reflection towards a new understanding of Artificial Grounds in the city, it is important to highlight that these means of transportation, traditionally disturbing on the surface of the city, have been proposed to be segregated into different layers along the history and even to inhabit the depths of the city, being possible to locate them into the underground and often below the slabs constituting Artificial Grounds, inhabiting the below-slab thickness.

In parallel to the development of metro systems amongst the biggest European cities during the last part of the 19th and very early beginning of the 20th century, in the United States appears the project to construct a big infrastructural machine devoted to collective transportation, New York's Grand Central Terminal,

The World's Largest Railroad Terminal.⁶ Such building is quite of a big example in scale, reassembling already quite a huge level of complexity in terms of increasing human flows and the technology that was transporting them. Already implicit in the way in which the station is promoted and published on the media, the terminal is taken as an actual machine, and the magazine *Scientific American* published and represented it of course as a sort of engineering machine, using a perspectival axonometric section to feature the complexity of the newly constructed terminal. A plan and a facade, as usually architectural objects were often represented, were not enough here to represent such an artifact; not even a regular section. Such representation techniques of the axonometric section, mostly used for representing engines or other types of technological or mechanical displays, already speak about the nature of such an infrastructural project. Grand Central terminal⁷ was a hybrid typology descending from a family of technological devices, together with the family of other public typologies of the architecture of the city.

On one side, the above ground and visible part of the terminal consists on a series of parallel halls that are designed as meeting spaces and give access to the different train platforms. On the outside, a Beaux-Arts building with very big openings and windows is perceived. However, it is when the user undertakes its way under the main hall, that the spaces change radically in terms of morphology and scale, and all of the sudden, become more functional and serving spaces. Nevertheless, there is examples of a couple of underground spaces in the terminal that are worth mentioning amongst the rest of functional passages and tunnels, since a specific structural system is employed for covering them. The *Whispering Gallery* as well as the *Oyster Bar & Restaurant* at Grand Central Terminal in New York, together with some other staircases or passage spaces, were actually roofed by a specific structure, it being the so called *Guastavino tile vault system*.⁸ This system is a technique for constructing robust, self-supporting arches and vaults with terracotta thin tiles that matched with each other thanks to the help of a specific mortar, generating a thin supporting skin that proposes an adaptation to North American construction demands of the Mediterranean vaulting method. Apart from the fact that such constructive system was seen

6 This is how the terminal was defined according to the title of an advertisement in the magazine *Scientific American*. (December 7,th 1912) P. 474

7 The building was designed by the architectural firm Warren and Wetmore by Whitney Warren and Charles Delevan Wetmore in collaboration with the architectural and engineering firm Reed and Stem by Charles A. Reed and Allen H. Stem.

8 The vaults constructive system is called upon his forerunner, Valencian architect Rafael Guastavino Roig immigrated to the U.S.A. during the XIXth century. The vaulting system started to be used during the 1880s and got patented by Guastavino in 1892. Rafael Guastavino founded the Guastavino Company that, making use of such specific technique, installed structural masonry vaults in more than thousand buildings across the United States, especially in New York and Massachusetts.

as a very suitable system, also in terms of its efficacy since it needed a smaller mass of materials for covering even spaces with big spans, the atmosphere that these vaults were creating below them was something particular, especially from an aesthetic point of view.

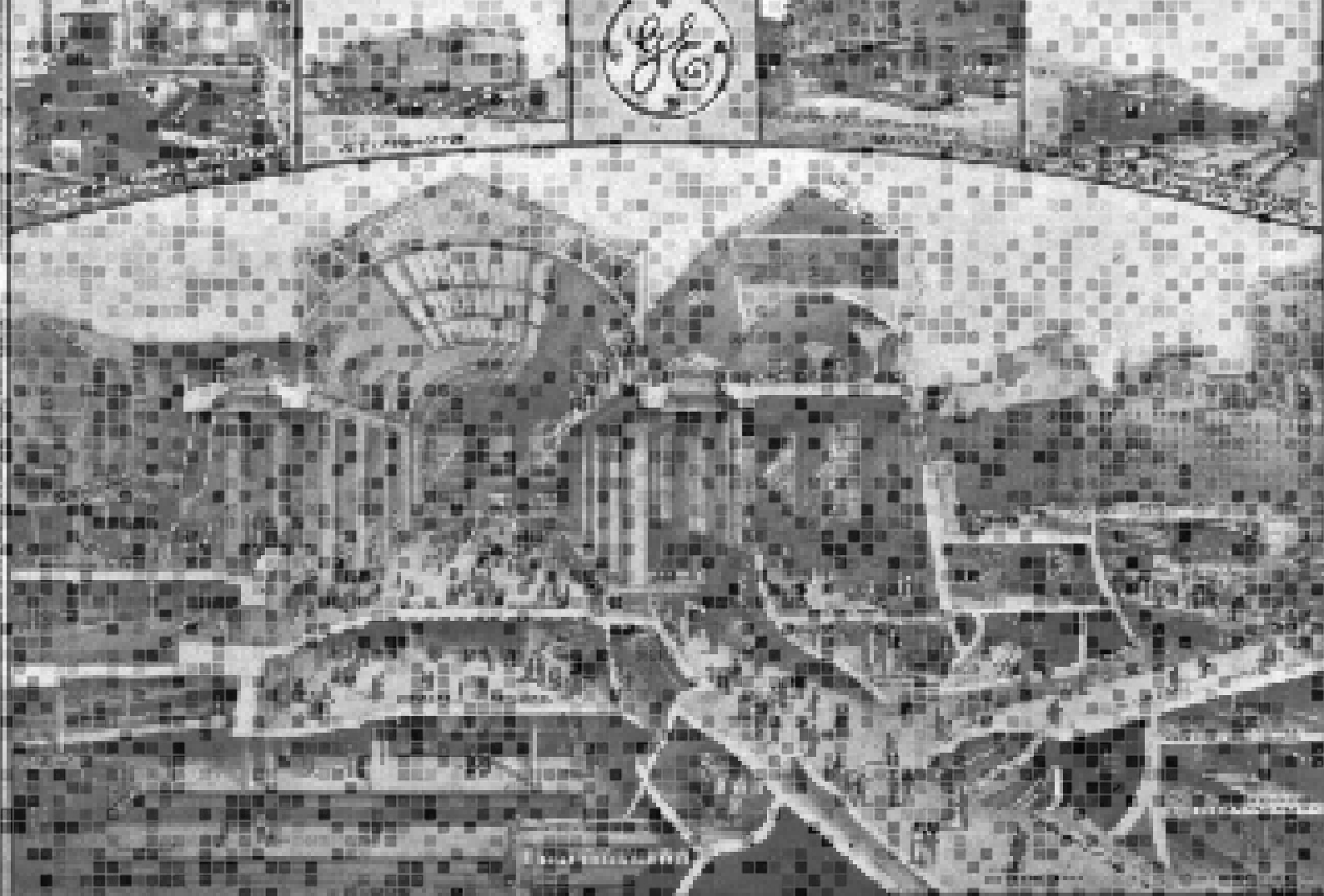
Introducing complementary issues on the side of the presence of automobiles in the city, the invention of the motorized vehicle in the latter part of the 19th century in Europe together with the beginning of Fordist mass production of Model T cars in the United States in particular, marked the starting point of a never ending story that is going to carry with it big logistic problems of storage and private occupation of public spaces in the city up until today. Everyone understands that when cars are in movement they have to follow rules established as a measure not only for an ease of circulation and safety but as well as a collectively agreed code that overlooks the common good. The problem came when they were stopped. Due to the big increase of car production already from the first third of the 20th century, more and more were the cars that, when *dead*, were not granting with proper spaces for storing them, and consequently were sprawling around the streets and public spaces without any order, producing several inconveniences for the current traffic, but as well for the pedestrian collectivity, etc.⁹ It is calculated that cars are typically stationary around 95% of the time nowadays. This means that, every day, during a very big period of time, meaning almost all the time, cars are stopped somewhere occupying a piece of ground of approximately twelve square meters or what is the same, two and a half meters times five.

Pioneers in traffic control and regulation at the beginning of the 20th century, like William Phelps Eno, developed the original traffic plans for major cities like New York, London or Paris. It is revealing to see that already back at that time, more than hundred years ago, there were already proposals for trying to solve the problematic of *dead cars*: *Vacant lots will be leased to store waiting vehicles and it will become profitable to construct public garages where cars can be left during the day when people are attending to their business and during the evening when they are at the theater.*¹⁰ The problem of storing cars when not used was here directly addressed. It was needed to construct garages for all these cars, according to Eno, that were produced and only used for a limited period of time during the whole day. The fact then of proposing an ensemble of lots, defined with the

⁹ Adjective used to say that the car is stopped. Ben-Joseph, Eran, *From Chaos to Order: A Brief Cultural History of the Parking Lot*, Excepted from Ben-Joseph's, Eran, *Rethinking a Lot: The Design and Culture of Parking*, MIT Press, 2012.

¹⁰ This is what William Phelps Eno claimed in *The Storage of Dead Vehicles on Roadways* at the beginning of the XXth century. Ben-Joseph's, Eran, *Rethinking a Lot: The Design and Culture of Parking*, MIT Press, 2012.

Figure 15. Axonometric. New York's Grand Central Terminal. in "Scientific American." 1912. / Figure 16. Guastavino Vaulting system. Whispering room. Grand Central Terminal. New York. 1920s



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help of laying down a gridded design on the ground, was the solution proposed by Eno, to deal with the growth of car ownership and the lack of ample spaces on the streets to host them while waiting. “In the 1920s, cities across America started to allocate space for parking lots that were either owned and managed privately by commercial and retail associations, or owned by public entities and maintained by private operators.” During the Twenties in the United States, municipal lots were constructed in Los Angeles, Chicago or Boston. In 1923 the National Conference of City Planning encouraged municipalities to allocate sites for off-street lots. These off-street lots were proposed where there was availability of space, so generally away from downtown and not solving hundred per cent the problematic of people wanting to reach stores or theaters downtown with their cars.

The car industry together with the private ownership system of automobiles was, and somehow still is, highly related with an economic growth inside of a capitalist system like the occidental one. Owning a car was not only producing a rise in commerce sales, because a bigger quantity of people could reach all the stores downtown, but as well was an opportunity to develop businesses especially reaching car owners like for example businesses related with their maintenance, their cleaning, etc. But there was one big business that came out as specially profitable, since was even related with real-estate, and which was the business of car storing. For this reason, parking garages started being multi-level devices so, the quantity of surface for hosting more cars could grow exponentially, being able to allocate in the centers of cities, multi-level buildings, repeating their plan, for multiplying the amount of cars they were able to host. This is the moment in which as well, the underground of cities starts to be seen as an available asset regarding the problematic of car storage.

Already at the very beginning of the 20th century it is possible to find an example where a private underground garage (initially for carts and then easily converted into one for cars) would have been designed from the origin of the project in order to complete the full functioning of the building standing above it. This example is casa Milà built by Antoni Gaudí between 1906 and 1912 along Passeig de Gràcia in Barcelona. Casa Milà is an apartment block built in a corner condition. To organize the inner distribution of the apartments, two courtyards, one circular and the other more elongated, were designed. *The floor of the circular courtyard was supported by an original metal structure formed by a central crown (...) like an umbrella.*¹¹ Thin metal pillars were holding the so called crown at the basement and the spaces between the columns, arranged around the circular perimeter of the crown, were already conceived to host cars, even if not motored ones, putting in

¹¹ Basegoda I Nonell, Joan, *La Maison Milà (1906-1912)* in *La pedreda de Gaudí*, Caixa d'estalvis de Catalunya, Barcelona. 1989.

relation as well like this the courtyard of the building with the below-slab parking garage in terms of spatial design. *At first, the basement was used as a carriage house and stable, as in the Palacio Güell, but when cars were introduced, it was converted into a garage with access by means of ramps.*¹² It was then not the first time that Gaudí was thinking on including in his design a space where carriages could be stored. He proposed so at Palacio Güell and at Casa Batlló, even if not underground. What is revealing is that probably casa Milà was the first example of an underground garage included as part of the equipment of a collective residential block in the city. However, it is going to be needed to wait until the second half of the century to assist to a more massive construction of underground public garages.

In general, to bring a parking garage underground digging the ground probably seems the least evident since the space consumption for storing big quantities of cars, it is something that really differs from hiding linear canalizations underground or even carving tunnels for the metro system. However, parking garages have become rational systems proposing and organizing the storage of cars on surfaces, even if built or dig underground, using the help of orthogonal grids. An aggregation of rectangular lots arranged on flat surfaces along serving streets is still nowadays a system used for storing stopped cars. Bringing cars underground really requires to do a replica of the ground in which the cars stand, offering like this additional below-slab space for storing them, with all the technical challenges and solutions that such an operation implies. This is a solution as well that comes really to hide the cars from the citizens view, as it was already tried in the project of La Salle Hotel's garage even if above ground. Underground parking garages follow somehow the scheme that already explored multi-story parking garages above ground from the beginning of the 20th century. The earliest known multi-story car park opened in 1901 in Central London. It was a building of seven floors and with space for hundred cars. In the United States, the first multi-story parking garage opened in 1918 and was remarkable because of its urban meaning and presence. It was the parking garage of La Salle Hotel in downtown Chicago. The hotel called on the architects William Holabird and Martin Roche, disciples of Le Baron Jenney as well as part of the *Chicago school*, to design and erect a five-story building with space for three hundred and fifty cars in the city center of Chicago. This multi-level parking garage, borrowing the looks of a regular office building, was made for hosting the cars of the clients of the hotel as well as proposing cleaning or reparation services and a filling station. A ramp was leading the cars up to the different levels at the same time as it counted as well with a car elevator, making of La Salle hotel's parking garage probably the oldest

¹² One of the tenants of the Pedrera, the manufacturer Feliu, had a huge Rolls Royce which could not go down to the garage because the radius of the ramp was too small. Gaudí had a pillar removed, which was the reason for the very complicated calculations made by Canaleta and Jaume Bayó." Ibid.

example of a commercial parking garage in the United States.¹³ In terms of its design and its architectural composition, this garage, a highly functional building, was designed to *blend in with office buildings, placing the windowsills at a level where passersby would not see the headlights of cars parked inside*.¹⁴ That can be seen as an important feature of parking garage design since it was not enough to remove stopped cars or their physical presence from the streets but, apparently, it was as well a wish to remove them completely, even visually. This garage building, which was designed exclusively to host cars in their interior, proposed facades to the city as if they were not hosting cars at all but pretending to be an office building. Lim Peters, director of planning for the Landmarks Preservation Council of Illinois back in 2005 stated defending the design of La Salle's garage that *today we're struggling with how to make garages look better and they did it right out of the box. That was quite an accomplishment*.¹⁵

In the second half of the 20th century many public open spaces were stolen from the public usage because cars were stored on their surface for example. In 1963 the Ministry of Transportation of the United Kingdom made public an influential report on urban and transport planning named *Traffic in Towns: A study of the long term problems of traffic in urban areas*. Also known as *Buchanan Report* named after the main figure behind it, architect, civil engineer and planner, Colin Buchanan, its goal was to warn about how the role of cars in cities could cause very important damages, featuring additionally several ways to mitigate such fact, proposing amongst many other strategies the one of bringing back and delivering extra pedestrian spaces to the city.¹⁶ However the report highlights a paradox which is that many efforts can be done for enhancing a pedestrian network of spaces but, the implementation of such an environment favoring pedestrian circulation is confronted with the desire to maintain accessibility for cars, which was understood as not possible to sacrifice. The report matched in several ideas with the Athens Charter, however, it understood that traffic circulation could not be

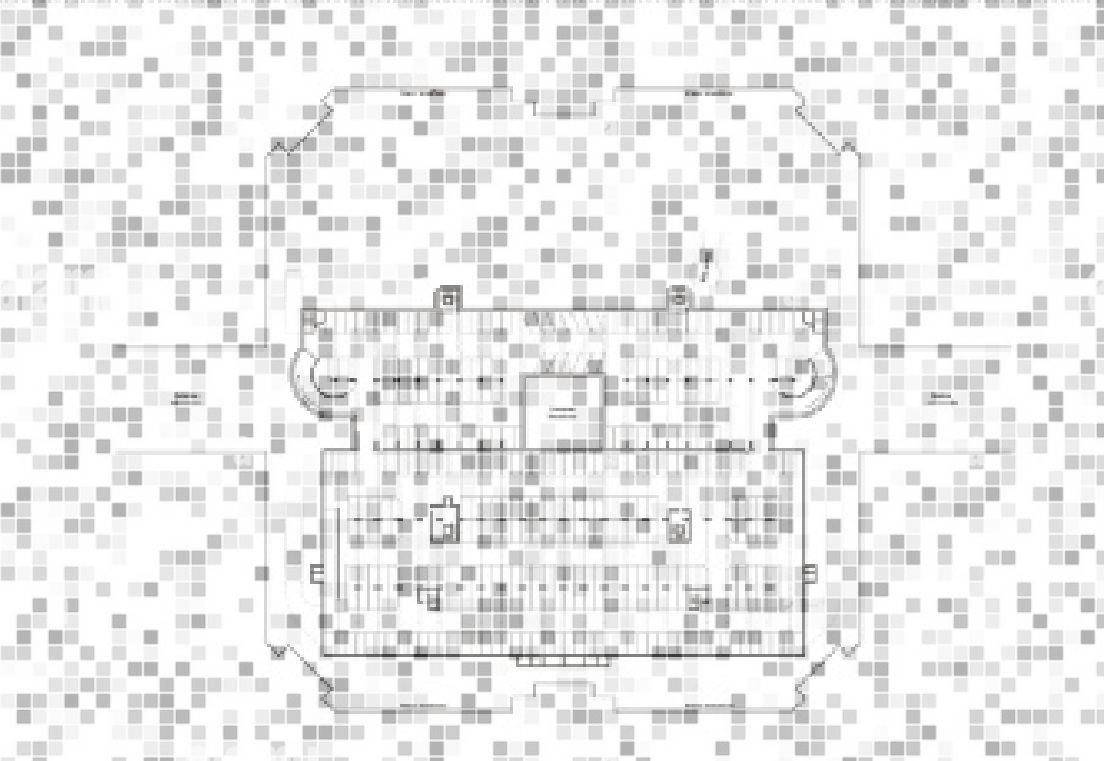
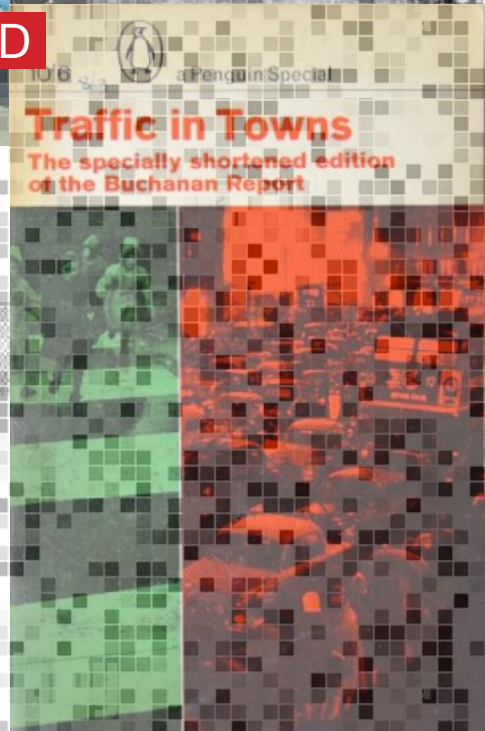
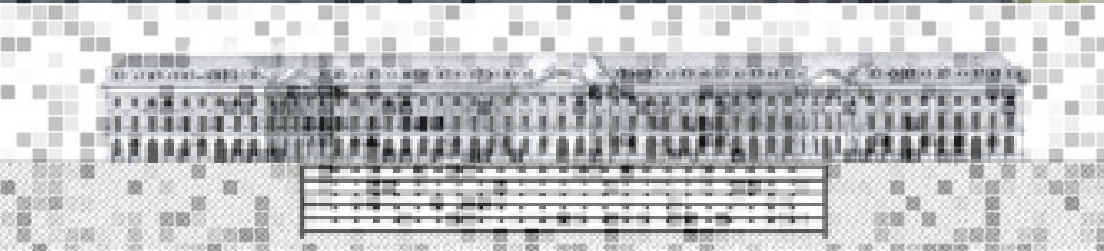
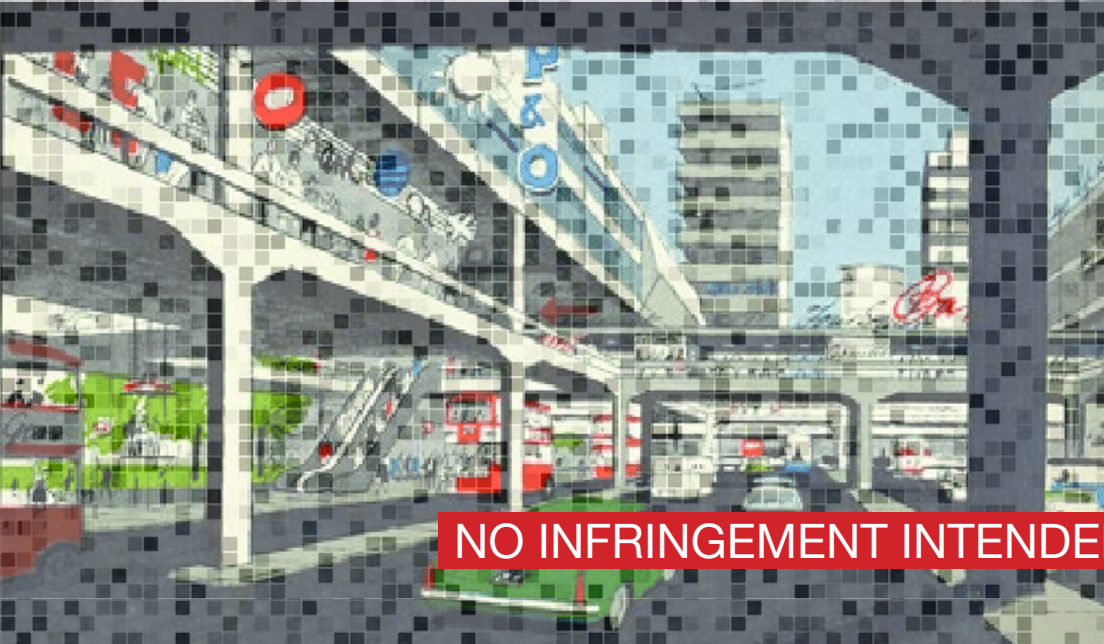
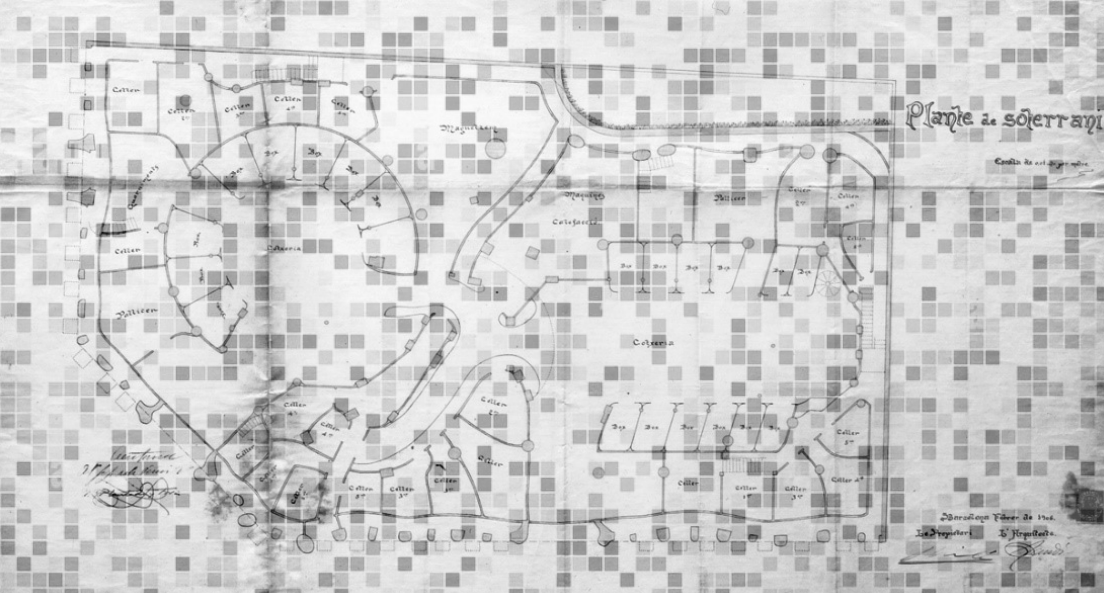
13 This is what Richard Longstreth, an American studies professor at George Washington University claims. In Francisco, Jamie, *Hailed for its innovation, but razed as out-of-date*, Article in Chicago Tribune. April 01. 2005. <https://www.chicagotribune.com/news/ct-xpm-2005-04-01-0504010258-story.html> Visited 23.02.22.

