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# Geography, Infrastructure and Architecture: From the Immaterial Scenes of the Arts to the Physical Space of the American City

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*The aim of this paper is to propose a design answer to the United States issue of public space through the use of art, using the city of Dallas as an example. A pragmatic way to interpret space is the grid. The first analysis are aimed toward one of the most ancient systems of formulating "urban" conglomerates, the roman grid. In the USA, it is the Continental Congress's Land Ordinance of 1785 to prescribe the usage of the Continental grid. Ideally the two grids have the same role, the significant difference is their scale.*
*This grid can only be compared to a colossal scale, here space is subordinated to