14 Lim Peters, director of planning for the Landmarks Preservation Council of Illinois, says this. In *Ibid*.

15 *Ibid*.

16 The report got published after a year as a book by Penguin Books under the title "Traffic in Towns: The specially shortened edition of the Buchanan Report." Buchanan, Colin; Crowther, Geoffrey; Crowther, Baron, *Traffic in Towns: The specially shortened edition of the Buchanan Report*, Penguin Books, Harmondsworth 1964.

Figure 17 & 21. Floor plan underground level and section. Casa Mila. Antoni Gaudi. Barcelona. 1906-1912. / Figure 18 & 23. Illustration from the 1963 Buchanan Report. / Front Cover "Traffic in Towns." 1964. / Figure 19 & 20. Section and floor plan of the underground parking garage for 1113 cars below the Place Vendôme. Paris. / Figure 24. Picture of the construction of an underground parking garage for 855 cars below the Place du Capitole in Toulouse. 1971.



completely excluded and isolated from the rest of spaces of the cities, and even if strategies could be seen as similar, segregating functions on a stratification of a city on slabs, these functions were clearly intended as needing to connect and meet the ones with the others.

This dichotomy between the fact that cars had become one of the main transportation systems of the general population already during the first half of the 20th century, and so that they were used to reach not only hotels but the centers of the cities, as well to allow people to spend time and money downtown, was then in opposition to the fact that cars they were not wanted to be left seen directly from the street and occupying valuable place for pedestrians.

Such a situation could start being one of the reasons why, and especially in the second half of the century, car parks will start being built not only in above slabs multi-level carparks but as well underground, below-slab, exploring an available *substance* where to expand. One could say that the Typical Plan that was *forced underground (and) condemned to the status of parasite, devouring and invading whole centers and peripheries*, like Rem Koolhaas defines it, is not else but a definition featuring how carparks have generally been using the gridded typical plan in underground functional constructions to store masses of cars.¹⁷

Underground parking garages, even if expensive and bulky, have extended nowadays to many of the spaces below public traditional voids in the city that, used in the 70s as above-slab parking garages almost, have recovered the public space for pedestrians moving the parking spaces below-slab, in kinds of *No-Stop City Typical plans*. This is the case of the most well-known squares of Paris for example *Place Vendôme* that before 1970 was a parking lot instead of a square. French Professor Dominique Perrault carries research on these examples on the frame of his course *Groundscape Architecture Lab. Carpark Futures* at the Swiss Federal Institute of Technology in Lausanne, in which it is somewhat shared that by studying precedent cases it is possible as well to understand their sense, their reasons and as well their future potentials.¹⁸

This fact is seen in this thesis as a widespread solution proposed to rescue the life in cities after suffering from the congestion of automobiles due to the explosion of their mass-production. The fact that the No-Stop City of Archizoom as well could be defined as *Residential Parkings* is showing the monopoly that car storing is making of the Typical Plan.¹⁹ The problem with cars regarding the city have been very similar from the beginning: the mass production of cars was not at all accompanied by management logistics on regulating its presence in the

¹⁷ Ibid.

¹⁸ It is possible to find a Mooc course here. <https://actu.epfl.ch/news/mooc-groundscape-architecture-lab-carpark-futures/>

¹⁹ Gargiani, Roberto, *Archizoom associati, 1966 - 1974 : dall'onda pop alla superficie neutra*, Electa, Milano 2007, pp. 169.

public space. Since automobiles are objects of considerable size, and they started to be mass-produced, the 20th century urban challenges have been partly defined by the need of managing the motorized flows of transportation in the city. As an example that could be enhanced in the direction of the Buchanan report, looking for interconnections between the several ways of circulations in opposition to the strategies featured at the Athens Charter that mostly proposed to segregate and completely separate the motorized traffic from pedestrians, the 1960 *Plataforma Rodoviaria* of Brasilia, already present in the *Plano Piloto* competition project that Lucio Costa won in 1957, proposes an ensemble of spaces where cars can change directions, pedestrians can shop, or buses can stop and let their passengers off and on. Radically positioned at the center of the two main axes of Brasilia, the *rodoviario* and the monumental, the *Plataforma* becomes a truer center of the city rather than the well-known *Three powers square* at the end of the monumental axis. Becoming like this a *traffic center* as well, the *Plataforma* hosts the central bus station of the newly built capital of Brazil as well as commercial facilities, and allows traffic to change directions.²⁰ It is an ensemble of three horizontal slabs superimposed upon one another and that are inserted into the topographical articulations of the ground that define the monumental axis.²¹ The two bridges that channel the traffic of the residential highway - *rodoviario* - are made of pre-stressed pillars of reinforced concrete - Freyssinet system - the distance between pillars being about 30 meters. The bridges themselves were as well made of pre-molded concrete and a thin coating of reinforced concrete on top.²² Such a structure, being part of the three-dimensional articulation of the surrounding grounds, starts mixing several functions and different speeds of circulations, proposing a precedent that would open up the ways in which to design traffic management. The hybrid building, hosting cars and buses as well as pedestrians in different interconnected levels through the means of escalators, proposes ticket booths for buying bus tickets, restaurants and several service rooms and works as well as a panoramic balcony that allow users to enjoy impressive views towards the rest of the particular urban landscape of Brasilia. The building features a clear example on how not only above but as well below-slab spaces can become true public spaces and mix functions, becoming an early milestone towards future designs when planning urban traffic in which public space would not be completely robbed from pedestrians.

As a complementary example when imagining ways in which to mix several different ways of transportation, bringing certain benefits because of such mix, there is as well another point in history, previous to the redaction of the Buchanan report too, where more mixing between several kinds of circulations are imagined.

20 Staubli, Willy, *Brasilia*, Verlagsanstalt Alexander Koch nd c., Stuttgart 1965.

21 DOGMA; Aureli, Pier Vittorio; Tattara, Martino, *Platforms*, Black Square, Milano 2021, pp. 98

22 Staubli, Willy, *Brasilia*, Verlagsanstalt Alexander Koch nd c., Stuttgart 1965.

Trains were proposed as a complementary transportation method to car owners already at the beginning of the 20th century in the United States. There was many train companies that were proposing hybrid ways of transportation: what today we know as a Park and Ride mobility strategy (P+R) it was already invented in the 1910s when companies were proposing free complementary services of using a car lot next to the station to leave the car stopped if one was buying a train ticket.²³ Even if still nowadays this is a system to which users are moderately hooked, it is not current now to find any train station without a parking garage facility complementing it.

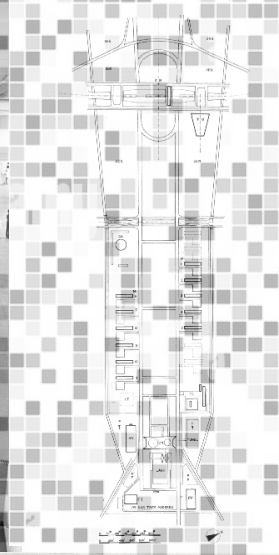
In front of the train Station in Florence, Italy, there is a multi-level parking garage, dug underground: so below-slab. This one is a good example that shows how a system of train trucks, having its terminus at Santa Maria Novella railroad station, have additional below-slab services offering a connection to a parking garage, in order to give passengers the possibility to reach the station by car and from there take a train further away. Additionally to the underground parking garage and the existing 1930s Santa Maria Novella trains station, designed by Giovanni Michelucci amongst the rest of the *Gruppo Toscano*, the square of the station receives the name of Santa Maria Novella too after Leon Battista Alberti's Santa Maria Novella Renaissance church, which is standing at one of the edges of the square. The project for an underground parking garage was already presented in the Eighties, when it got designed by the Florence office CSPE, as a *strategic opportunity for the reorganization of the public transport and network and for the redefinition of the square identity*, strongly marked by the presence of these two important public buildings, the station and the church.²⁴ Additionally to the parking garage, that has used a structural logic of prefabricated elements belonging to the Typical Plan family, new below-slab pedestrian passageways and a shopping arcade connect the station with the garage. The parking garage proposes like this new spaces generating a urban artifact that starts to become very hybrid, counting with serving spaces and served ones, and proposing possible ways on how to connect the two worlds, the below-slab and the above-slab, to the help of circular light shafts around which spiral ramps serve as access routes for the cars.

The truth is that spaces below-slab are hard to be rendered public and easily reachable because of a question of accessibility and fluidity of space first of all. The way in which one could pierce the slab and access the spaces below it is

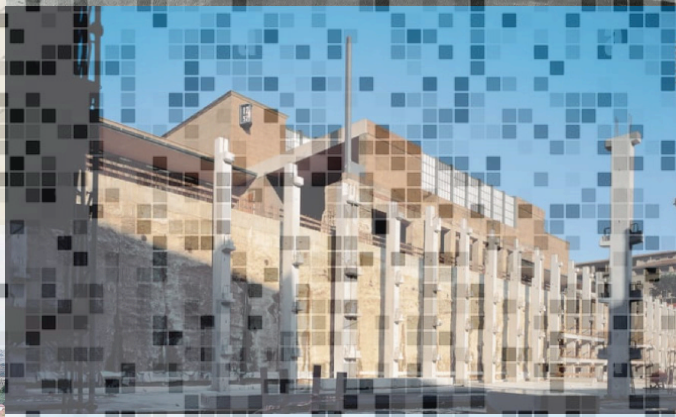
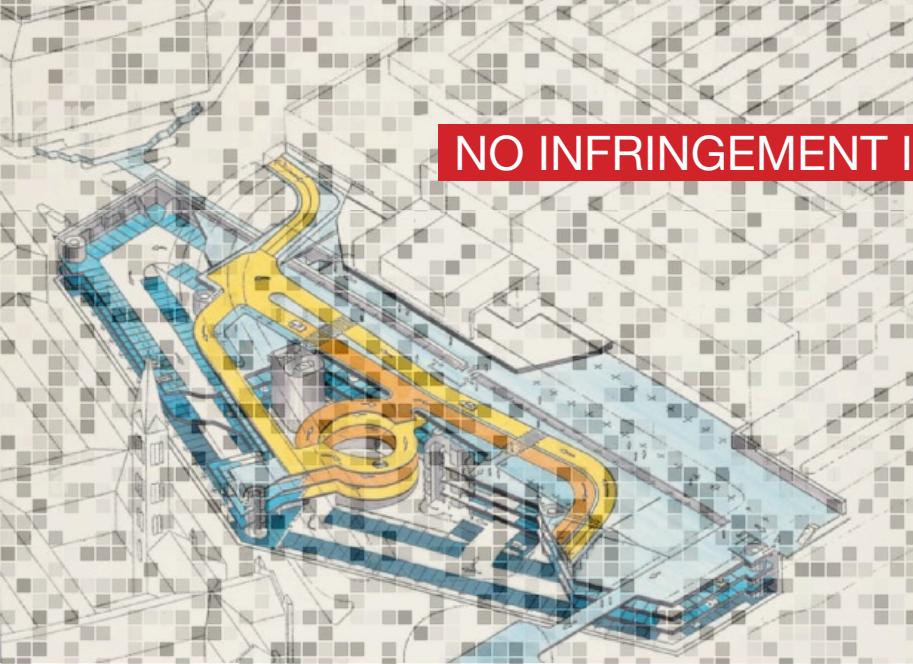
²³ Ben-Joseph's, Eran, *Rethinking a Lot: The Design and Culture of Parking*, MIT Press, 2012.

²⁴ http://www.cspe.net/web/progetti_scheda.php?valo=e_16_27

Figure 25, 28, 29, 30 & 31. Pictures, construction, and Floor plan. Plataforma Rodoviaria. Lucio Costa. Brasilia. 1960. / Figure 26 & 32. Axonometric. Construction Picture. Underground parking garage at Santa Maria Novella Station. Florence. CSPE. 1989 - 1992. / Figure 27 & 33. Axonometric, pictures, and floor plan. Sishane Park. Istambul SANALarc. 2013.



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to be imagined and designed with the help of any elements like ramps, stairs, escalators or slopes. The size and character of such elements are important too. Once below-slab, and only once this first step of proposing an access to the below spaces is fulfilled, more are the constraints that affect such spaces like for example the lack of light, the spatial narrowness, the often roughness of materials, or the extreme rationality character of the structure all of which can make such spaces located below-slab particularly unappealing, especially for the pedestrian. This is why the spaces above-slab can as well have an important role when speaking about the success of below spaces rendered public. In Istanbul, a multi-level parking garage below-slab has been designed and built in 2014 by Sanalarc. The design proposes a brand new public space on the roof of the parking garage, offering an artificial topography at the level of the city, so above-slab, for the enjoyment of the collectivity. Located between the historical city and the more recent neighborhood of Pera, pedestrians can transit on the new artificial ground or roof garden designed for them, as well as enjoying the views on the *Golden horn* panorama.²⁵ Shishane Park proposes cracks in its topography that allow for pedestrians to enter the parking garage as well as to the one thousand cars that it can fit through a couple of ramps. Shishane Park and the parking garage hosted below are an appropriate example on how to landscape an above-slab public space and relate it to some below-slab functional spaces that have been made more appealing through the use of colored paint and a good lighting design. Even if not proposing yet truly collective public spaces below-slab, Shishane park and the parking garage below it, are an example of what in this thesis is understood as an Artificial Ground.

To mix the management of trains and train lines – that usually a train station tires to solve – together with the management of buses, cars, and especially the needed spatial infrastructure to host stopped or *dead* cars, it is something that, together with the need of extra programs like offices or residential facilities, it was required to deal with at the occasion of the *Euralille* urban masterplan competition. Rem Koolhaas and its Office for Metropolitan Architecture won the competition in 1989 proposing a *project based on the hypothesis that the experience of Europe will change beyond recognition through the combined impact of the tunnel that links Britain and the Europe, and the extension of the French TGV network to include London*.²⁶ Mixing all the previous requirements listed above as well as proposing other *urban activities* the project consisted of more than 800'000 square meters, counting with a train station, shopping, offices, parking, hotels, housing, etc. *A gigantic futuristic project is imagined two steps from the historical center, a hybrid condition - history and modernity - that allows the in-*

²⁵ This is the term the architects use to refer to such space. <https://sanalarc.com/sishane-park-sishane-park>

²⁶ <https://www.oma.com/projects/eurailille>

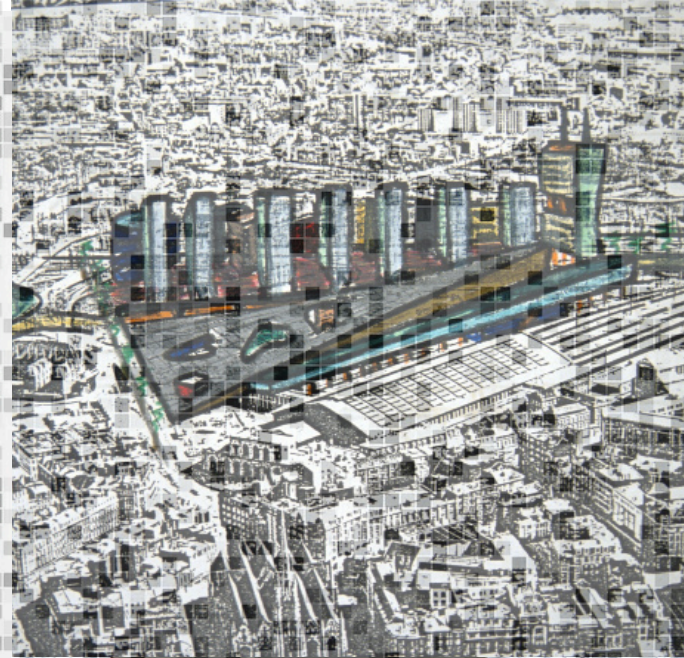
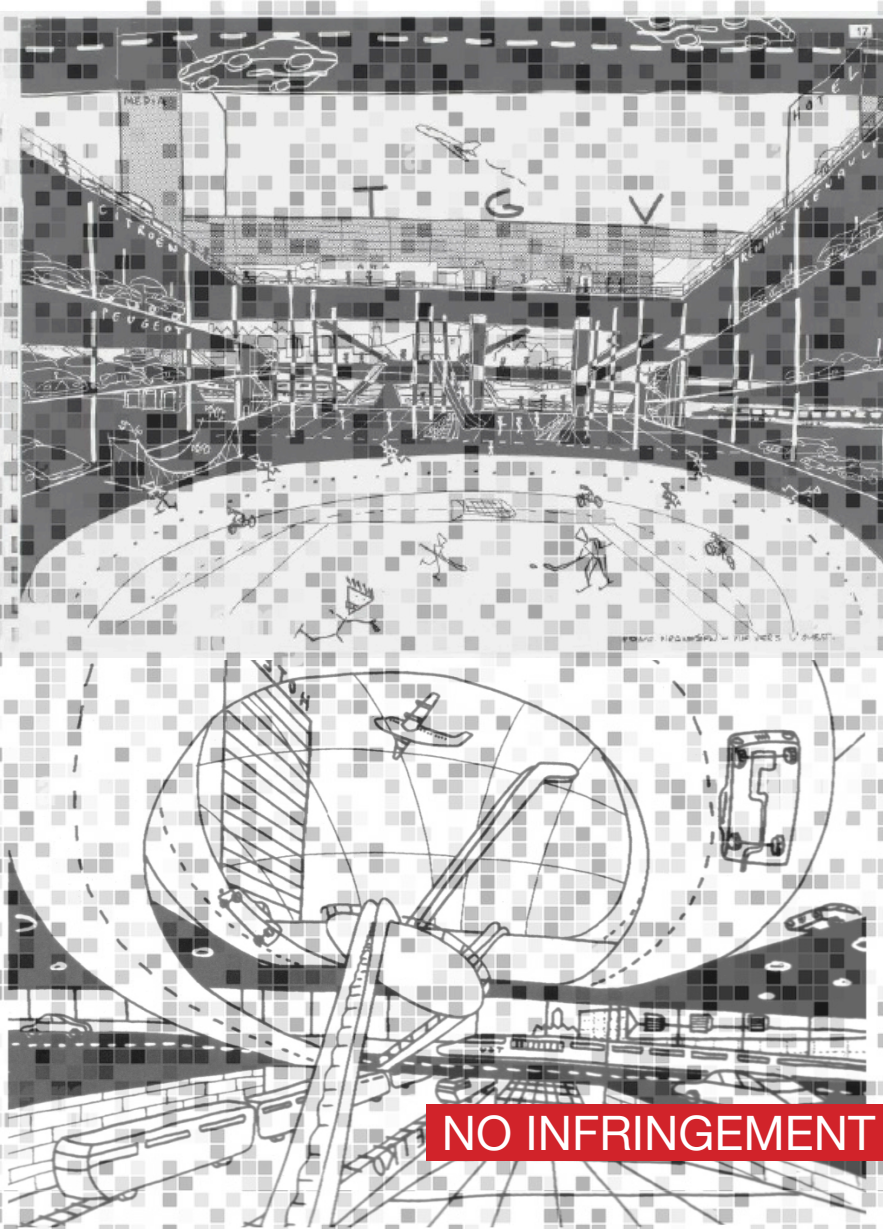
*jection of peripheral activities near the heart of the city.*²⁷ It is possible to consider *Euralille* OMA's proposal as a *big urban collage* being the *addition of several parts* and that can be considered as *overcoming the mistakes on contrast and dispersion that occurred in a preceding major urban operation: the tertiary district of La Défense in Paris.*²⁸ Actually in La Défense, probably a project very much heritor of the Athens Charter influence, the spaces below the slab are very much separated from the above-slab world. However, in the case of *Euralille*, there is a particular representation of a place of the master plan project that Rem Koolhaas imagined as what he defined a *espace piranesien* (piranesian space) referring to Giovanni Battista Piranesi's 18th century engravings. In it, he represented a voided space, issued from piercing through several slabs constituting the urban ensemble and across the depth of which, it was possible to perceive several floors below-slab that were interconnected between themselves visually but as well physically to the help of ramps and escalators. In the contrary of what would be happening in La Défense, here, the different programmatic slabs are understood as being all part of the same system, places for the collectivity, parking garages, platforms for accessing the trains, etc. In the lower level, using the piercing of the void that is generating a sort of patio, an ice rink like the one of the sunken plaza of the Rockefeller center is here used to play hockey.

These piercings through the depth of the ground, across the different layers, have resulted, as well, key features in other big operations or projects like for example the one of *Atocha Station* in Madrid. Far from being a that much complex project as the one of *Euralille*, Rafael Moneo's transformation of the former station of *Atocha* into a multi-modal station mixing high speed trains, regional ones, cars, buses and even metro lines, was having in common that a *piranesian space* called in this case *intercambiador* (exchanger), put every program in contact with each other, both visibly and physically, as well as it acted as the connection with the level of the street and as a symbol for the users. *The intercambiador must be understood here as the key architectural piece that provides a solution to the problem posed by Operation Atocha. Its exterior image [...] emerges as a testimony to the complex architecture that takes place below (the surface) while at the same time, from a distance, it contributes decisively to orienting travelers, presenting itself with its emphatic cylindrical form as an authentic and, if you will, necessary meeting point for the various functions of Atocha.*²⁹

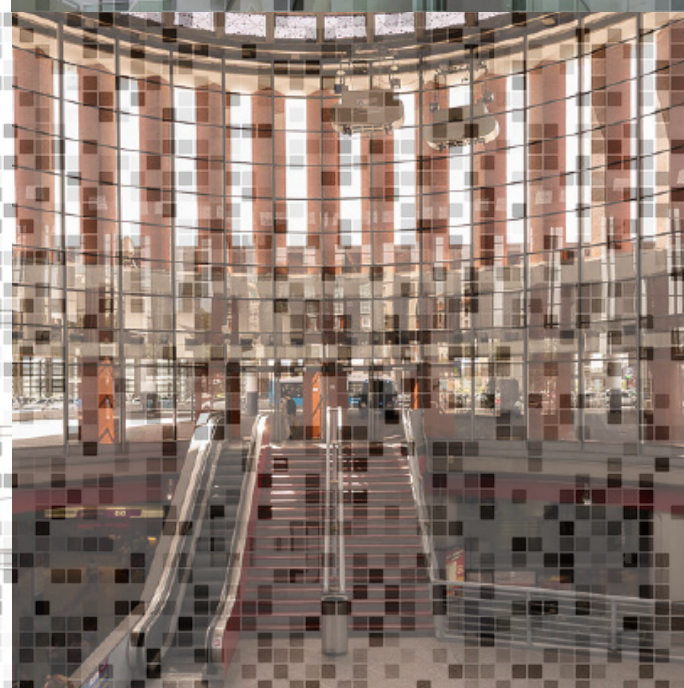
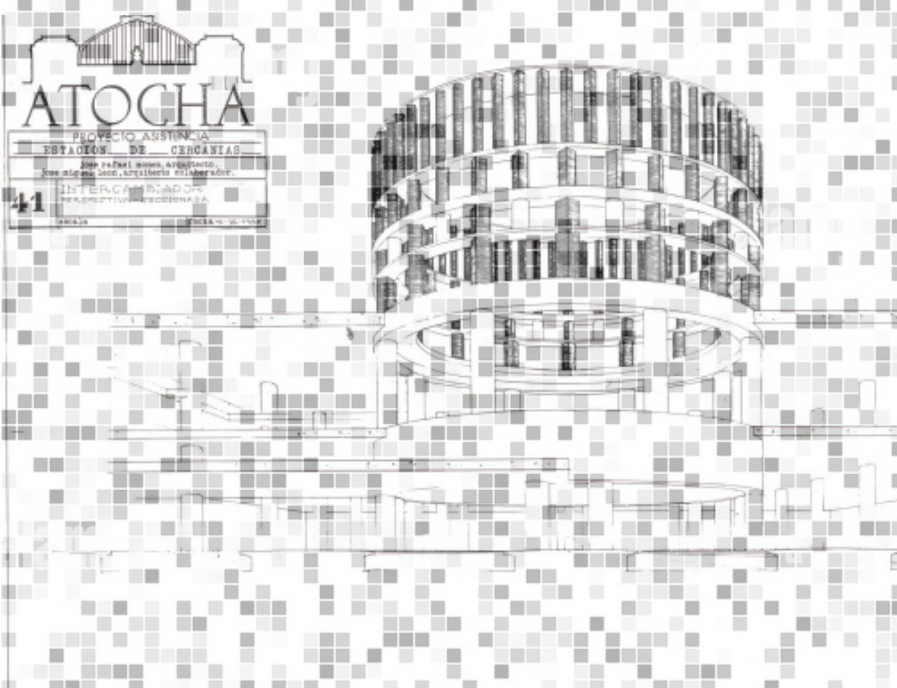
²⁷ Ibid.

²⁸ Montaner, María; Muxi, Zaida, *Ciudad-estación: Lille, Euralille, Centro Internacional de Negocios*.

²⁹ Moneo, Rafael, *Ampliación de la Estación de Atocha, Madrid*, in *AV Monografías* n°36 (1992) pp. 42-52.



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3.4

ARCHITECTURAL ELEMENTS FOR ACCESSIBILITY

The points in which slabs, that articulate the above and below world of Artificial Grounds in the city, are pierced, is a crucial one. It seems that the spaces in which a void articulates the different layers of the artificial ground, interconnecting them with the help of ramps, stairs, escalators etc, become the main polar spaces in both projects, the key places that make the whole system work. It is because of this, that the connecting elements, such stairs, ramps, slopes or even bridges, together with the invention of escalators, which are just mechanized stairs in the end, are architectural elements that become key in the understanding of Artificial Grounds.

Additionally, and without needing to necessarily go always below-slab, the above-slab spaces in the city that are conceived as raised or superimposed Artificial Grounds, would as well need to be linked with the rest of public spaces in the city. For it, the employment of such architectural elements would offer punctual connections and grant like this a sort of spatial continuity between the natural ground of the city and the artificial grounds.

Composed by three different flat open spaces, a square, a plateau and a garden, the *Cortile del Belvedere* in the Vatican is an harmonized spatial sequence of these three spaces counting with the help of a system of stairs and ramps linking the three different spaces located in different heights.¹ As a logic sequence, these spaces help saving the differences in height that the natural topography had from one point to the other of the Cortile. Having almost the shape of a monumental roman circus because of its perimeter, Donato Bramante designed this very theatrical spatial sequence with great mastery, especially when imagining such architectural elements offering the connections, the construction of which started already in the 16th century, from 1503 onwards to be more specific. Pope Julius II political aspirations brought with him the initiations of the construction of monumental complexes like the one of Cortile. Initially intended like a connection between the Vatican palace and Pope Innocent VIII's villa, both buildings being at two different topographical heights that had to be saved at the same time, Bramante *interpreted this topographical feature as an opportunity to divide the complex into two main parts: a lower terrace next to the palace, formalized as courtyard-forum, and an upper terrace next to the villa, interpreted as a garden.*² The connecting space between both entities, the plateau, could once again be seen

¹ DOGMA; Aureli, Pier Vittorio; Tattara, Martino, *Platforms*, Black Square, Milano 2021, pp. 92.

² Ibid.

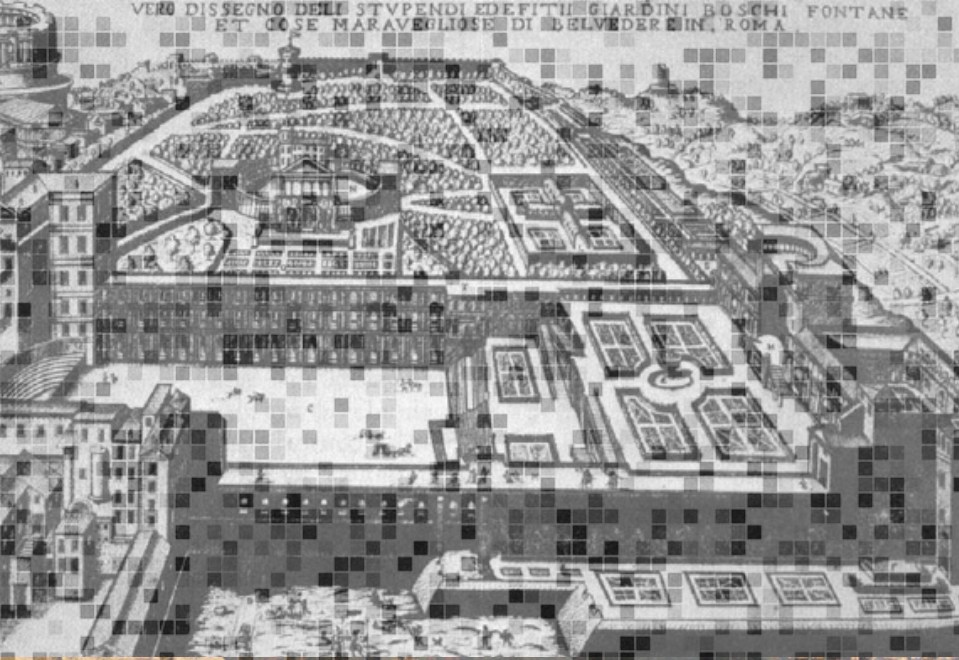
Figure 34, 35, 38 & 39. Euralille. Espace Piraneisen. OMA. Lille. France. 1989 - 1994. / Figure 36, 37 & 40. Axonometric, Section and picture. Intercambiador Estacion Puerta de Atocha. Madrid, Spain. Rafael Moneo. 1984 - 1992.

as a strategic piece, a specifically designed display that, using the theatricality that will permeate both Renaissance and Baroque landscapes as sequences of stages, make the important connection between the two regularized different levels of the cortile, working both upwards and downwards. The slopes and steps that Bramante designed to join the different levels of the cortile are of particular importance since they are imagined looking for a spatial fluidity and continuity that, when in the contemporary city, would be key to arrange an ensemble of public spaces conforming a coherent network.

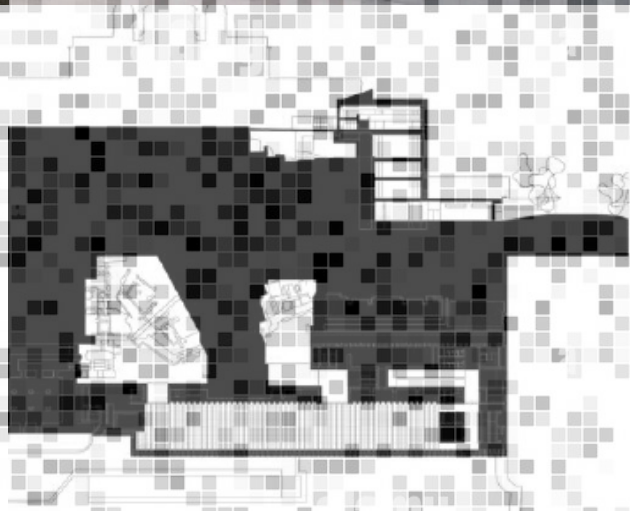
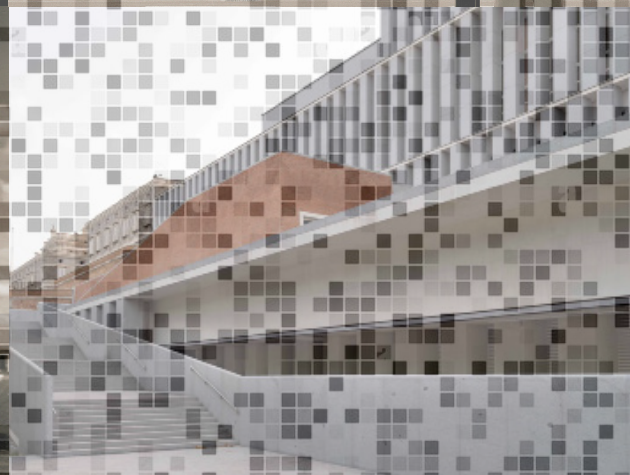
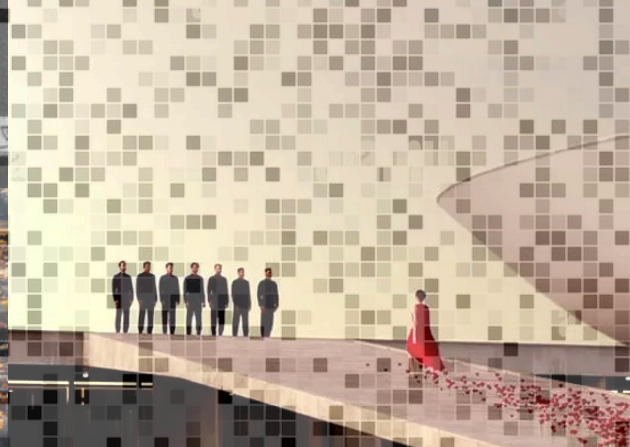
Always in favor of this spatial continuity, another well-known intervention of Bramante adjacent to the Cortile, is known as the *Bramante staircase*. The staircase, built by Bramante in 1505, contemporarily to the Cortile, is a double helix spiral display that connects the Belvedere palace to the outside and the city level, generating a sort of tower in the body of the palace. The particularity of such a structure, and the reason why this design is featured here, is because the staircase was composing a continuous surface since steps were replaced conceptually by an helicoidal surface paved with bricks conforming a herringbone pattern. To the help of an ensemble of Doric granite columns, the staircase was holding a continuously ascending ground on which not only an entrance from street level to the Papal apartments was effectuated but it was built as well to accommodate even horses and mules carrying large items back and forth from the Papal Palaces. As if it was a DNA chain, Bramante staircase proposes a solution without precedents imagining and constructing a display through which a connection between different levels situated at different heights could be rendered connected with each other. The ease with which it was possible to ascend, even animals could, was rendering the whole Papal palaces together with the Cortile understood as an ensemble made of connected parts generating almost a totality. With the generation of this artificial helicoidal slab, the below and the above are brought together, almost recalling the voided areas of big train stations like the one of *Atocha*, that used a particular place in its whole extension to produce a multilevel connection.

When designing new parts of cities, and especially when proposing public spaces, either new or vacant places reabsorbed by the city, it becomes crucial not only to make such places understandable as belonging to the collectivity, but as well to make them accessible and reachable from the broader network of public urban spaces. Such connections granting the places with a certain spatial conti-

Figure 1. Cortile del Belvedere. Vatican. Donato Bramante. Ca 1503. / Figure 2, 4, 8 & 9. Pictures, section and axonometric. Madrid'd Royal Palace ensemble with the Royal Collections museum. Mansilla & Tunon. Madrid. 2014 - Ongoing. / Figure 3. Brazil's National Congress. Brasilia. Oscar Niemeyer. 1959. / Figure 5. Bramante Staircase. Vatican. Donato Bramante. Ca 1505. / Figure 6. International marketing campaign pain of the perfume "Flower" by Parisian fashion brand Kenzo filmed at the National Congress of Brazil. 2015. / Figure 7. Brazilian Supreme Court. Brasilia. Oscar Niemeyer. 1958.



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nuity from the ensemble of other public places, is something sometimes not that obvious to offer since in the city one is confronted to discontinuities, obstacles and topographical height differences, as it was the case in the Cortile del Belvedere, and designers have had to find specific ways to connect and sew the spaces of the city together. In Madrid, the Royal Palace is located in the extreme west of the old town. The palace it is located where previously was found the former fortress or *Alcazar*, used by the Austria royal family (preceding the Bourbons before the succession war of 1700), having at the same time its origin back to the 9th century when the Cordoban Emir Muhammad I built a defensive building. Because of the initial defense functions, the first fortress got built on top of a hill. Even if the Austria's *Alcazar* got replaced by the late renaissance building of Giovanni Battista Sacchetti in the 1730s, the actual royal palace still occupies a topographically particular situation, being nowadays at the same level of the city center of Madrid, having the Opera theater at the east or the *Almudena* Cathedral at the south, but on the other sides which at north and west are an ensemble of royal gardens known as Sabatini Gardens, in a completely much higher situation than the rest of the landscape. The Palace is then built in the topographical edge of the city, for which it looks like mounted on a sort of monumental podium. This particular topographical situation has made that an elaborated and systemic ensemble of stairs ramps and plateaus, comparable to the ones of the Cortile, have been designed and built around the north and west perimeter of the palace, connecting like this the level of the city center of Madrid, with the lower topographical level of the Sabatini gardens and the *Manzanares* River. Even nowadays, especially after the construction of the Royal Collections Museum by former Spanish Office Mansilla and Tuñón, which is occupying a plot next to the cathedral and benefitting somehow from the height difference between both topographical levels, the strategy of the ensemble of ramps, plateaus and stairs is clearly identifiable as a successful one proposing continuity amongst the different spaces in the city. The royal gardens have now become part of a network of municipal public gardens and spaces that have to be properly connected and reachable by the collectivity. Mansilla and Tuñón's museum perpetrated the same strategy, proposing as well a big ramp connecting the esplanade in front of the entrance to the museum and the *Almudena* Cathedral, down to the royal gardens.³ Elements like stairs, ramps, and plateaus are once again shown as crucial in the spatial organization of the city, allowing to bring connections along the very different urban spaces.

In such an ambitious operation, like it was the one of the construction of a new city at the end of the 1950s in Brazil, the projects of Oscar Niemeyer contributing to the construction of the city are going to be fruitful test plates for imagining new

³ Mansilla + Tuñón, *Museo de las colecciones reales, Madrid*, in AV Monografías n°144 pp. 64-73.

and pertinent ways on how to designing such connecting elements for a proper accessibility. The ease, lightness and almost poetry with which Oscar Niemeyer designed an endless range of accessibility elements, like ramps or staircases, can be illustrated in a brief and fast way looking at some of the public buildings he designed from the 1950s onwards at the city of Brasilia. The 1958 National Congress of Brazil for example, recently invaded by thousands of bolsonarist protestants, is an impressive building proposing a new ground on a slab above itself and built inside of the Monumental axis, whose topography was already artificially altered proposing an excavated kind of bed in which the Three powers square and the *Plataforma Rodoviaria* would stand.⁴ This new ground contains two monumental spheric volumes and is reachable through a rather monumental but very simple reinforced concrete ramp whose elegance has been featured for example in the 2015 international marketing campaign and commercial of *Flower* too, a perfume by the Parisian brand Kenzo. The ramp is a current motif in Niemeyer's architecture, used to propose entrances to several public buildings behaving almost like a fortress' drawbridge, controlling very much how the access to the building is done and how. A similar thing than in the National Congress happened in the 1960 *Planalto Palace*.⁵ As the name itself of the palace indicates, the main floor of the building (plan) is elevated of a full floor (alto) becoming again a new ground disconnected from the level of the city, towards which Niemeyer recurs again to the use of a monumental ramp that he places in the axial middle of the main facade, and which allows to control the way in which the accesses are made towards the palace.⁶ Same thing, as well, happens in the Supreme Court headquarters. However, here the building is very subtly elevated from the ground of the city. Niemeyer employs a not very sloped and much wider ramp, as well monumental, but whose proposal of continuity with the rest of the city is understood as more evident here. Not only with ramps, which could as well be circular and curvy like for example the one flying around the dome of the National Museum of Brasilia, almost being metaphorical rings of Saturn, but as well with stairs, the mastery with which Niemeyer was able to design spatial fluidity is taken as a very inspirational example in here. The *Itamaraty Palace*, serving as headquarter for the Brazilian Ministry of External affairs, a part from the fact that is reachable through a long bridge, since that palace is surrounded by a pool full of water, counts with a very delicate stair in the entrance hall that is connecting both the ground floor with a higher mezzanine, rendering both levels almost the same one visually, offering an experience of spatial connection not only visible but as well physically experienceable. Stairs that even Queen Elisabeth II transit-

4 Niemeyer, Oscar, *Congreso Nacional, Brasilia*, in AV Monografias n. 125 (2007) pp. 78-85.

5 Niemeyer, Oscar, *Palacio de Planalto y Tribunal Supremo, Brasilia* in AV Monografias n. 125 (2007) pp. 72-77.

6 <https://divisare.com/projects/308171-oscar-niemeyer-gonzalo-viramonte-palacio-do-planalto-1960>

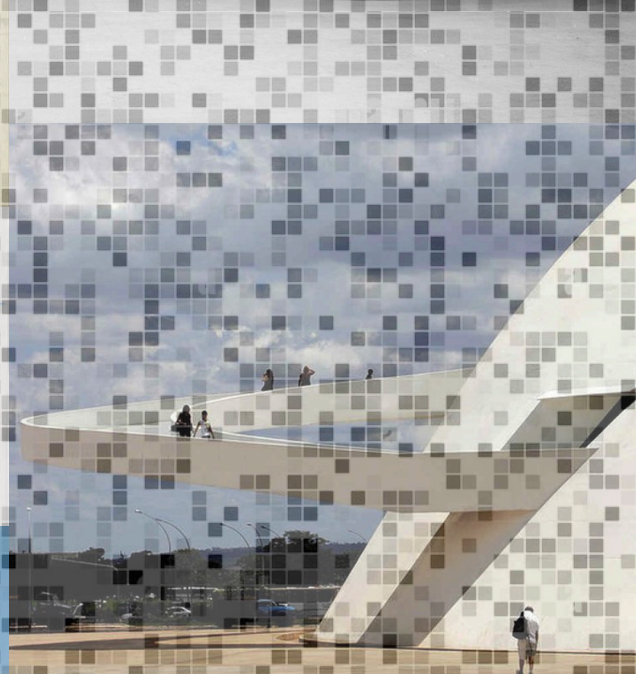
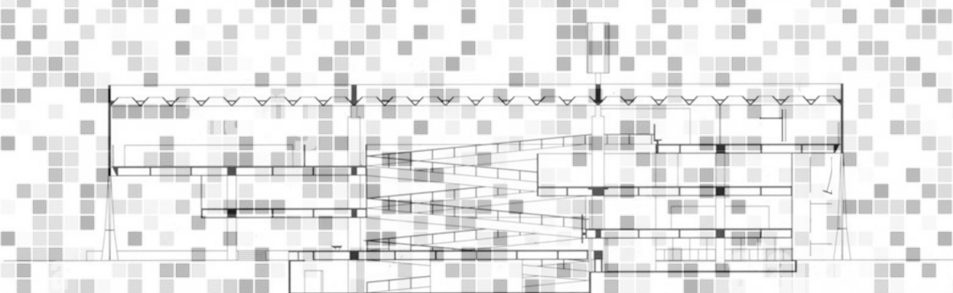
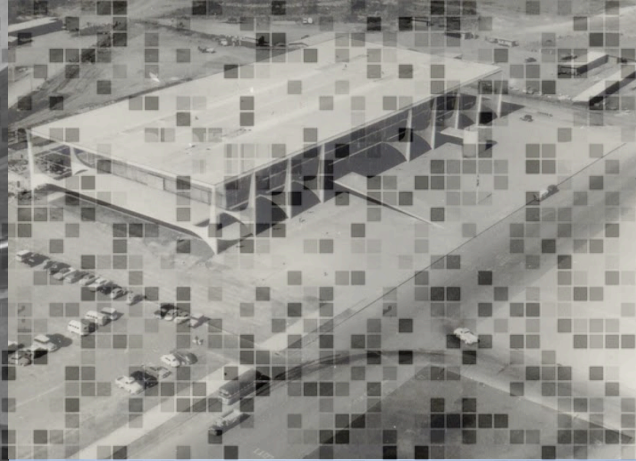
ed when in Brasilia at her first visit to the new capital of Brazil during the 1960s. The way in which Niemeyer was making use of such connecting or accessibility architectural elements at the scale of the building were even influencing the city because they were in many cases city-building thresholds that proposed the connection of buildings to the network of spaces constituting the city. By the monumental ramps, the architect was not only proposing an access but as well controlling the way in which this access was done, mastering like this the design of such an architectural element to define space.

The element of the ramp, being able to connect two different levels of grounds, it is rendered the main connecting feature of the Faculty of Architecture of Sao Paulo, built between 1961 and 1968 by Brazilian architect Joao Batista Vilanova Artigas. Almost contemporary to the creation of Brasilia, Vilanova Artigas designed the faculty of architecture having in mind an image of collectivity. A collectivity composed of students, teachers and citizens in general that should inhabit the space together as a coherent ensemble of civil actors. The reinforced concrete box composed by four elevated vertical screens holding a pierced roof and sustained by an ensemble of concrete columns, is hosting in the middle of the building a big void constituting the main space of the faculty, a void seen as a collective space and surrounded by boxes containing the classrooms. Additionally to this main atrium or collective void, Vilanova Artigas imagined an ensemble of crossing ramps interconnecting every level composing the school, joining like this through such display, the whole life and program of the building, rendering all the spaces in the different levels understood as a unit, as a whole, not only visually making use of the central voided atrium, but as well physically connecting the levels to the help of the crossing ramps display. As Vilanova Artigas himself asserts, *the building defends the thesis of spatial continuity [...] there is a continuous physical interconnection throughout the building*. To which he adds, *I saw it as a spatialization of democracy, in dignified spaces, without front doors, as I wanted it as a temple where all activities are valid*.⁷

Other additional projects like the unbuilt proposal of le Corbusier from 1964 for a Palais de Congrès in Strasbourg, as well as for example the unbuilt Wasa Boat museum in Stockholm by Sverre Fehn in 1982, are examples on how to use the element of a continuous ramp through which one could experience the totality of a building in relationship with the city, the first proposing a huge ramp crossing the body of the building and reaching its roof terrace, the other allowing to get in-

⁷ Vilanova Artigas, Joao Batista; Puntoni, Alvaro, *Vilanova Artigas : Arquitetos Brasileiros = Brazilian Architects*, Blau, Instituto Lina Bo e P.M. Bardi: Fundação Vilanova Artigas, São Paulo 1997, pp. 101.

Figure 10 & 11. FAUSP. Sao Paulo. Joao Batista Vilanova Artigas. 1961 - 1968. / Figure 12. Palais de Congrès. Strasbourg. Le Corbusier. 1964. / Figure 13. Wasa Boat Museum Project. Section. Stockholm. Sverre Fehn. 1982. / Figure 14. Veles e Vents. Valencia. David Chipperfield. 2006. / Figure 15. Planalto Palace. Brasilia. Oscar Niemeyer. 1960. / Figure 16 & 17. Exterior facade and inside staircase at Itamaraty Palace. 1970. / Figure 18. Circular ramp at the National Museum. Brasilia. Oscar Niemeyer. 2006.



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side of the depths of the earth little-to-little, to metaphorically feel how explorers found the Wasa boat sunk at the bottom of the sea.^{8,9}

Furthermore, it is not intended to leave escalators apart from this story. Featured in the front cover of Harvard's Guide to Shopping, a 2001 research project carried with students and other researchers and directed by Rem Koolhaas, the escalator is presented as a revolutionary invention having a huge impact especially on the shopping world since it is able to carry endlessly flows of people without the limitations lifts have, being exclusive boxes with a limited capacity.¹⁰ Escalators, even if not being ramps, they fluctuate nowadays between the spatial fluidity brought by a stair, being mechanized ones basically, and the fluidity brought by a ramp or slope. Visitors don't need to invest any effort though to go from one level to another, so from this point of view, they are quite of an advantage too and, compared to lifts, allow to still experience the space in a continuous way without the cut that means to get inside of a box, even if enclosed with transparent materials. Buildings like for example the 2005-2006 *Veles e Vents* in Valencia by David Chipperfield, as well as the 2011 Neutelings Riedijk Architects' *Museum am de Stroom*, used the help of escalators to propose a continuous spatial promenade around the whole building.

The 2000-2008 Norwegian National Opera building in Oslo by Snohetta that was conceived as wanting to be a *social monument* didn't make use of escalators to propose a continuous *parcours*.¹¹ However, a continuous comprehension of these buildings, understanding it as a continuous artificial ground sloping around itself, is perpetuated by the roof terraces behaving like a continuous ramp on top of which the collectivity is welcome to enjoy recreation and diversion time.

8 Le Corbusier, *Oeuvre complète*, volume 7, 1957-1965.

http://www.fondationlecorbusier.fr/corbuweb/morpheus.aspx?sysId=13&IrisObjectId=7295&sysLanguage=en-en&itemPos=137&itemSort=en-en_sort_string1%20&itemCount=215&sysParentName=&sysParentId=65

9 Ribas Seix, Carmen, *El retorn al subsòl: tres museus del segle XX*, in Cota Cero. Documentos de Proyectos Arquitectonicos, n°21, (2005) Edicions UPC, Barcelona, pp. 62-67.

10 Chung, Chihuahua Judy; Cha, Tae-Wook; Koolhaas, Rem; Leong, Sze Tsung; Chung, Chuiha Judy, *Harvard Design School Guide to Shopping*, Taschen, Köln 2001.

11 <https://snohetta.com/project/42-norwegian-national-opera-and-ballet>

3.5

INFRASTRUCTURAL BELOW-SLAB SPACES THAT BECOME PUBLIC INTERIORS

There is a point in history that could be fixed at the very beginning of the 20th century, when the traditional dichotomy between served spaces, generally found from the natural ground level of the city upwards, and serving spaces, being traditionally located beneath them, starts strongly dissolving and merging. Serving spaces in the modern city, some of which would have found their place in the underground of the city, in the below-slab world, progressively changed and started receiving the human presence as it has been exposed in the precedent chapters. With the appearance of metropolitan buried train lines, human beings were welcome below-slab, inside of the thickness of artificial grounds, in order to take the metro and be able to move from one side of the city to the other. Specifically, and from the invention and construction of such a logistics and transportation machine like New York's Grand Central Terminal was, at the very beginning of the century, the paradigm of served and serving spaces, located traditionally above and below-slab, changes radically and starts evolving towards a mix of functions where below-slab places start to be integrated in the network of urban public spaces, proposing complete artificial grounds where the collectivity is able to benefit from extra space, so not only above-slab, but as well below-slab. In this way, the understanding on the complexity of artificial grounds is starting to be completed here, when carefully acknowledging a change of serving below-slab spaces into dignified available spaces worthy of being considered as architectural, as designed for humans, and so the collectivity can inhabit. For it, several are going to be the matters that will be needed to be looked at closely for designers to propose or identify successful strategies that would render such spaces truly inhabitable. Some of this matters would be for example, which could be the impact of the structure and specific frameworks into such spaces, or how can the collectivity reach and access such places, which have to be properly linked to the rest of public spaces in the city. Which are the most adequate ways to deal with the technologies of transportation. And probably the most important, how can designers propose and take care of an adequate interior comfort, proposing public interiors that would count with good conditions of ventilation, natural lighting, thermic conveniences or a proper material execution of the interiors with as well adequate furniture.

During the construction of Grand Central Terminal, the *Guastavino tile vault system*, already mentioned previously, was used for roofing the several layers that were used below-slab for several functions.¹ As said, it was a technique for con-

¹ The vaults constructive system is called upon his forerunner, Valencian architect Rafael Guastavino Roig immigrated to the U.S.A. during the XIXth century. The vaulting system started to be used during the 1880s and got patented by Guastavino in 1892. Rafael Guastavino founded the Guastavino Company that,

structing robust, self-supporting arches and vaults with terracotta thin tiles proposing an adaptation to North American construction demands of the Mediterranean vaulting method. What interests here specifically is less how efficient in terms of economic reasons they were or easy to build but more, the atmosphere that these vaults were creating in the spaces below them, was something particular, especially from an aesthetic point of view. This solution, that was used in order to hold the slabs covering below-slab spaces, was quite of a particular milestone in the construction of slabs and infrastructural basements in general, already at the beginning of the century and even before reinforced concrete started being commonly used. Starting with the fact that such vaults could be built much more quickly and that they had a good inherent fire resistance, together with the fact that big spans could be covered with domes designed according with this system, made of it a quite popular constructive technique for important public buildings, bringing with it a whole ensemble of entrepreneurs that would generate vaulted spaces for being used by the public. The Guastavino tile vault system was then a powerful constructive system, conferring to the spaces it covered a specific and aesthetically comfortable atmosphere at the same time. The Della Robbia Bar, located in the former Vanderbilt Hotel and built at the beginning of the 1910s was a restaurant composed by an ensemble of Guastavino vaults and arches executed with a variety of colored glazed tiles designing several geometric motifs. The spatial effect the multiple vaults created, delicately glazed in different colors and laid in a herringbone fashion, typical of the Guastavino Company's work, was partly behind the success and the attraction of customers of Della Robbia Grill Room and Bar.² Analogously, even if in a more sober and subtle style, the glazed white tiles of the Oyster Bar at Grand Central Terminal, being a simpler example of the same project of public interior at the beginning of the XXth century, used the Guastavino system as a spatial feature that was bringing a special character enjoyed by the people inhabiting it, proposing a strong spatial condition that welcomed users, and that, as it is proven, proposed one of the first underground public interior that was going in the direction of rendering such infrastructural basements into public spaces where the collectivity would have available extra spaces where to stop and eat, and where, why not, enjoy some recreation and free time as well.

making use of such specific technique, installed structural masonry vaults in more than thousand buildings across the United States, especially in New York and Massachusetts.

² For more info on the Guastavino system, please see: Ochsendorf, John; Freeman, Michael; Guastavino, Rafael, *Guastavino Vaulting : the Art of Structural Tile*, Princeton Architectural Press, New York 2010.

Figure 1. Della Robbia Bar. Former Vanderbilt Hotel. 1912. / Figure 2. Moscow metro station of Mayakowskaya. / Figure 3, 4 & 7. Pictures and section of a transparent slab. Austrian Postal Savings Bank. Wien. Otto Wagner. 1904 - 1912. / Figure 5. Oyster bar and restaurant. Grand Central Terminal. Circa 1915. / Figure 6. Moscow metro station of Komsomolskaya.



NO INFRINGEMENT INTENDED



From this point at the beginning of the 20th century, the transportation technologies began acquiring a big importance, both in Europe and in the United States. Acquiring a big importance into the daily life of the collectivity, and at the same time, opening the possibility to start making use of the underground of the city and its below-slab spaces, potentially proposing to turn the infrastructural basements of artificial grounds, into public spaces for the collectivity in the city.

It is then a fact that the Oyster Bar in New York's Grand Central Terminal proposed an indoor and underground space for the collectivity becoming a below-slab pleasant restaurant where, thanks to the spatiality the Guastavino vaulted arches were creating, together with the programmatic functions hosted in such space, one can say was quite of a success of human occupation or below-slab public spaces. However, and as it is well known, spaces below-slab have been, and still some are, very unfriendly and cause a general rejection. Comparing them with an open and natural environment, or at least just with an outdoors one, they are diametrically opposed spaces by definition since they generally lack the natural light offered by the sun, good ventilation, climatic comfort, and natural elements that remind the user of a living space. For trying to solve the problem with light, probably one of the most important elements that could bring some additional comfort to below-slab interiors, some first tests were realized on how to render slabs transparent already in the second half of the 19th century. In 1845, a system was developed by United States pioneer of reinforced concrete Thaddeus Hyatt in order to construct walkable slabs incorporating in it glass bricks that would bring some light to half-sunken spaces below it. The 1888 Gustave Falconnier Swiss system of glass bricks became well-known as well especially because Auguste Perret used it for the light wall at the staircase in his project at rue Franklin or Hendrik Petrus Berlage for covering ceilings in his *De Algemeene* in Amsterdam³. At the beginning of the 20th century, Friedrich L. Keppler, the director of the German branch of the Luxfer glass Prism company, introduced the 1909 *Glaseisenbeton*, a way in which full floors could be built with glass brick bringing more transparency. With the help of concrete armors, he patented the system *Kepler* to build walkable surfaces - slabs - made out of glass bricks.⁴ Along the years, the many essays brought such bricks to become thinner, and less heavy, to the point that nowadays it is possible to cover big surfaces of ground with mono-layer glass pieces of considerable sizes like for example the ones employed to cover the surface of the main entrance bridge-like gateway of the Opera Building in Valencia, Spain, by Santiago Calatrava, that at the same time allow for the light to pass through and go to the floor below it.

3 Iori, Tullia, *Le plancher en vetrocimento en Italie*, in Gargiani, Roberto (ed.) in *L'architave, Le Plancher, La Plate-forme : Nouvelle Histoire De La Constructio*, Presses Polytechniques Et Universitaires Romandes, Lausanne 2012, pp. 696-702.

4 Ibid.

In below-slabs spaces, since a generally opaque reinforced concrete slab stands between the sun and the spaces, the absence of natural light is almost a given fact in every occasion. But there have been works experimenting then with glass bricks already at the beginning of the twentieth century, trying to find ways in which to overcome these limitations. An example of such is the structural glass floor at ground level that Otto Wagner constructed at his 1904-1912 Austrian Postal Savings Bank, being this building an example of one of the first implementations of such constructive materials and techniques in Europe.⁵ The building, occupying a full block of the urban fabric of Vienna, and being five levels high, contains an ensemble of central covered courtyards bringing the light to the offices disposed along the complex. But in addition, below-slab spaces are planned in the half sunken basement of the building. This is exactly where Wagner decided to design structural semi-transparent slabs to the help of squared glass bricks integrated in the slab. In this way, and thanks to the transparency of such glass bricks, some natural light is able to penetrate through the first glass roof covering the main courtyard at the height of the fifth floor, through the second canopy, which is the one that is visible when entering to the main hall, and finally reaching the below-slab spaces thanks to the transparency of the slab. In this way, Wagner joined maybe several intentions: of course the practical and programmatic one of technically bring natural light to below-slab spaces, but it could be as well even be seen as a symbolic feature⁶ of the design of the building, kind of representing a sort of transparency in the functioning of the bank.

Some underground Metro stations have as well been lit thanks to systems of glass bricks letting light pierce semi-transparent slabs already from the beginning of the 20th century. However, the example of metro stations is taken here regarding the materials and design with which it has been possible to propose successful public interiors in underground spaces. Popularly known by some as the *people's palace*, the network of metro lines of Moscow accumulates a series of metro stations that have been since the opening of the first metro line in 1935, an ensemble of design exercises on public underground interiors from which still nowadays is possible to extract knowledge. Featuring all kinds of styles and materials along the years, Moscow metro stations are an example on how to propose public interiors for the public collectivity that uses public transport, able to dignify the quality of such public spaces. From Alexey Dushkin's very vanguardist 1938 *Mayakowskaya* metro station, an example of Stalinist architecture, that proposed a very much white vaulted alley with a marble flooring featuring geometric figures on the ground to, for example, the 1952 *Komsomolskaya* station designed by Alexey Shchusev in *Petrine baroque* style and dedicated to post-war labor,

⁵ Antonucci, Micaela; Wagner, Otto, *Otto Wagner*, Motta architettura, Milano 2010.

⁶ <https://www.ottowagner.com/oesterreichische-postsparkasse>

featuring very much baroque-style ornaments, Corinthian columns and big chandelier-like electrical lamps hanging from the barrel vault. In here, it is possible to identify a particular attention to every single detail, ornamental, in terms of inner spatial fluidity or in terms of materialization, contributing like this to produce welcoming spatial impressions of such below-slab spaces.

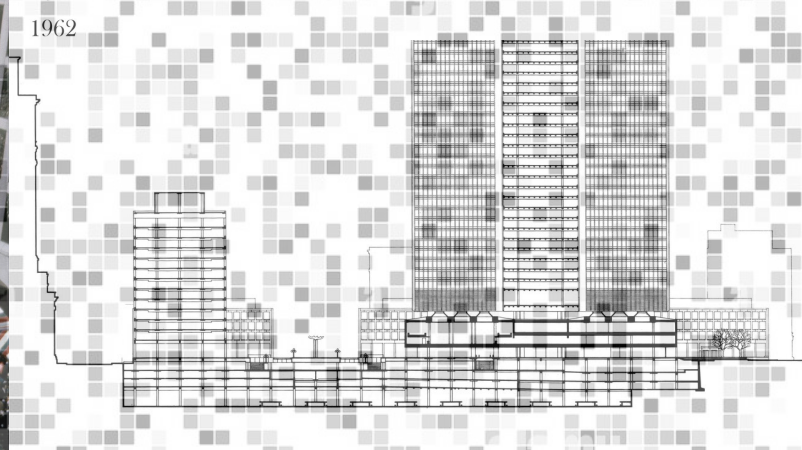
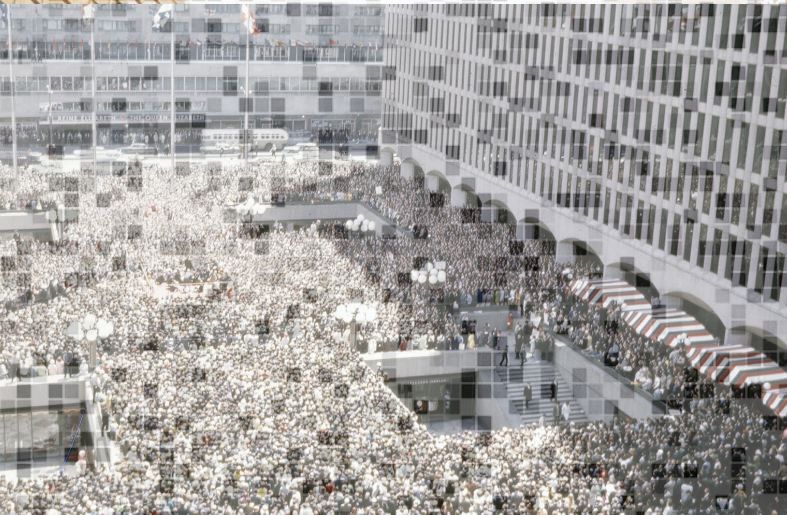
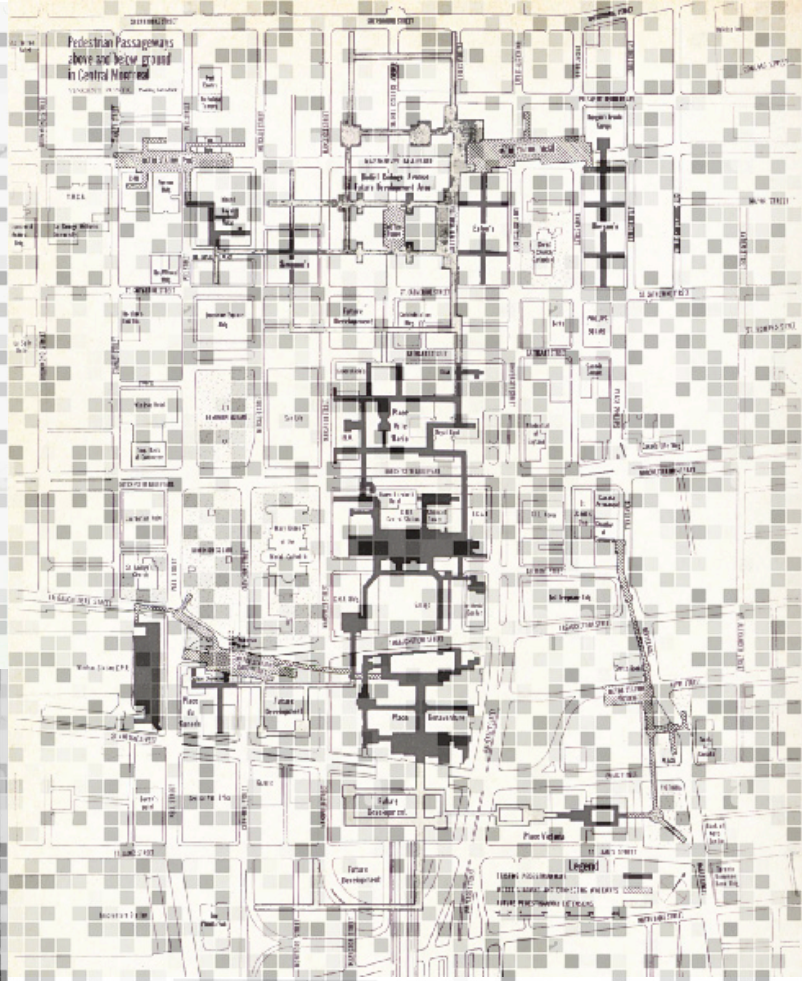
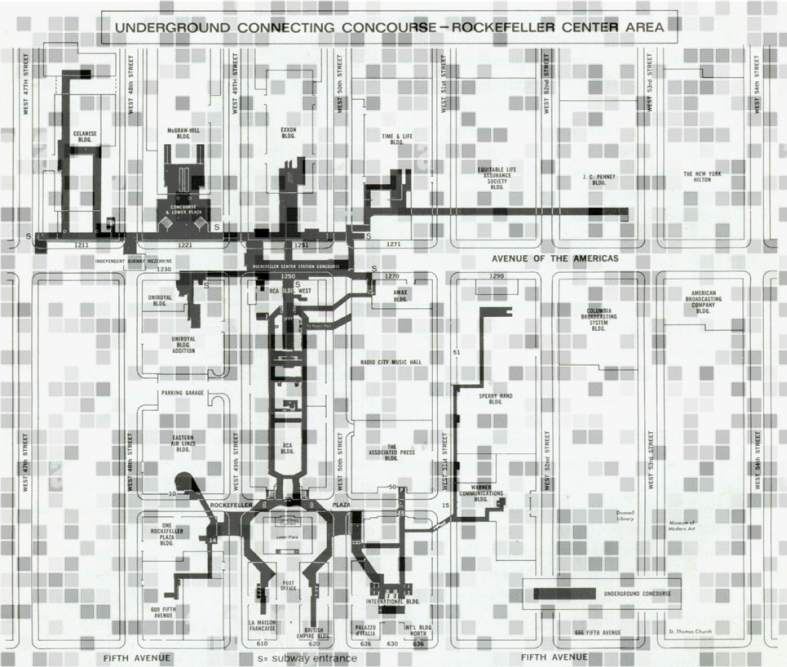
The apparition of the first public underground interiors related with the metro line systems of big cities were only the beginning of a big family of examples that, even though they based their origin into infrastructural or serving functions, are going to little-to-little give birth along the century to several underground public interiors in which the user would stay longer time, like it was already the case with the Oyster bar. Below-slab public spaces where the collectivity would not only pass but would have the opportunity to stop by, visit some shops and make some purchases, go to the movies, etc. In this sense, the several urban blocks of offices, shops and the radio City Theater conforming the 1935 Rockefeller Center, are a good example of a complex counting with an *extensive underground network that connected all the components of the complex under the city streets*.⁷ There is a special attention in the design of this underground network, containing services and shops, towards the fact of bringing natural light to the below spaces through a system of light wells, the biggest of them being the main sunken Plaza at the middle of the complex, where the public skating rink is located still every winter. These spaces could be considered somewhat *effective decorated tunnels*, but at the same time, they conform a system of public underground interiors, where it is possible not only to transit but there is as well some spatial dilatations where to meet or stay with others, and more programs traditionally placed at the natural ground of the city, representing one of the first tests of an urban network of streets happening inside the infrastructural basement of the city, so below-slab, making it one step closer to a properly collective one.⁸

When looking at the implementation of displays that specifically would aim and devote themselves to a collective life under the natural level of the city, probably one of the most extensive, complex and successful network of underground public spaces, properly designed for the collectivity, are the place Ville-Marie and the master plan for adjacent blocks in downtown Montreal built between 1962 and 1966. Designed by I.M. Pei, Henry N. Cobb and planner Vincent Ponte, *the project was a complex three-dimensional operation designed to exploit and integrate the maximum congestion of existing, new and projected infrastructures, with ex-*

⁷ Pimlott, Mark, *The Public Interior as Idea and Project*, Jap Sam Books, Heijningen 2016. pp. 265.

⁸ Ibid.

Figure 7. Rockefeller center underground connections network. New York, USA. 1935. / Figure 8. Sunken Plaza at Rockefeller Center. New York, USA. 1935. / Figure 9, 10, 12 & 13. Place Ville-Marie, Montréal. Canada. I.M. Pei & Henry N. Cobb. 1962-1966. / Figure 11. Pedestrian passageways above and below ground in Montreal. Vincent Ponte. Canada. 1971.



isting rail lines underground, a parking and a layer of pedestrian passageways – described as a promenade – just under street level.⁹ To cover a big hole in the ground of the city center was the first enterprise that was done in order to build the Place Ville-Marie skyscraper-plaza complex. The existing rail lines then, got covered by several layers of services and new innovative public spaces. Directly above the rail lines and as part of the multi-level system, two floors of parking got built, and on top of it, an indoor promenade level which became the *seed crystal for a whole lattice of development spreading in all directions from the original center*.¹⁰ As Vincent Ponte exposes, the moment in which demands generated by a very wide collectivity are not any more absorbable by the statistical capacity of the existing street pattern, innovative solutions have to be proposed by planners. In a city like Montreal in which he identified three big groups of different kind of circulations - cars, trucks and pedestrian - the idea was to segregate such fluxes into separated spheres and networks of underground tunnels once again, but this time proposing a very extensive *climate-controlled sheltered network of commercial centers, and promenades over or under passing streets, proposing a new level of elegance and sophistication* making of the center a *beautiful yet practical and serviceable core* according to Ponte.¹¹ The ensemble of underground promenades below Place-Marie in Montreal, a true multi-level infrastructural basement as such this example incarnates, it is probably one of the first clear examples on how it was possible to transform such below-slab traditionally servant spaces into architecture. In words of Ponte, the ensemble of indoor spaces starting from Place-Marie in Montreal, it is a *physical structure in its busy downtown area that could - and actually do nowadays - appropriately contain and heighten all this life and movement* serving the city as an *advanced, comprehensive and successful* example of downtown planning. A *common base structure composed of plazas, malls, covered shopping areas, underground trucking networks and parking garages* linking all the separate buildings together, and making of these promenades *their common roots* connecting them to all subway and railway stations, *forming a teeming urban pedestrian environment*, having always placed the pedestrian collectivity at stake, proposing a whole new interior city underground, a proper network of urban spaces for pedestrians, where proper conditions of in-habitability are aimed to be reached at every place.¹²

This underground network actually started to be studied and exported worldwide. The fact of proposing indoor streets in which pedestrians could move freely and securely, as well as to have a climatic condition that would not be as hard in winter, and making possible to use the ground at the natural level of the city for extra

⁹ Ibid.

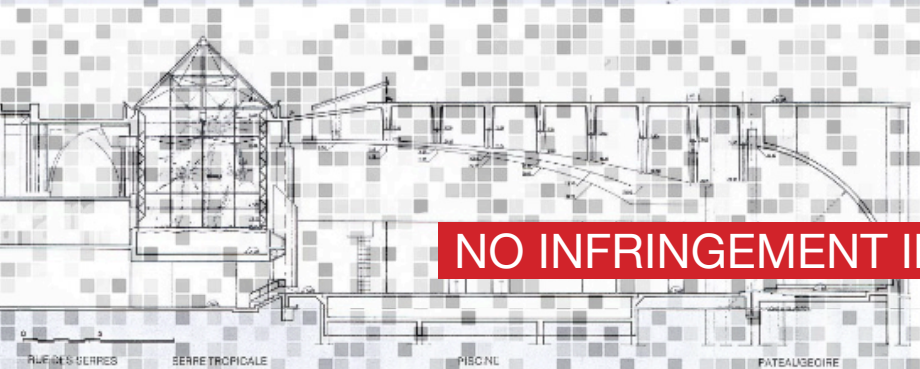
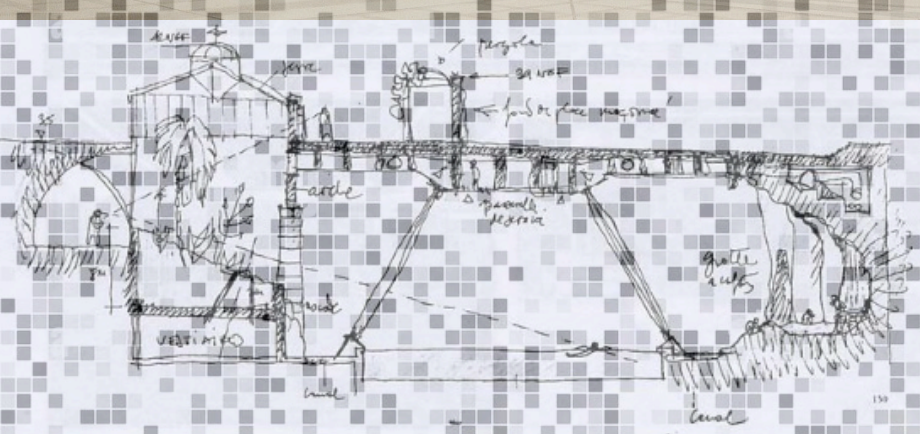
¹⁰ Ponte, Vincent, *Montreal's Multi-Level City Center*, Traffic engineering (Sept. 1971) pp. 20-25.

¹¹ Ibid.

¹² Ibid.

activities, as well as bringing the possibility of connecting such indoor pedestrian spaces to other layers situated still below them, like parking garages or metro stations, is what actually happens as well at Les Halles complex in Paris. After the decision of demolishing the former wholesale market complex of Les Halles built in the 1860s-70s by Victor Baltard, Paul Chemetov proposed an ensemble of equipped public spaces that would substitute the former market in this very centric spot of Paris. The new ensemble of spaces or complex of public equipment was built underground, leaving like this an available above-slab space at the level of the city, built artificially, and that could be used as an additional public open space for the collectivity, apart from the additional below-slab programs. Built in the first half of the 1980s as part of the national and local boost in public and cultural investment by institutions, the complex was constituted of two underground levels hosting on the lower one an auditorium, a photo library, an Olympic swimming pool, a sports room and several additional rooms for dancing, doing theater, etc, and a commercial covered network of spaces composed by a *squared* square, a big gallery and a semicircular space. In the upper level there were additionally more commercial spaces as well as a video library, a discotheque and an exotic green house with palm trees that was used as well as a light shaft to bring natural light down to the Olympic swimming pool. In addition to all of these public programs, there was as well, parallelly, a hidden network of serving spaces and tunnels. Above these two underground levels, constituting a true collective infrastructural basement, with below-slab streets, squares and public facilities, a big above-slab esplanade was still offered to the city on the base of the construction of the underground spaces, conforming a truly urban artificial ground constructed for a political collectivity. This very big project, counting with a multitude of spaces and specific programs related with not only consumerism but as well with culture and a public access to recreation, sports and amusement, was moved clearly by political will that believed in the fact of render accessible such service to a broader part of the population, equipping the city with additional spaces for the collectivity to experience diversion. The roof the whole complex, including as well the *sell-like, large-dimensioned ceiling construction* above the Olympic swimming pool, a specific structural framework adopted and designed for the particularity of the site, *serves as a base for the story above*, becoming an above-slab public space on top of a truly collective basement, into which, and through the help of the tropical palm trees green house, the natural light is penetrating and reflecting on the water that illuminates the cave-like ceiling.¹³ All these underground atmosphere finally recalls or *suggests a more exotic world, a holiday paradise which (it) may (be) observe(d) through the large peep-holes of a*

13 Anon, *Une grotte sous Paris : Piscine Suzanne-Berrioux, Forum des Halles, Paris. 1985*, Werk, Bauen + Wohnen, Nr. 1/2/1988. pp. 46-51.



fictitious aquarium, humanizing and transforming underground spaces, traditionally used for services formerly, into inhabitable architectures, through its design.¹⁴ At the Hague, Rem Koolhaas conceived in 1994 and built finally ten years after, in 2004, an underground tunnel that he defined as an *element of infrastructure and a building at the same time*.¹⁵ The design was indeed an infrastructural tunnel but that was meant to host several different kinds of spaces like, two metro stations, and as well a 500 cars linear parking garage using the length of the 1'200 meters tunnel. As a project that was born from the will of the municipality to grow denser but liberating the level of the natural ground of the city from cars, this *Souterrain Tram Tunnel* was proposed from the very beginning as needing to be an architecture consisting of a multistory tunnel, sandwiching a tram station with a parking garage, but bringing a *positive effect when applied to the rigor of transportation pragmatism*.¹⁶ There are openings that allow natural light to get inside of the tunnel-building as well, platforms to access the trams are conceived as completely indoors and covered, counting with a wooden flooring that confers the urban space with a sort of domestic comfort. The natural light, but the artificial lighting specifically, is designed to enhance the *surprising beauty of the rock-like concrete walls, poured in the irregular coastal soil of The Hague*.¹⁷ All of this features, together with the roughness of apparent reinforced concrete slabs containing the parking garage and hanging above the train tracks, together with the ramps, allowing for cars to reach the parking as well as for users to reach the tram, recreate an interior atmosphere that is rich in terms of attention to detail and that end up proposing another example of welcoming interior for its users even if in an underground condition. An artificial ground counting with below-slab spaces properly ventilated as well thanks to the tunnel condition that directly acts like a ventilation duct.

With such examples it seems then clear that, rendering a slab transparent by means of glass bricks or big glass surfaces, is not the only way in which light can be brought to the below-slab spaces. When taking slabs as if they were walls, proposing punctual openings along the slabs analogously to a wall that can have windows, light can be brought to lighten up these below-slab spaces. This is the case, for example, of the strategy that has been followed for the design of several museums in the last decade that, more and more, have proposed underground extensions, adding extra exhibition spaces to existing buildings as an available asset considering the potential spaces hiding below-slab. It is the

¹⁴ Ibid.

¹⁵ <https://www.oma.com/projects/souterrain-tram-tunnel>

¹⁶ Ibid.

¹⁷ Ibid.

case for example of the 2006-2012 extension that Spanish architects Fuensanta Nieto and Enrique Sobejano did at the *Joanneum Museum* in Graz, Austria.¹⁸ With the extension, the architects decided to occupy the underground of the open space left between the existing historical buildings. Through it, they didn't only propose a common access to the three buildings but, as well, proposed an above-slab space acting as an artificial public ground directly connected with the rest of public spaces at the natural level of the city. Through the circular patios that pierced the new slab, on one side the main access is done with the help of a couple of escalators, and on the other side, light is brought to these below-slab spaces arriving to both the two floor levels below-ground.

In Helsinki, JKMM architects added in 2018 a subterranean extension to the former Amos Anderson Art Museum, known as Amos Rex.¹⁹ It is once again a project in which the natural underground is used as an available asset and occupied with extra programmatic facilities below-slab. On top of the slab created to cover such spaces, this time, big oculus propose light for the below-slab interiors at the same time as proposing a new topography at the same level as the natural level of the city. Visitors use this new topography as a skate park and a playful installation in which to enjoy free time with their bike, or running on top of this new artificial urban topography, etc. In the inside, dome-like big rooms at the first underground level out of two, are lit thanks to the external windows or oculus that are strategically oriented and that are made in a way so people from the outside can look inwards. In this way, at the same time that this design strategy is bringing light to below-slab spaces, is as well generating a not only visual but as well experiential and physical relationship between above and below-slab spaces.

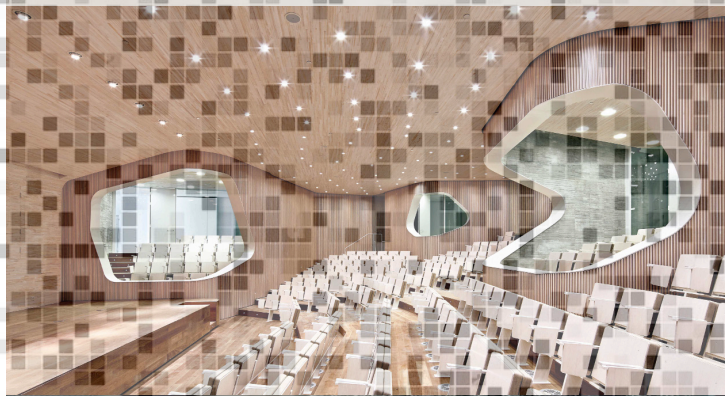
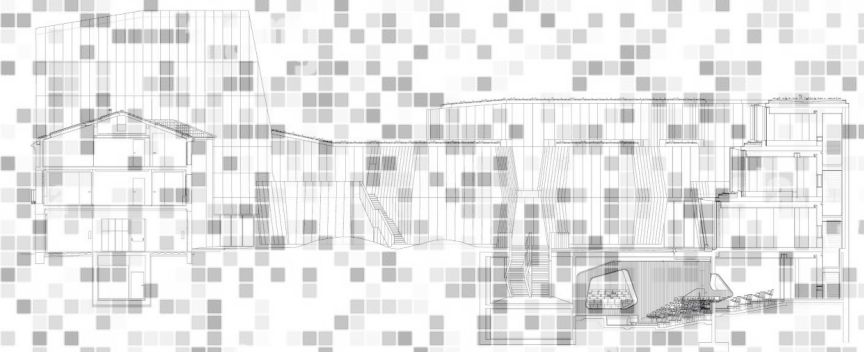
The nature and design of these newly generated below-slab places, especially talking about the materialization and the atmospheres of such public interiors is important too. Proposing an auditorium in an underground condition, Cristina Díaz and Efrén García from Amid.cero9, built in 2015 the new headquarters for the *Free Education Institution* by the Giner de los Ríos Foundation.²⁰ In it, the very narrow plot was above all reserved in its majority for a garden, occupying the center of all the buildings. This garden, built completely artificial, is an on-a-slab space that hosts an auditorium below itself. This completely underground facility of the Education Institution, the auditorium, is however designed in a way that,

18 Nieto, Fuensanta; Sobejano, Enrique, *Museo Joanneum, Graz*. in *Arquitectura Viva* n°150 (2013) pp. 70-82. <https://arquitecturaviva.com/obras/museo-joanneum>

19 <https://jkmm.fi/work/amos-rex-museum/>

20 <https://www.cero9.com/project/fundacion-giner-de-los-rios-institucion-libre-de-ensenanza-i-l-e/>

Figure 23, 24 & 29. Sections and picture. Joanneum Museum extension. Graz. Nieto y Sobejano. 2006 - 2012. / Figure 25 & 30. Section. Amos Rex. Helsinki. JKMM. 2018. / Figure 26 & 31. Picture and section. Free Education Institution" by the Giner de los Ríos Foundation. Madrid. Amid.cero9. 2015. / Figure 27, 28 & 32. Sections and picture. Caixa Forum Sevilla. Guillermo Vazquez Consuegra. 2017.



by executing some holes through the containment walls on which the garden is sustained, proposing a sort of big windows dilating the spatial experience, as well as by covering the whole ceiling, walls and floor with wood, and tries to feature such an underground space as a welcoming facility for the collectivity. The raw concrete visible at the other side of the carrying walls contrast as well the wooden space, offering sort of more intimate opera boxes-like spaces amongst the rest of the auditorium.

In a period where cities are becoming denser, below-slab spaces have shown themselves available assets in the city in order to grow the available quantity of space in public space networks. In Sevilla, in the most oriental part of the former plot where expo 1992 was celebrated, the Cartuja Island, and that thirty years ago hosted a big quantity of isolated international pavilions, it got built in 2008 a commercial center complex constituted by a big undulating podium whose surface is covered with greenery at some points, and a 180m tower known as the Sevilla Tower or Pelli Tower, named after the architect responsible of such urbanistic operation, Argentinian architect Cesar Pelli. Even if the project was able to bring the interest of many citizens and firms at first, and started occupying the many shop windows along the main “street” of this podium-like Artificial Ground, the commercial premises and parking lots built on the opposite extremity of the tower, were never used because probably they were fruit of an overestimation of needs and a too big calculation in terms of spaces for commercial premises according to the size of the city. However, a usage was found for this available artificial ground that, with the project of Spanish architect Guillermo Vazquez Consuegra, got retransformed into Sevilla’s new Caixa Forum in 2017, the Sevilla Headquarters forming part of the network of cultural centers promoted by the La Caixa Banking Private Foundation.²¹ The architect received actually existing below-slab empty spaces that were already built. The project was aiming then on one side to transform the below-slab spaces acquired by the foundation into exhibition and meeting spaces, even if originally were designed and built to serve as an underground parking garage. On the other side, a metallic structure positioned above the slab, having the shape of a kind of geometric cloud, was serving on one side as an access canopy, easily recognizable from the outside and offering shadow to the area, covering as well the escalators that were leading downwards, and as well as, on one of its extremes, the plastic figure was used to bring natural light to the below-slab spaces, piercing the slab at a point where the cloud-like canopy was touching the slab of such an artificial ground.

The architect, that originally was asked to conceive a building from scratch, had to come later with a solution for transforming the below-slab spaces designed to serve as a parking garage that were finally assigned for such purpose into a

²¹ <https://www.vazquezconsuegra.com/caixaforum-sevilla-2/>

welcoming cultural center for the collectivity. *The occupancy strategy is based on an analysis of the existing spaces and the uses previously planned for the Pelli's complex Podium Building. The structure already built has inevitably conditioned both the distribution of the program and the spatial configuration of the different uses. Thus, the main strategy is to locate a series of relatively autonomous volumes within the existing structure seeking coexistence between each of the actions.*²²

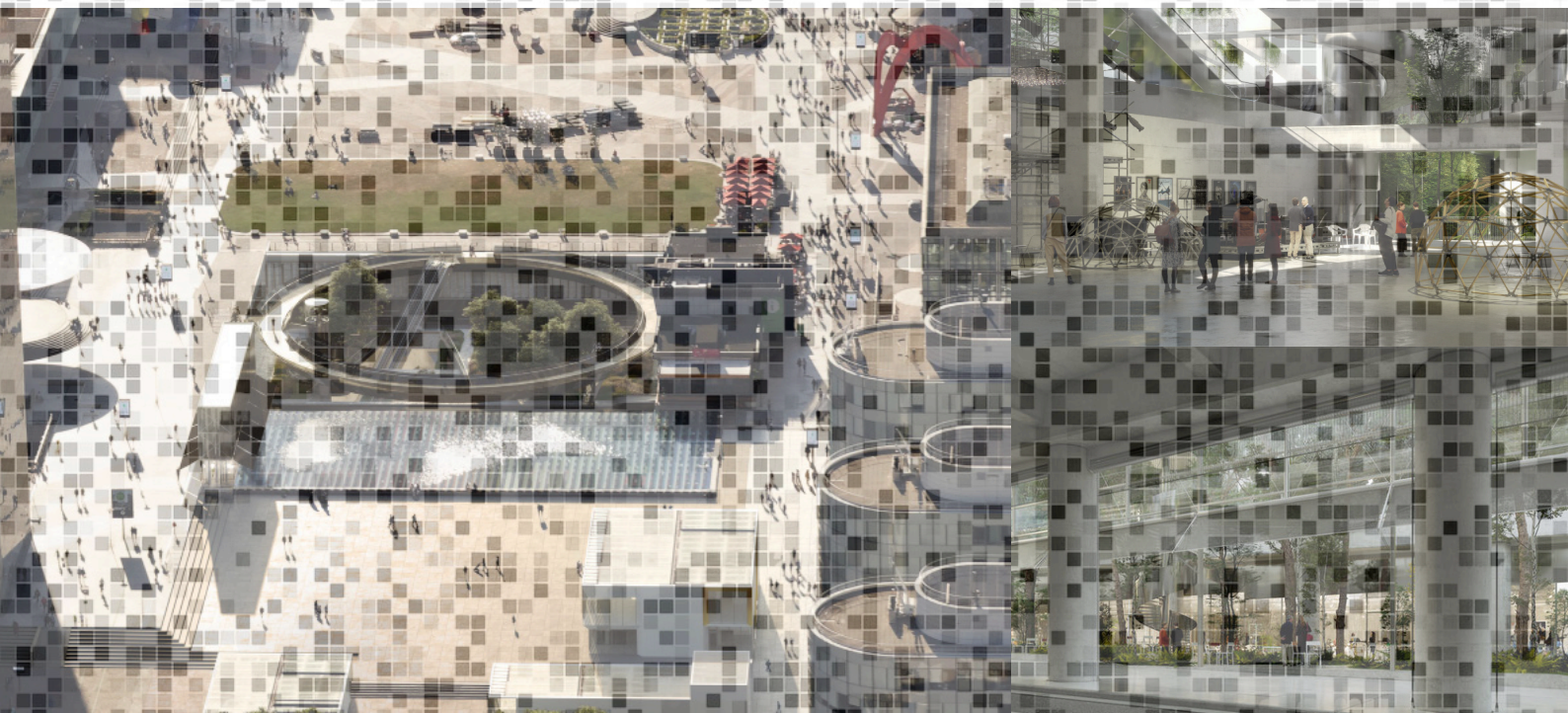
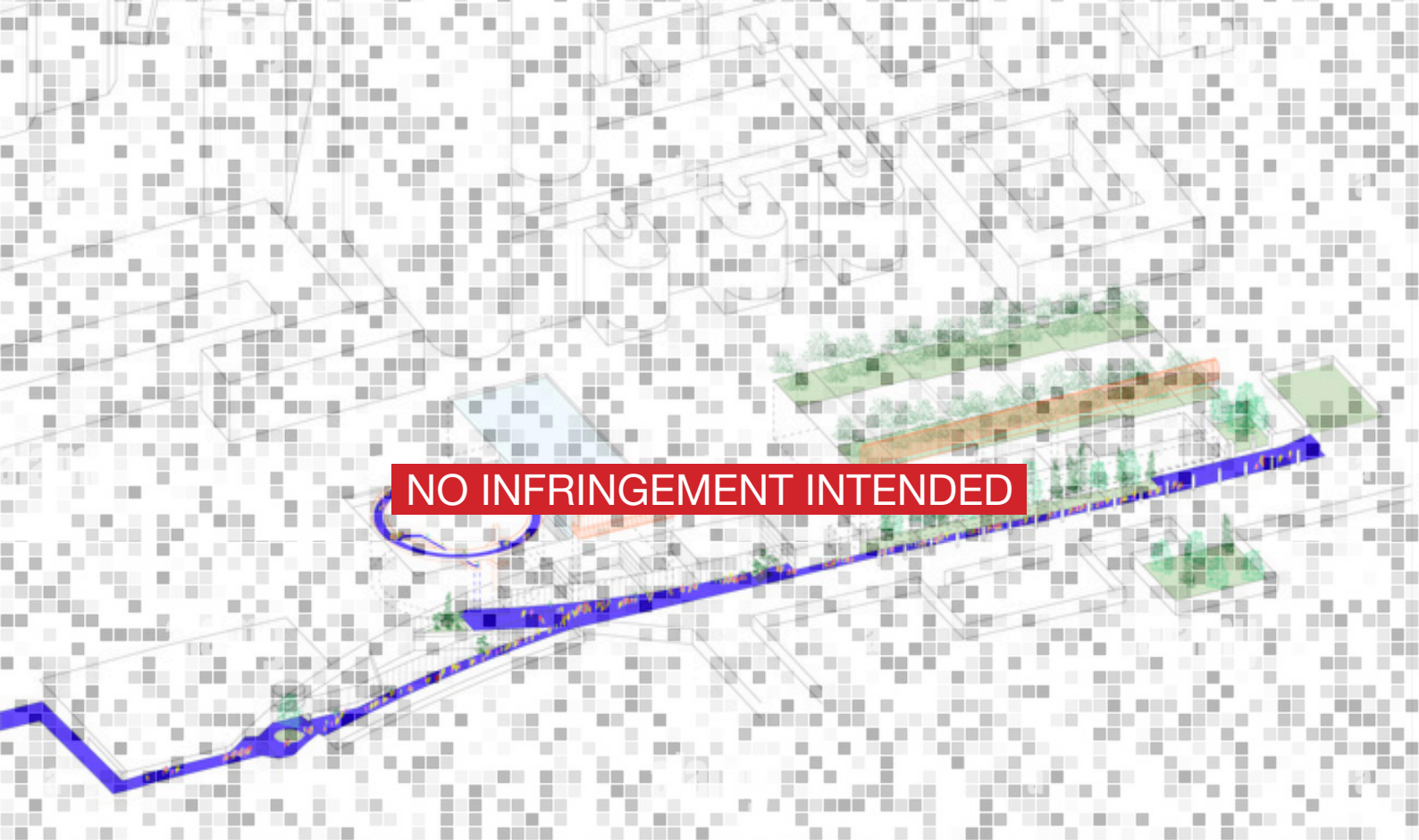
And so, once having understood the potential that existing artificial grounds can incarnate through their specific complexity, it is not at all strange to find already, in the contemporaneity, examples of projects that are making an exercise of re-appropriation of existing spaces above and below-ground especially, collecting efforts in the direction of rendering such available spaces into lively public architectural spaces. The same thing that Vázquez Consuegra tried to do with the existing below-slab spaces of the Pelli Podium, reconverting them into appealing spaces devoted to culture and rendered accessible to a public collectivity able to use such spaces in a way that would inspire them, but as well divert them or offer some sort of recreation, is what the Belgian office Baukunst proposed to do with their winning proposal for giving some new value to all vacant spaces below-slab under the big urban slab of La Défense, in Paris.

In 2020, a competition was organized by Paris La Défense to reinvent and *value* the unexploited and vacant spaces below the slab of La Défense.²³ A network of more than twenty thousand square meters is currently unused below the slab. Baukunst, directed by Adrien Verschuere, won the competition to transform such available spaces into public places suitable for arts, events and sports. Possibly sharing the lineage with Chemetov's collective infrastructural basement constituting the artificial ground of Les Halles, Baukunst's project tries to enhance the porosity between the above-slab space - spaces on the *dalle* - and the below-slab vacant places meant to become a contemporary example of former and unused infrastructural basement rendered public for the collectivity. Thanks to design strategies, the necessary ingredients to do so are brought, like for example extra access points are designed and are increasing the porosity of the slab, there are points bringing natural light inside of the below-slab spaces, a fountain and planted nature is planned additionally to the landscape designed by Dan Kiley on the above-slab, and so on. Through the winning project, that proposes a big oculus in the middle of the existing slab that brings light and proposes a large access to the inferior layers, the possibility for contemporary implementation of unused surfaces in the city, built artificially, is rendered visible as a very plausible fact.

²² Vázquez Consuegra, Guillermo, *Centro Cultural Caixa Forum, Sevilla*, in *AV Monografías* 203-204 (2018) pp. 68-77.

²³ It is the term that French press used: "valoriser."

To have a knowledge on the lineage of underground serving spaces that have been traditionally occupying the underground of cities, covered thanks to the technical advancements on construction techniques that rendered possible to build slabs on top of them, is useful to understand as well which could be the potential steps to be followed, acknowledging the potential that below-slab spaces can have as well to be used as additional public places for the collectivity, and how they can be rendered inhabitable.



4

TRANSFORMING URBAN VACANCIES INTO URBAN SLABS

Re-discovering multi-level public facilities

Urban Slabs want to become the functional and symbolic hearts of contemporary cities and their collectivity. By creating new urban grounds, the resulting spaces, above and below it, are considered capable of reassembling the contemporary collectivity. Urban Slabs intrinsically propose available free and well-delimited places for physically inhabiting them. In addition, they are connected with all the necessary technical urban networks such as public transportation, roads, water, information, etc, making of them highly accessible and well equipped facilities.

The aim of the previous three chapters has been to explore, through the study of existing examples, the complexity of Urban Slabs and advance in the definition of this specific kind of public spaces from a design point of view. Through it, useful design operations and tools applicable to contemporary urban interventions have been extracted.

Furthermore, and by analyzing the previous examples which ambiguously ambulate between the scale of the building and the one of the city, an important strength of architectural design in planning and re-thinking the urban scenario has been demonstrated. The research believes that it is very much possible to construct and conceive the city of tomorrow by designing specific architectures.

However, and in order to design and conceive the present and future network of urban public spaces, it becomes crucial to take into consideration the activities that these places should accommodate. This fourth chapter, as another consequence of the study of the precedent examples, features nonproductive and recreational activities as the main activities that will be hosted by contemporary Urban Slabs. As a strategy to effectively correspond to the needs of a contemporary collectivity, recreational activities hosted by these new places are seen as an ambitious exercise, providing ample and adequate free spaces where citizens can spend in a nonproductive way their free hours.

A last notion is to highlight: the one of the spatial vacancies in the city, towards which specific solutions are going to be exemplified through a design project. To rediscover the potentialities of an unused and extensive urban roof top, and the spaces available below it, the operating Commercial Center in the city of Valencia, *Nuevo Centro*, is going to be transformed introducing the several learnings on Urban Slabs in the design project. As an open conclusion to this thesis, the re appropriation of the roof top of the commercial center *Nuevo Centro* - New Center - together with the reactivation of the subsequent layers below, is featured at the end of this thesis as a practical example. A horizontal architecture, specifically consisting of ground design that will show ways to reshape the existing concrete slab facilitating like this the encounter of people for gathering together, and making use of this newly rendered accessible space in the city.

4.1

THE POWER BEHIND OPEN PUBLIC SPACES AND THE RIGHT TO RECREATION

Throughout history, many have been the examples in which it has been possible to identify a use of public central places in cities being different from commercial exchanges, performing electoral functions or having access to infrastructural resources. Ruling forces have as well promoted a parallel use of such places related with specific celebrations and events. With more authoritarian regimes, like monarchies or empires, such events have been mainly used for indoctrinating the collectivity, either from a religious point of view or by using them to promote the power of the King. It is believed here that these uses of public spaces show a first step in the direction of using them for nonproductive activities.

Plaza Mayor in Madrid has been for example testimony of several celebrations from its foundation, amongst which it is noticeable the equestrian games that got organized in 1623 to honor and celebrate the wedding of Lady Maria of Austria, sister of the King Philip the IVth, together with the Prince of Wales. Juan de la Corte represented in several of his paintings of the same year a multitude of horsemen organized into a big quantity of squadrons that boast of their mastery in commanding a fictitious army, entertaining like this a big audience of spectators with these *games*, being a sort of an updated roman arena gladiator's spectacle.¹ This fact is not an isolated one. In the Spanish colonies from the XVth century onwards, *Plazas de Armas* have served, apart from a multitude of other political, religious and economic functions, to host diverse celebrations related for example to the times of the year in which harvesting was made.

The Parisian *Places Royales* of the 17th century that made as well part of the network of newly built public spaces, can testify of several events and celebrations related with the promotion of the crown and a political will for propitiating admiration towards the king as the main symbol of the state. Even if Parisian citizens back at the 18th century attended several celebrations at the streets and squares of the city, entertainment and recreation activities were however still reserved exclusively for the members of the royal family and the nobles that accompanied them.

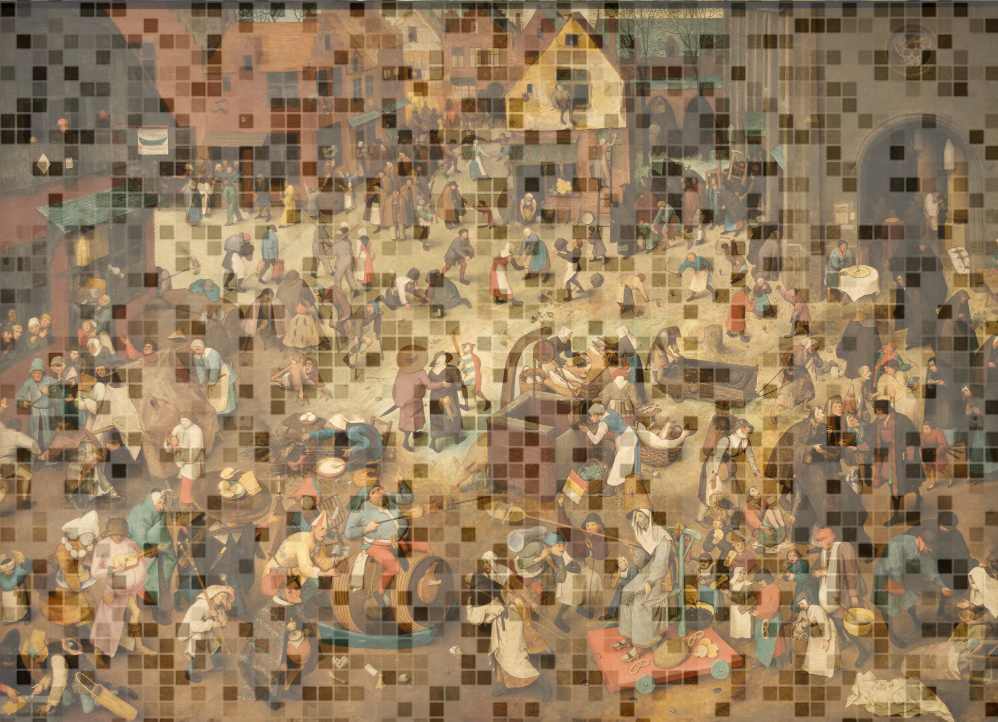
Partly due to the geographic strategic position of Venice, and to its history with commerce at the Adriatic sea - including traffic of slaves - many were the eventual visitors and travelers that passed by the city. A city that, even after 1638,

¹ See figure Chapter 1 Page 27.

Figure 1. Painting. Plaza Mayor. Madrid. Juan de la Corte 1623. / Figure 2. Painting. "L'ultimo giorno di Carnevale." Gabrielle Bella. 18th century. / Figure 3. "The Fight Between Carnival and Lent" Pieter Bruegel the Elder. 1559. / Figure 4. Painting. "Gioco delle ciotole nel Campo dei Gesuiti" Gabrielle Bella. 18th century. / Figure 5. Painting. "Ciarlatani in Piazzetta" Gabrielle Bella. 18th century. / Figure 6. Painting. "Caccia all'orso in Campo Sant'Angelo" Gabrielle Bella. 18th century.



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the date from which the government banned and sanctioned gambling, was still hosting the Republic's casino, *Il Ridotto*, offering the possibility to still play Hazard games. In fact, Venice was second to none as a city of entertainment, with hunting, open-air sports, boat races (regattas), and running contests attracting huge interest from aristocrats, merchants, and people in general. The city of Venice has been renowned along the 17th and 18th century because of being an intense and unusual cultural hub. Many have been the celebrations, rituals and religious festivals that have been hosted at the public squares of the city. Amongst these celebrations, lots of them being associated to religious events along the year, like the *Fèsta de la Sènsa* or *Festa del Redentore*, Venice Carnival is still nowadays filling at the end of February every *campo* of the city (square) into sort of open-air theaters. The numerous paintings that Gabrielle Bella did during the 18th century, represent rituals related with power and religion, but as well with everyday life festivals and moments of recreation. For example, his painting *L'ultimo giorno di Carnevale* represents a Saint Mark's square full with people celebrating the last day of Carnival. This one amongst many other paintings are visible at *Palazzo Querini Stampalia*, and feature pictures of public spaces under a specific use related with recreation time and the fact of diverting oneself away from the everyday reality, showing how these public places were perfect stages for celebrating such events.² Carnival in particular constituted a new step forward towards a more democratic use of the public space. In comparison with the other ceremonies, the celebration of Carnival has a popular origin and is the direct opposite of all other religious and governmental events organized and controlled by ruling forces. The 1559 painting *The Fight Between Carnival and Lent* by Dutch artist Pieter Bruegel the Elder already showed such a contrast between a popular and freer celebration like Carnival represented, in opposition to the aim of indoctrination of religion.

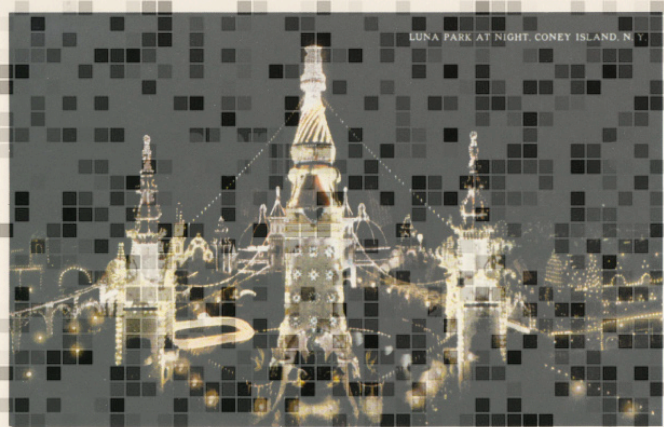
Recreational activities have always existed but, as seen, have been traditionally related with power and money. The massive practice of these activities by large collectivities is a fact that belongs to the modern world and is charged with political significance. During the 19th century, more and more people were joining the city forgetting a job. Subsequently, the necessity of recreation during the free hours of work affected a mass of workers.

In Europe, in the 1940's, and as the outcome of the 1933 fourth International Congress of Modern Architecture (CIAM), *The Athens Charter* enunciated Recreation as one out of the four sustaining functions of modern urbanism.³ In it,

² <https://www.querinistampalia.org/eng/museum.php>

³ Congress Internationaux d'Architecture moderne (CIAM), *La Charte d'Athenes or The Athens Charter*, 1933. Trans J. Tyrwhitt. Paris, France: The Library of the Graduate School of Design, Harvard University 1946.

Figures 7 & 10. Pictures. Luna park at day and night. Coney Island. New York. Ca 1910. / Figure 8. Aerial view. Expo 1970 Pavilions. Osaka. Japan. 1970. / Figure 9. Picture. Grona Lund. Stockholm. Sweeden. 2021. / Figure 11. Poster announcing the 13th Triennale of Milano. "Leisure." 1964. / Figure 12. Picture. Espo 1992. Sevilla. Spain. 1992.



Tredicesima Triennale di Milano

Tempo libero

Esposizione internazionale
delle arti decorative e
industriali moderne
e dell'architettura moderna

Palazzo dell'Arte al Parco
Milano

12 Giugno
27 Settembre 1964

Lecture

International exhibition
of modern decorative and
industrial arts and
of modern architecture

Palazzo dell'Arte al Parco
Milano

12 June
27 September 1964

Freizeitgestaltung

Internationale Ausstellung
für moderne dekorative
und angewandte Kunst
und moderne Architektur

Palazzo dell'Arte al Parco
Milano

12 Juni
27. September 1964

Loisir

Exposition internationale
des arts décoratifs
et industriels modernes et
de l'architecture contemporaine

Palazzo dell'Arte al Parco
Milano

12 Juin
27 Septembre 1964

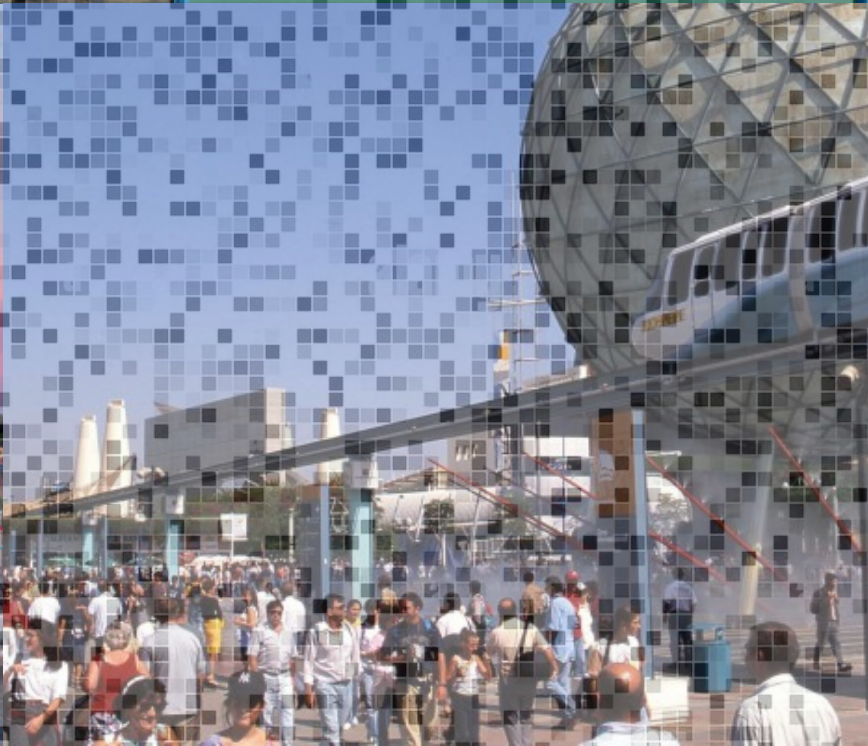
Reduzioni ferroviarie

Redwood railway fares

Fahrgastreismässigkeiten

Reductions sur les chemins de fer

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the available *free surfaces* for practicing sports or enjoying of green urban landscapes were generally considered as insufficient, mis allocated in the periphery of the city and not very usable for the mass of inhabitants. The text demanded that the *weekly free time should be spent in favorably prepared places: parks, forests, sports grounds, stadiums or beaches* that are close to the dwellings and well connected to them. The precarious situation towards recreation that was identified, got aggravated by the second world war social and physical destruction.

A decade after the publication of the charter and with a completely destroyed continent, CIAM members got reunited again at what was the eighth international congress of modern architecture. In *The Heart of the City: Towards the Humanization of Urban Life*, the destroyed old city centers were poetically yearned, without assuming that, prior to their destruction, they were already not able to offer enough to the population, remaining public grounds of other times, that needed to be updated.⁴

Contemporarily, Commercial Centers started being synthesized in north American regional cities, Victor Gruen being an important figure to whom can be attributed many examples of commercial centers from 1954 onwards, as well as theoretical works based upon the background of the 8th CIAM congress. Commercial Centers were kind of a success in the sense that they were able to propose new central places in which people could spend their spare time. However, Commercial Centers were completely at the service of capitalism and the proliferation of a consumption society that had to consume faster, since the mass production of goods was unstoppable. Commercial Centers then could be seen somehow here as a sort of poisoned apple since, instead of being made for spending people's spare time, what they were really intended for was essentially for people to spend their money.

It is in this context and based on the awareness of the consumerist society as a product of the system as well that Vittorio Gregotti and Umberto Eco curated the *Tredicesima Triennale di Milano* in 1964, the first exhibition ever devoted to *Leisure* and that reflected on the roles of leisure, consumption, and the relationship between free time and labor.

First, they were the central places in the city. With time, the essence of such spaces have been synthesized, or at least tried to, in order to inject it into some types of buildings and infrastructure. From the nineteenth century onwards it is possible to collect a list of examples of infrastructures and buildings for enjoying free time, like sport clubs, swimming pools or performance spaces. However, and particularly at the beginning, such places were restricting the access to a

4 Tyrwhitt, Jacqueline, *The Heart of the City : Towards the Humanisation of Urban Life : International Congresses for Modern Architecture = Congrès Internationaux d'Architecture Moderne CIAM 8*, Lund Humphries, London 1952.

wide community, becoming exclusive clubs where the access was only granted to a certain group of higher social class members, that had to contribute economically with a membership. Amusement parks have marked, thanks to the invention of electricity and the experimentation with several mechanical technologies, the start of a mass enjoyment of free-time by a wider collectivity. From the second half of the nineteenth century many were the advancements that contributed to recreation and entertainment, exporting the use of new technologies for it. Diversion facilities, like amusement parks for example, have been integrating the urban fabric of cities like Copenhagen or even Stockholm with its 1883 still opened *Grona Lund*. Even the structures and pavilions conceived and built for the world Expos like the one of Osaka in the Seventies, or the one in Sevilla in the Nineties, are inspirational and knowledge can be extracted on recreation-oriented artifacts.

This thesis wants to address, in parallel to every design tool and strategy, that in the present is more necessary than never to claim the right to increase our free time in order to enjoy it in a free manner. The fact of not only having the time to perform recreational and nonproductive activities but as well a proper space where to, is a political revolutionary action that can turn people's life better.

4.2

NUEVO CENTRO, A FERTILE VACANCY FOR THE CONTEMPORARY COLLECTIVITY

Within time, more and more have been the spaces in the city reserved to devote them to the collectivity as public urban grounds. However, and after having gone through traumatic experiences like the pandemic of COVID 19, they have shown themselves insufficient, especially if thinking in too congested cities that didn't count with enough available spaces for the recreation of people. Nevertheless, it is surprising and really paradoxical to find out that, it is as well in denser schemes of cities, that a big quantity of the spaces are vacant and underused, and that they could be reinterpreted and rendered accessible for the collectivity to enjoy them.

In 1999, Mesbla S.A, a Brazilian chain of department stores, declared its bankruptcy and in 2017, Paulo Mendes da Rocha's SESC - Serviço Social do Comércio - 24 de Maio opened its doors at its former headquarters, reconverting like this by the private initiative an abandoned department store into a socio-cultural center, making available education, health, culture and leisure for the population of Sao Paulo. Lina Bo Bardi's SESC Pompeia built during the eighties, was the precedent example featuring the potential of reconverting a former industry this time into collective facilities and grounds opened to the public.

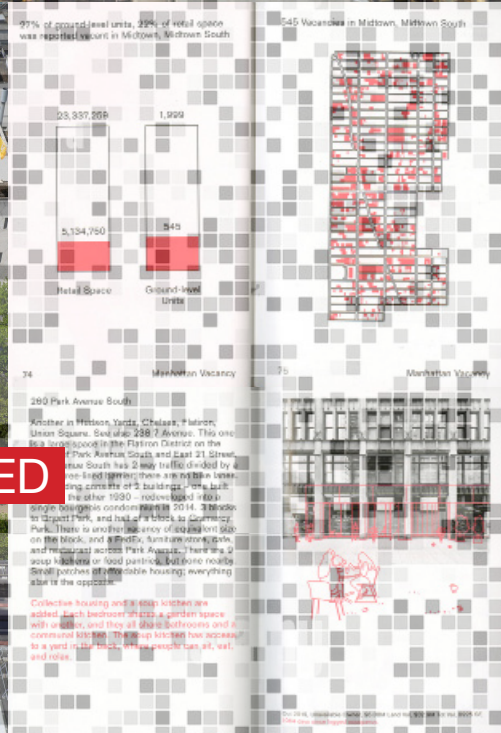
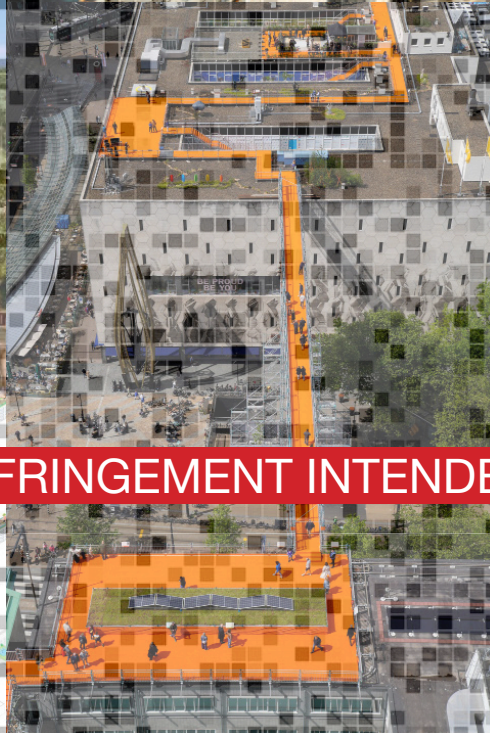
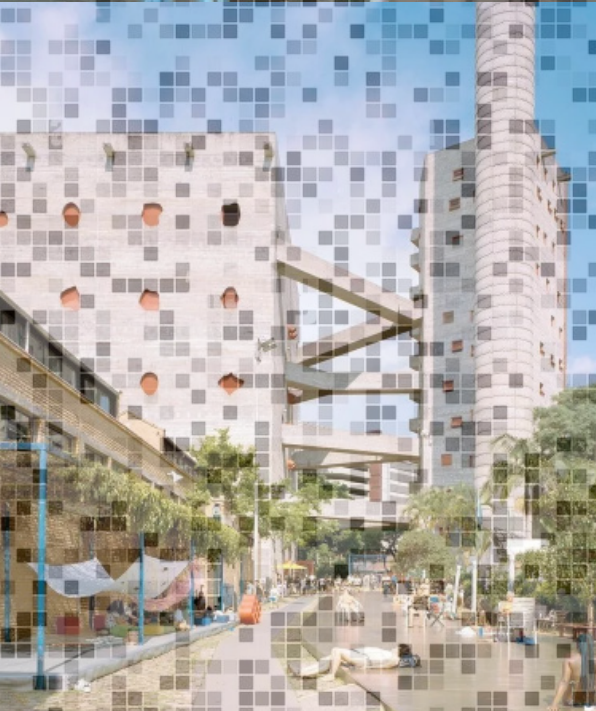
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Nowadays, just by analyzing empty spaces in the city, it becomes noticeable the big quantity of urban vacancies. What North- American architectural office MOS did in their publication *Vacant Spaces NY* was to show the big quantity of empty storefronts that they surveyed in their city.¹ The publication inventories these properties and comes up with possibilities for transforming these vacant spaces into housing or social services, imagining like this a better city.

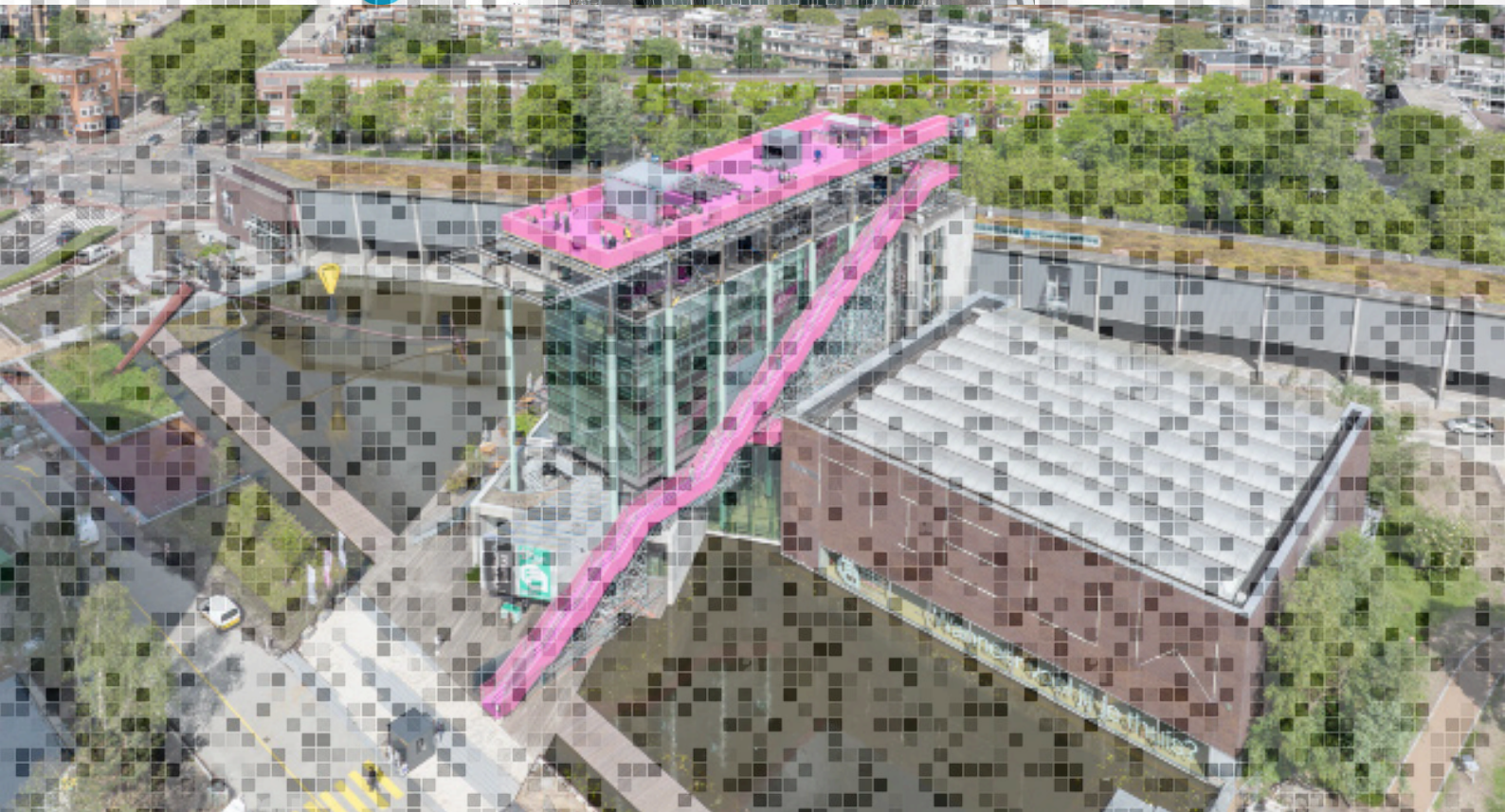
A less evident available resource that cities hide are probably empty flat roofs. After a calculation of potential available roof surfaces, the City of Rotterdam commissioned MVRDV architects to produce a catalog (2021) containing ideas on how to potentially use roofs as gardens, for storing water, but as well as events spaces, sports fields or a cemetery. The temporary structure the same office built in 2022 called *Rotterdam Rooftop walk* at the occasion of the Rotterdam Architecture Month and the Rooftop festival, was an installation offered a new perspective on the city *increasing the awareness of the potential of roofs, which can become a second layer that makes the city more livable, biodiverse, sustainable and healthy* they said.

¹ Meredith, Michael; Sample, Hilary; MOS, *Vacant Spaces NY*, Actar D, New York 2021.

Figure 13. Picture. Former "Mesbla" store. Sao Paulo. 1990s. / Figure 14. Picture. SESC Pompéia. Lina Bo Bardi. Sao Paulo. 1982. / Figure 15. Front Cover. Rooftop Catalogue. MVRDV. 2021. / Figure 16. Picture. "The Podium." MVRDV. Rotterdam. 2022. / Figure 17. Picture. SESC 24 de Maio. Paulo Mendes da Rocha. Sao Paulo. 2017. / Figure 18. Picture. "Rotterdam Rooftop Walk." MVRDV. Rotterdam. 2022. / Figure 19 & 20. Book extracts. "Vacant Spaces NY." MOS Architects. 2021.



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A related work with such matter is the project of the collective Fosbury Architecture for the Italian pavilion at this year 2023 Biennale di Venezia. Entitled *Post Disaster Rooftops EP04*, is the fourth chapter of a project that interprets rooftops as non-conventional urban spaces between the public and private realm, freed from the *hegemonic forms of control*, as they consider, feature that reinforces the ambition of this thesis wanting to deliver design tools for creating truly democratic public places.²

All these vacant structures re-converted into public grounds for the collective enjoyment of free time constitute a rich background for what it is going to be visually enunciated in this research through a specific design project. The re-discovering of *Nuevo Centro* proposes to render accessible a big unused existing properly delimited place into a new Urban Slab for the collectivity.

Nuevo Centro in Valencia has been functioning from its opening in 1982 as a fertile ground to host temporary fairground rides at its open plaza, temporary exhibitions, hosting children games competitions or chess tournaments for instance, featuring activities of recreation and diversion, and not only the act of shopping in a mall. Furthermore, the directive committee of the center has always know how to make use of Valencian people's cultural background, promoting and hosting many times activities and events related with the major annual celebration of Valencia, *las Fallas*. Even if privately owned, the commercial center has become a space for the collectivity that, previous to the apparition of the information technologies and social networks, was actively functioning as a gathering space in the city: a commercial but as well social center somehow. Many remember a glass *Keops Pyramid* standing in the middle of the main square, an iconic music store that has brought global music closer to young Valencians who had just come out of a dictatorship that cut ties with the outside international world. Defining it as having been a sort of former Tinder for thousands of Valencians, the contemporary local press reports as well in its articles on the decadence emanating from the fact that this commercial center is aging.³

More in particular, The roof top of *Nuevo Centro* is one out of the three levels fully dedicated for parking garage with which the commercial center counts. Due to an oversized calculation of the amount of visitors that would reach the commercial center by car, the last floor of *Nuevo Centro* is nowadays barely used by anyone, leaving like this a full level of twenty thousand squared meters completely available as an existing resource in terms of space in the city that, because of structurally dimensioned for hosting more than eight hundred cars, could be imagined as usable for certain masses of people or diverse activities, including the celebration of events and temporary activities. The rooftop of this commercial center is a very specifically delimited space since it is clearly raised from the level

² <https://modulo.net/it/post/biennale-architettura-2023-post-disaster-rooftops-ep04>

³ Molins, Vicent, *Humans of Nuevo Centro: Oda al icono de una generación que envejece*, Valencia Plaza, 8th June 2019. <https://valenciaplaza.com/humans-of-nuevo-centro-oda-al-icono-de-una-generacion-que-envejece>

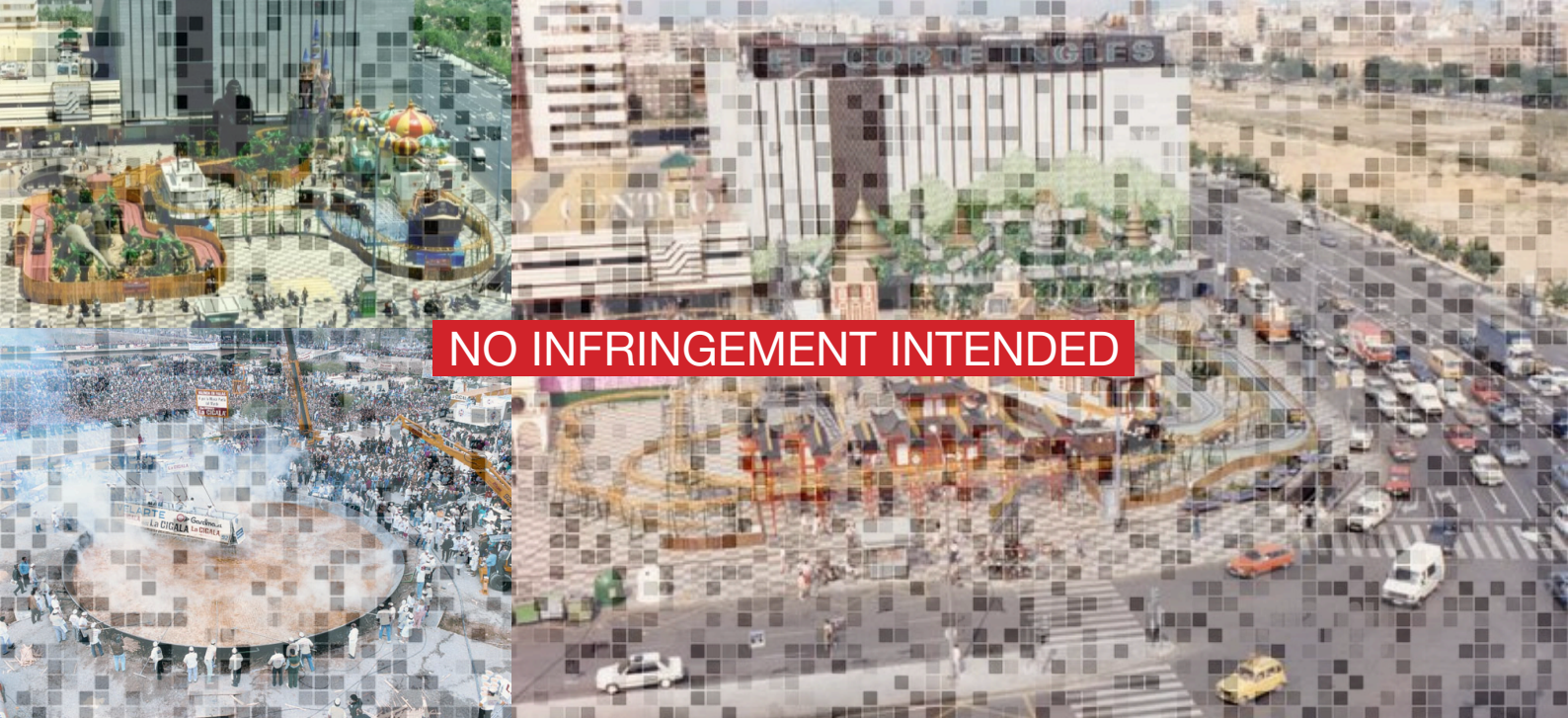
of the city by seven meters and constitutes a potential Urban Slab defined by clear borders and able to be appropriated by the collectivity.

The level of the roof top of *Nuevo Centro* has to be transformed from a temporary storage of cars into a container of new fragments of life with collective significance, rendering it accessible for the enjoyment of people. This is the first step towards an initiative which results into the appropriation of a new urban existing but unused places for the collectivity.

What it is proposed in here is to connect the ground floor of the city and the level of the adjacent old rived bed directly with the roof top floor through an ensemble of specific devices located at strategic places. Such devices are issued from the collection of study cases and examples that the thesis collects which are large access ramps, vertical connecting elements like terraced gardens or climbing walls using the facade, an aerial connection via a flying bridge or the reuse of existing helicoidal ramps.

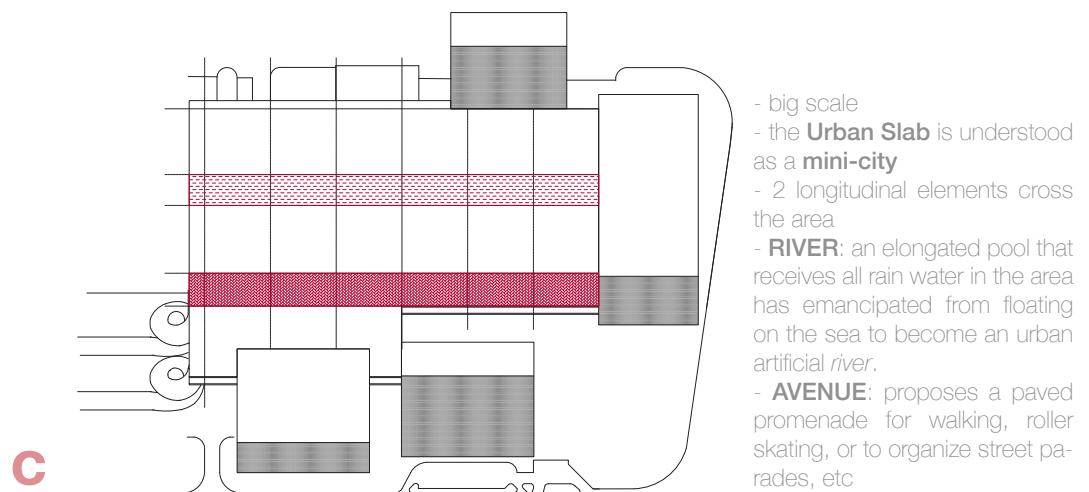
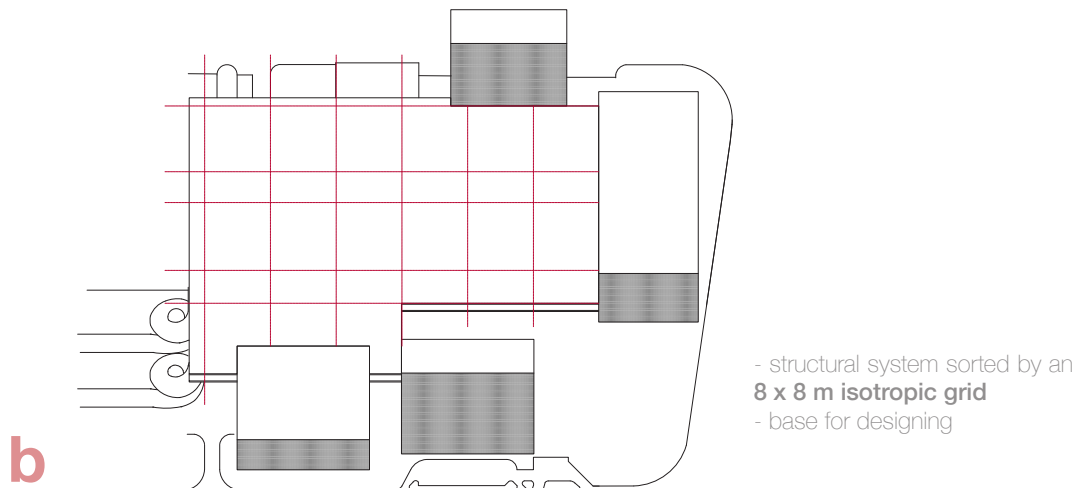
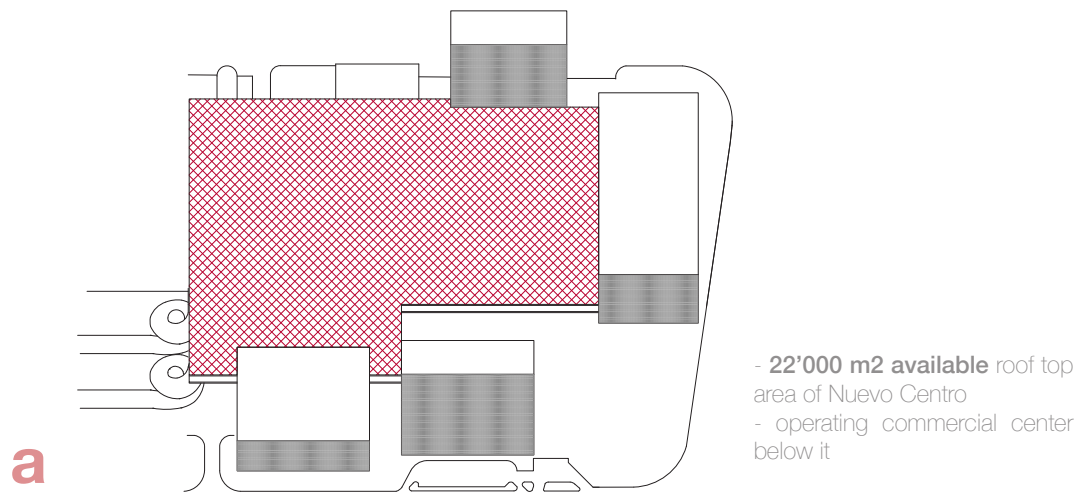
In a second phase, once the existing discontinuities between the new ground and the city have been erased, a way in which the roof top of *Nuevo Centro* could be acknowledged, surveyed and appropriated as a virgin ground for an urban collectivity is proposed through the intuitively use of the same isotropic grid employed to distribute the columns that hold the horizontal planes below. The newly rendered accessible ground could host an ensemble of sport courts, temporary and permanent structures, hemicycles for performances or assemblies, imaginative displays and any other artifacts, devices or installations, conceived to practice communal activities, exercise, learn, play and to simply experience diversion. This new ground for the collectivity is as well showing interest about environmental sustainability, allowing for onsite electricity production through solar panels that bring shadow to the users, and windmills, or orchestrating the collection of rain water and storing it in a pool/river located inside the thickness of this Urban Slab and that can be enjoyed by the visitors as well. Furthermore, and because of its socially engaged character, its conception is made with the wish of working towards the suppression of inequalities in our society. The re-design of this place proposes itself as well as a welcoming frame for any sorts of sport courts others than the hegemonic football ones, like volleyball or *petanque*, swings and rides not just for children, multipurpose areas to host any social or festive activity, as well as the typical Valencian ones such as fireworks shows called *mascletàs*. Optimal lighting conditions, also during nighttime hours, and proper shadow during the day. a hilly topography in more playful moments, shifting sands, a flying bike lane, and any imaginative displays one could not even think of.

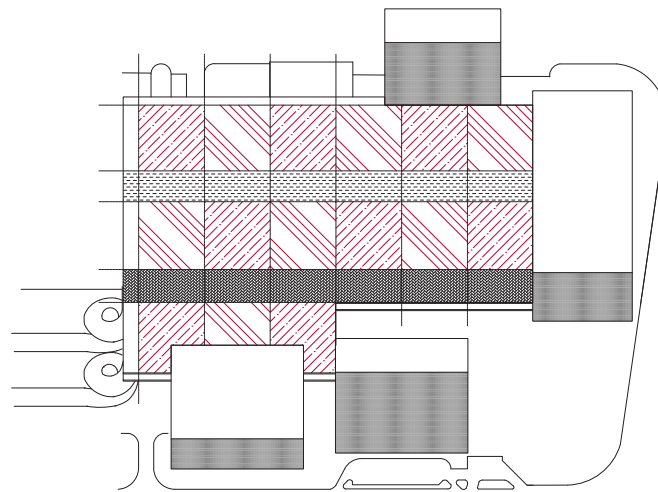
Differing from the previously cited examples of the Sao Paulo SESC's, the intervention in *Nuevo Centro* does not intend to substitute the ongoing commercial activity at all but to densify the use of this existing structure for being able to offer a vacant and unused valuable place to the collectivity first of all, with the big positive effects that this will bring for everyone. The private businesses carrying out



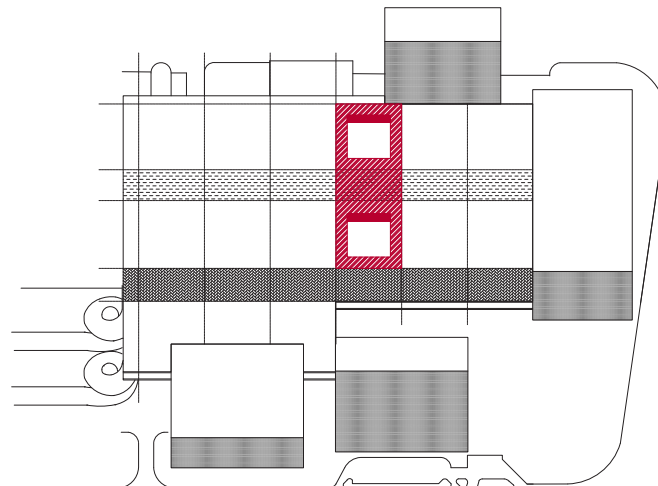
its activity on the site will only benefit positively from this initiative. Furthermore, an answer to the problematic of spaces that will cease to be used over time like parts of the parking garage of the floor below, is given. The whole below-slab world of this newly re-discovered Urban Slab will absorb all the needs related with more logistic activities and functions that need to be roofed somehow, like public toilets, storage, but not only of course. An availability of places below-slab is devoted to activities that would be undertaken below a roof, like a network of workshops for artists and artisans, or for practicing indoor sports in a roofed condition but that benefit from the natural light brought by the facade. The subsequent layers below the roof are then properly reactivated through the specific design operations as well, that will prepare the places properly to be injected with more activities, becoming below-slab scenarios for the public life. Making available this Urban Slab to the collectivity, that can be physically and politically modeled by citizenship as well, becomes an urban, political and social spatial initiative of reference, thus converting an apparent roof into a complex multilevel articulated Urban Slab, proposing to an alternative civic and political collectivity to inhabit it. A new place for a urban collectivity where all these relationships can crystallize around a recreational and collective enjoyment of free time.

Figure 21, 22 & 23. Diverse events taking place on the public square of Nuevo Centro and at the old river bed. 1990s.

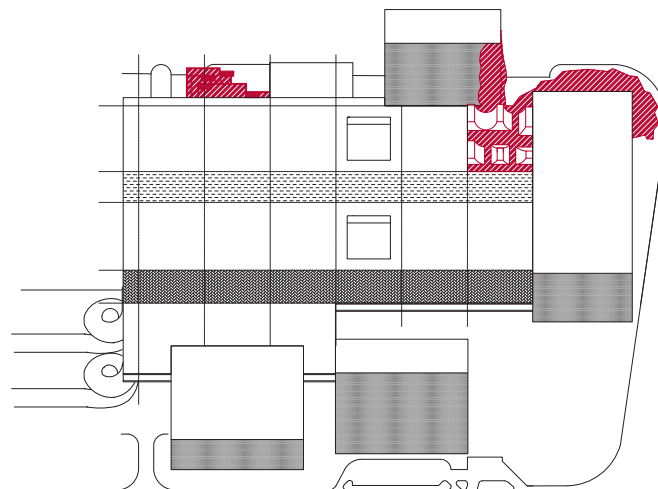




- **15** squared different **zones** of 1'000 m² (32 x 32 m)
 - programmed for different functions

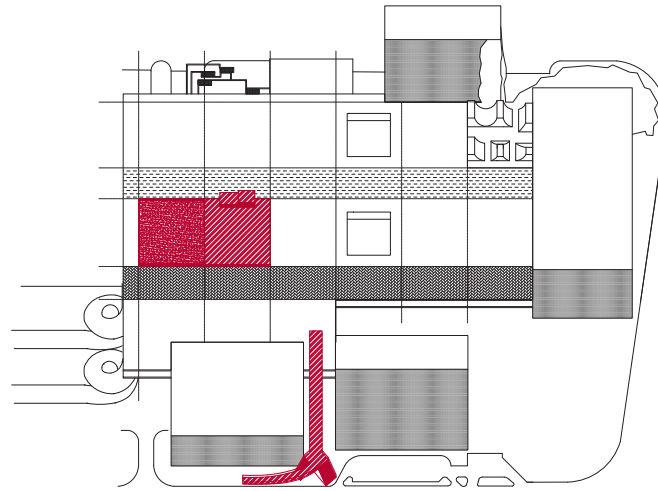


DIG / a connection between the subsequent layer below-slab and the roof top level is planned



SHAPE / connection with the city on the shoutheastern corner. a **climbing wall** going all the way up from the ground floor of the city
 - Some **hanging gardens** propose a more urban connection at the north-east

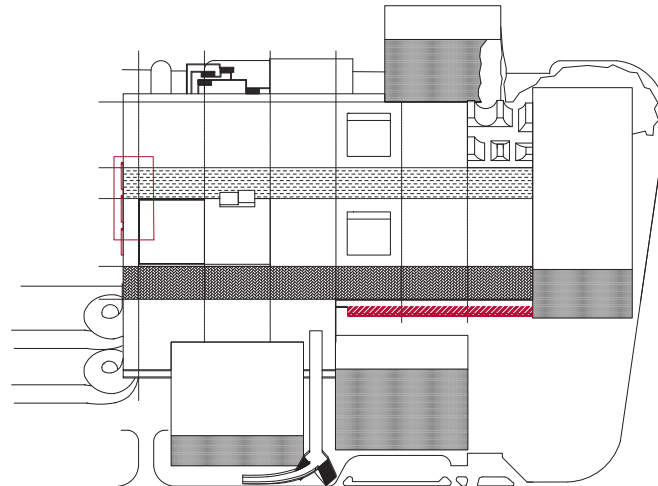
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RISE / a wooden deck next to an enormous sandbox incarnate the **podium-like moment** of the project. Used for even installing some diving boards, it becomes a **delimited scenario** inside of the scenario that this Urban Slab becomes.

- A **rised podium with steps** and a gateway make a direct access on the north-west side of the project

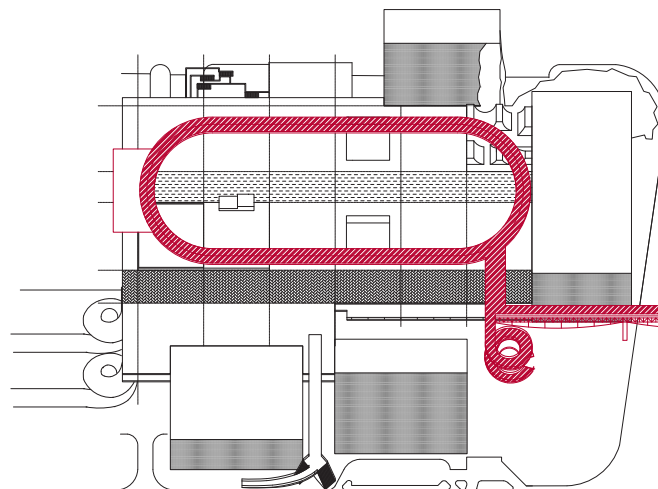
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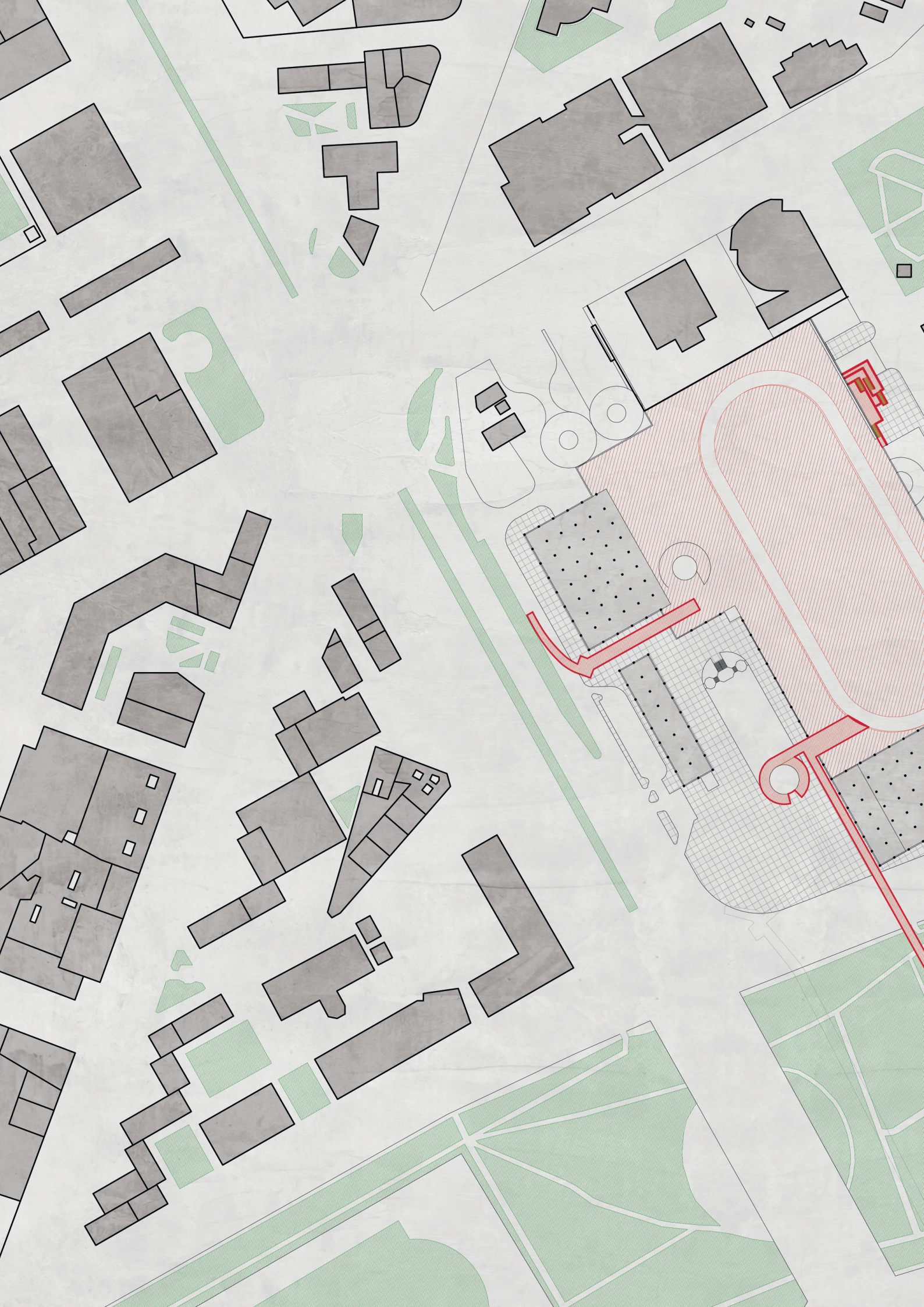
OVERHANG / at the below-slab layer, the **ground is extended** offering a semi-covered public plaza analogous to the Gaudi Market in Park Guell.

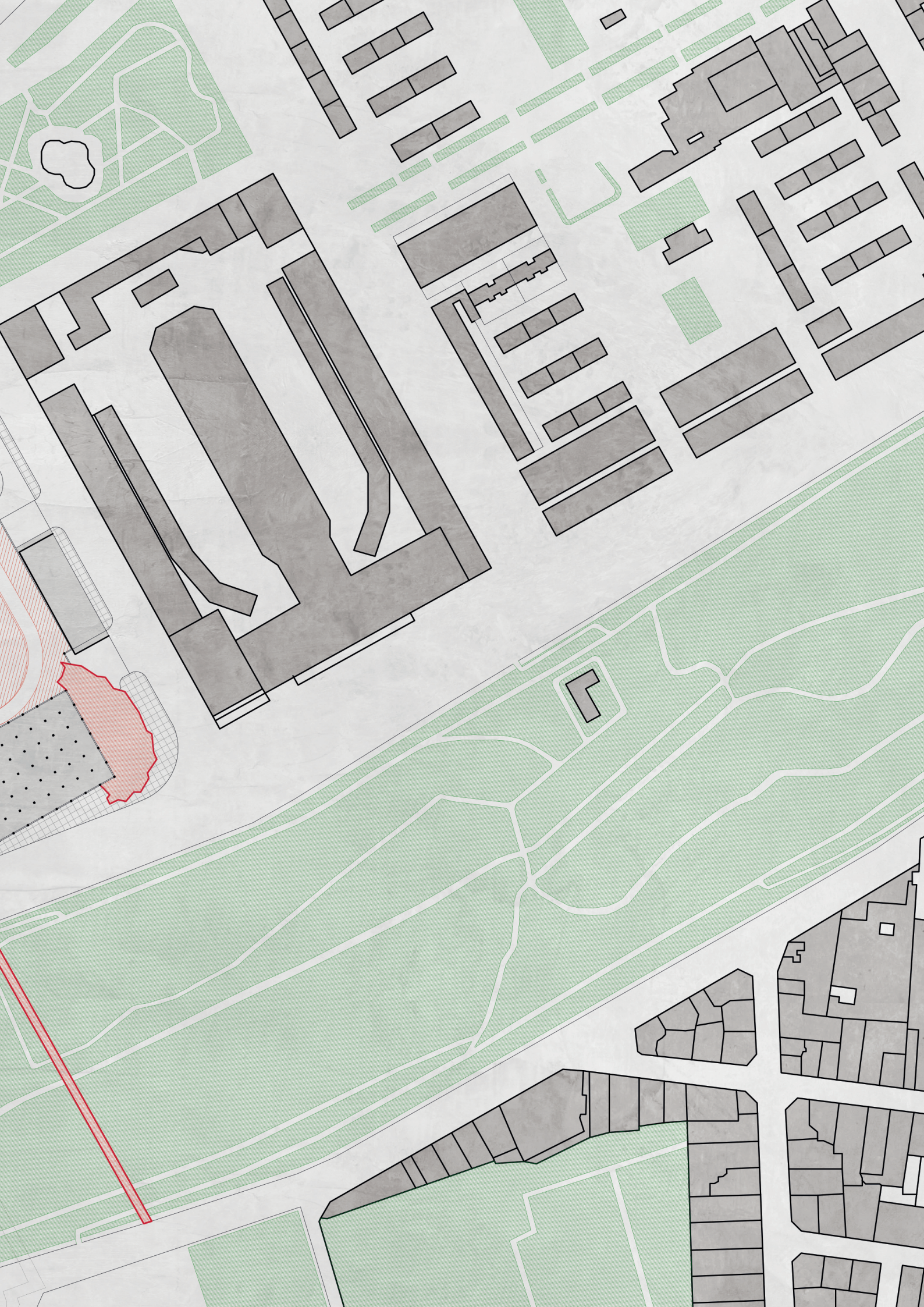
- On the northern edge of the site, a **hanging bike parking** is suspended above the roof top thanks to an ensemble of metal umbrellas that generate a structure on which to install extra spaces

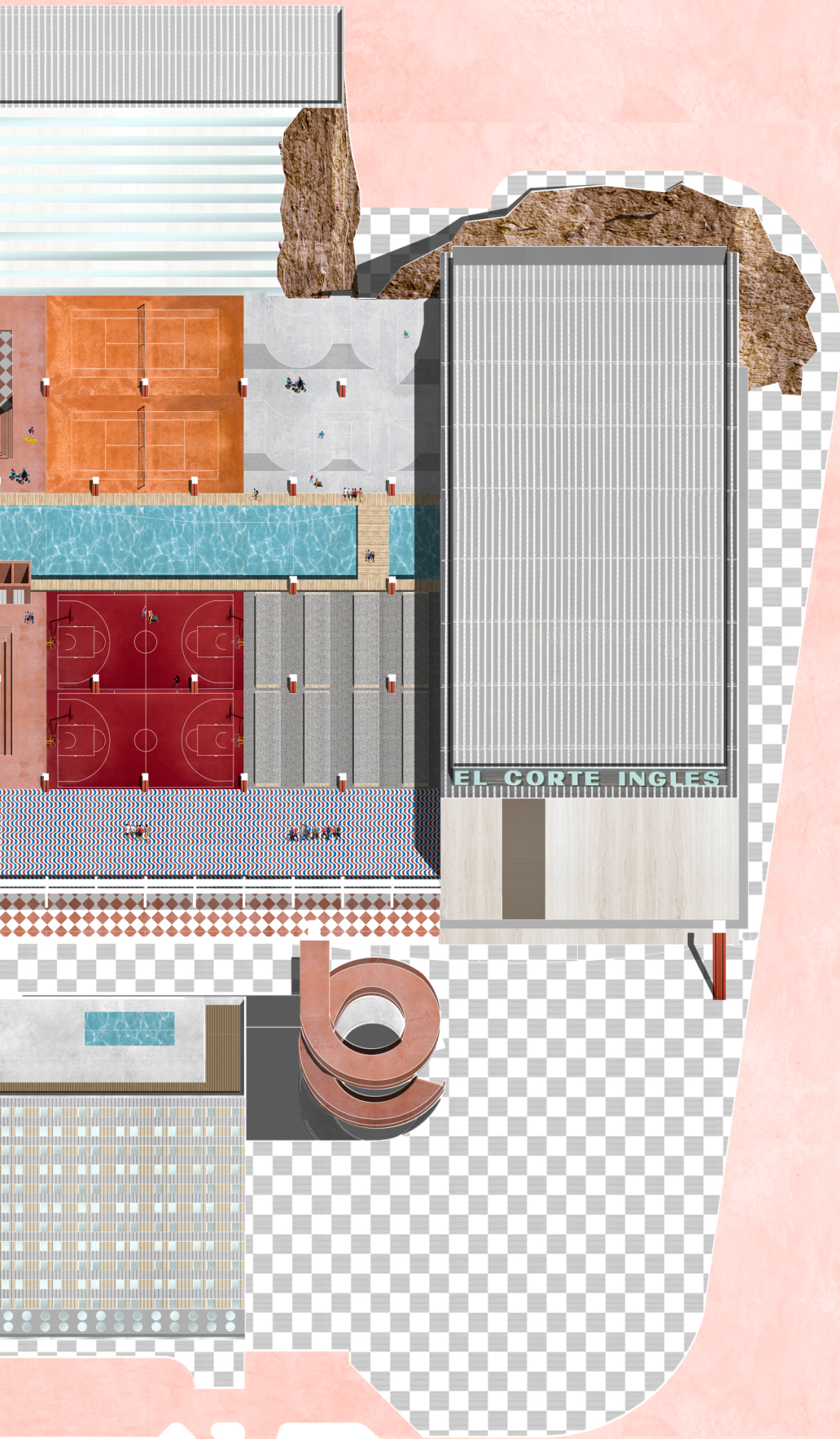
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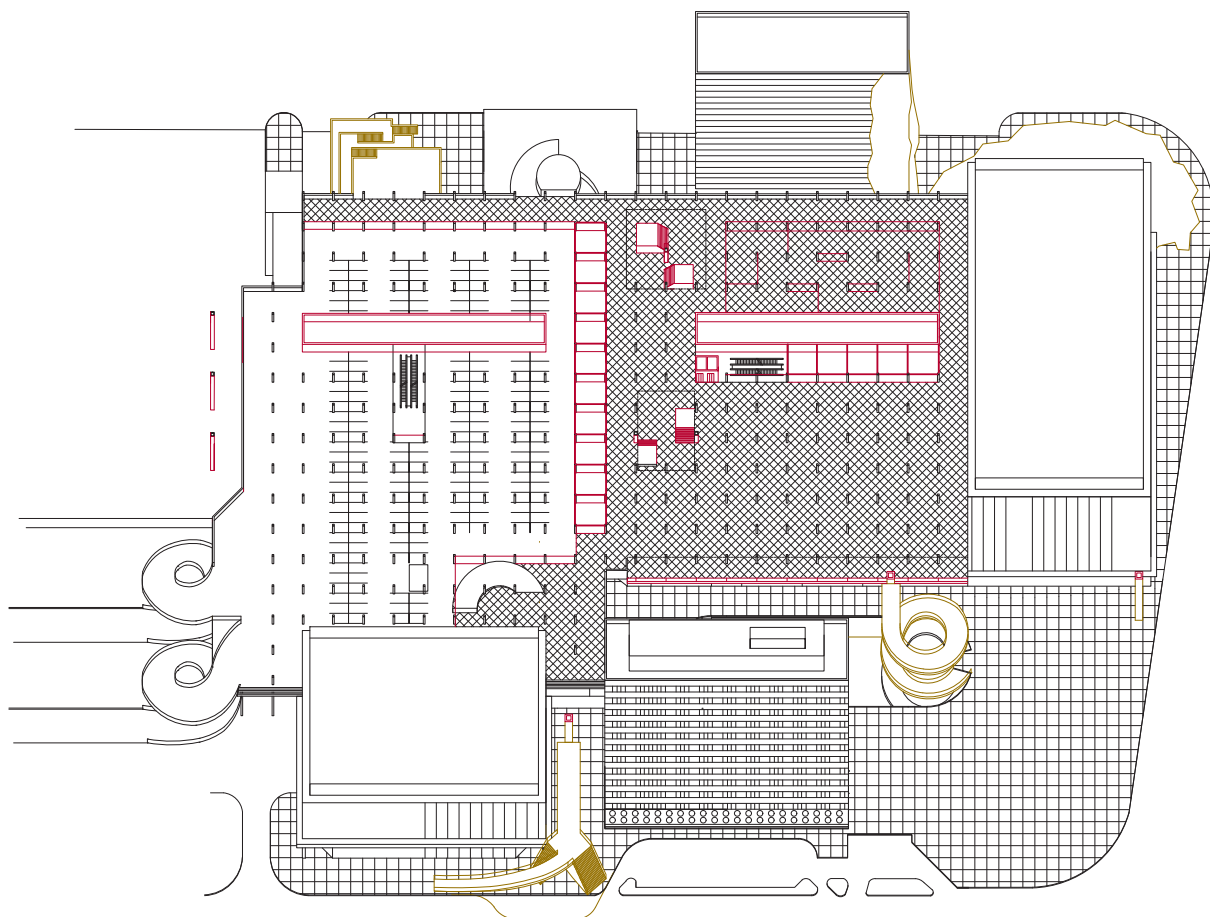


SUPERIMPOSE / a system of metallic umbrellas cover the roof top to offer some shadow since Valencian climatology requires it. On one side, these umbrellas, apart from offering shadow, collect the rain water and store it in the *river*. On the other side they serve as structure to **suspend an elliptical bike lane** on top of them, accessible directly from the river park tangential to Nuevo Centro though a **flying bridge** and counting with some extra space to park the bikes.





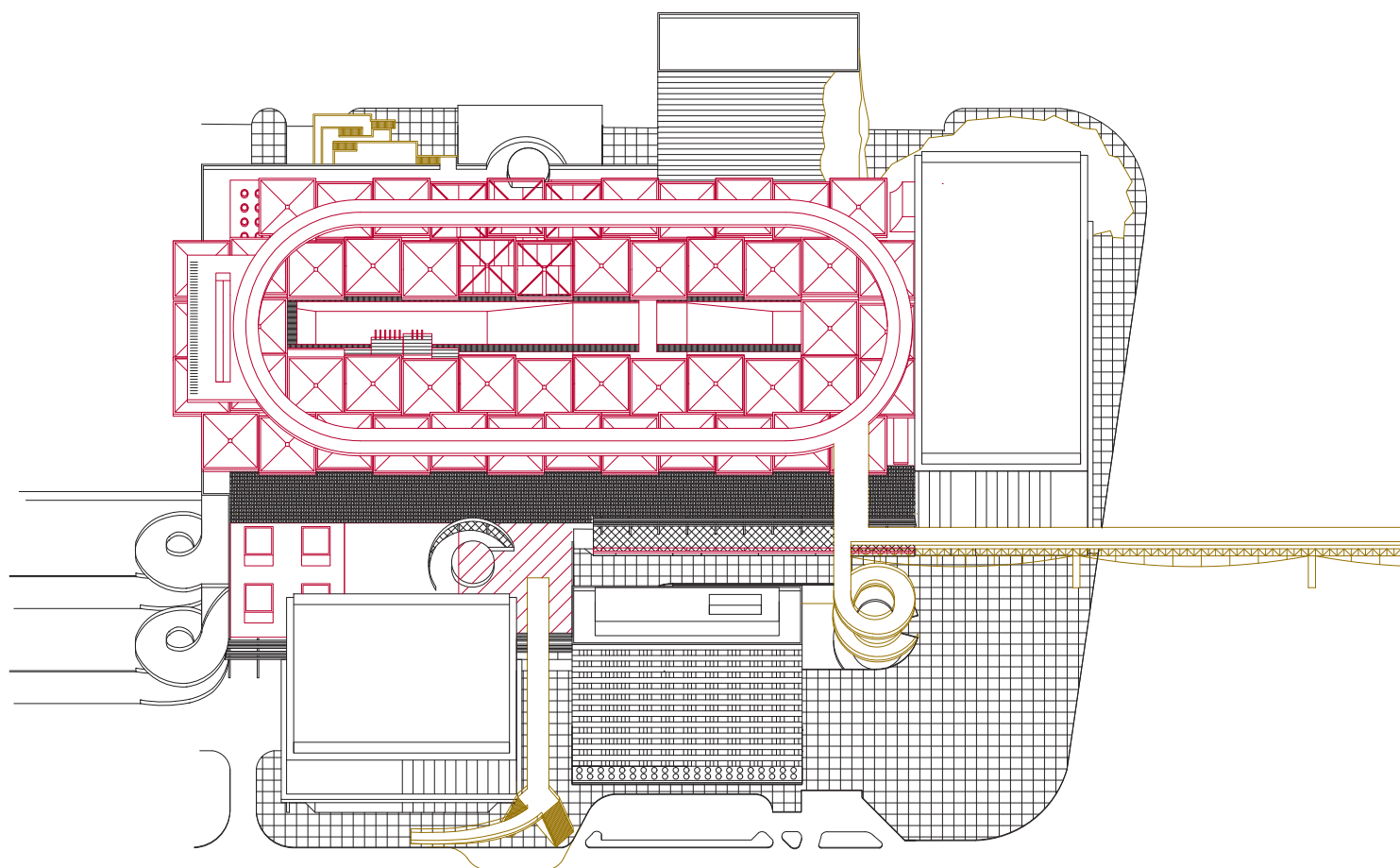




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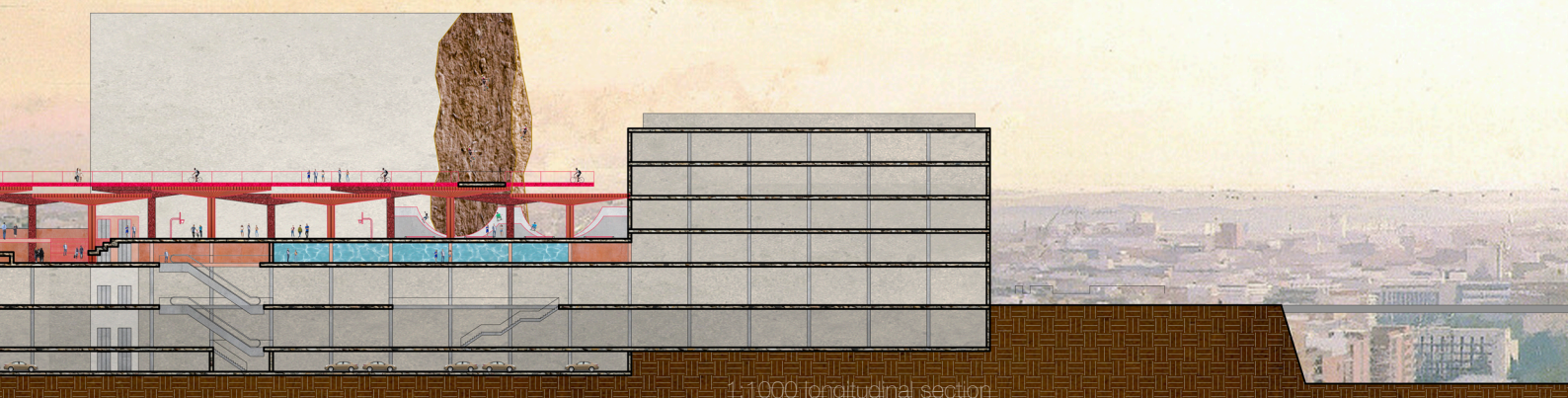
below-slab spaces





roof

214



1:1000 longitudinal section



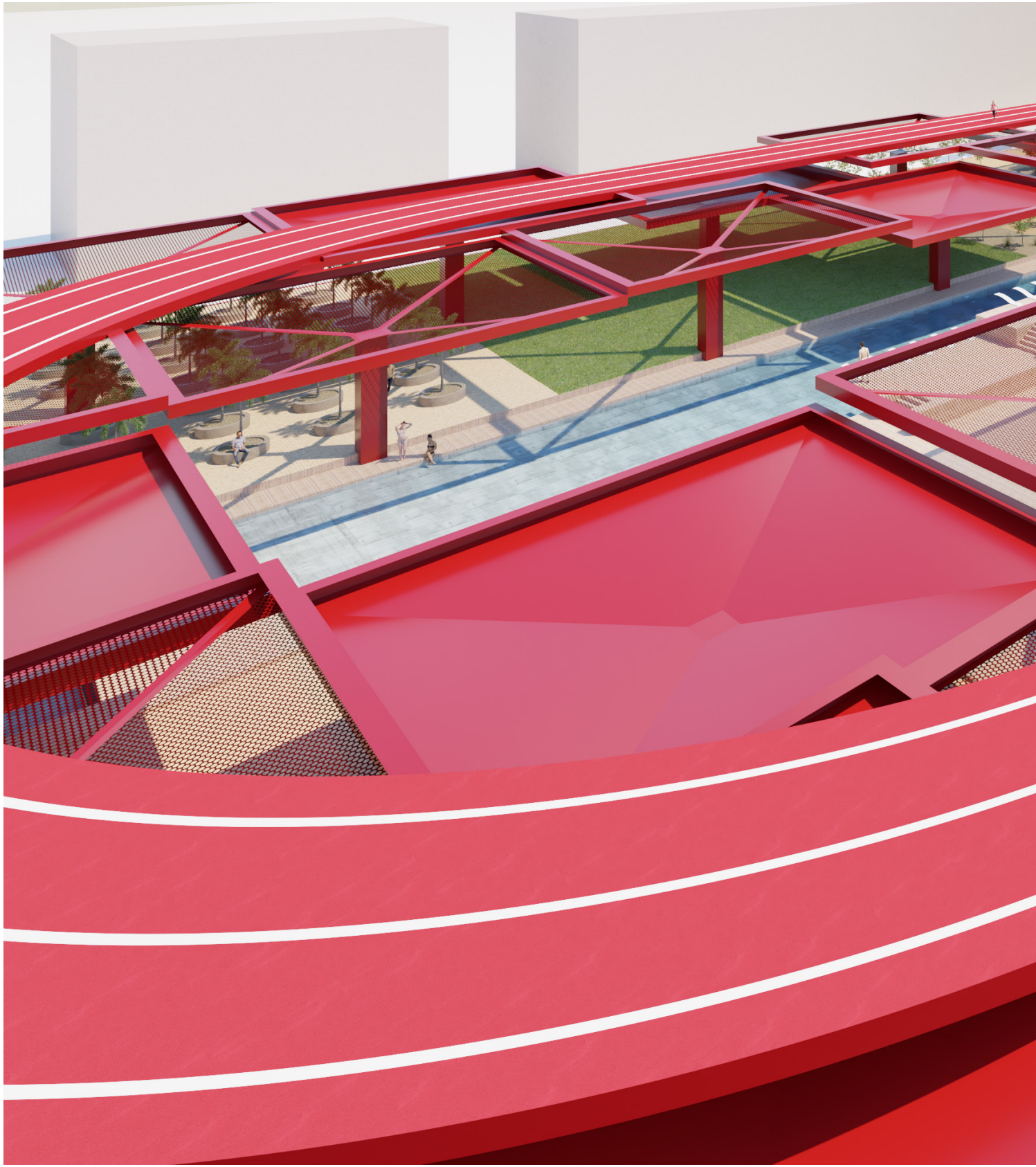






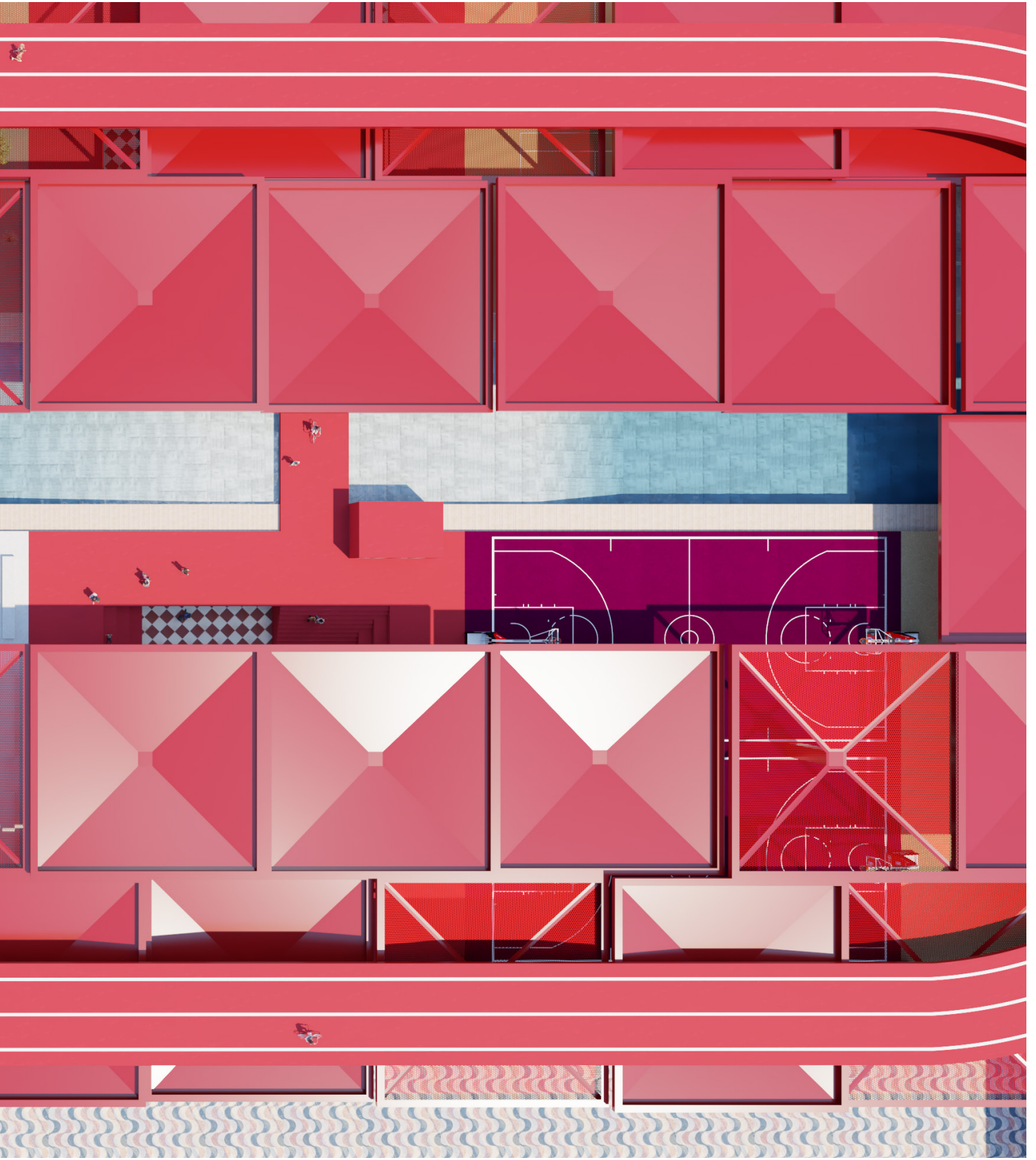












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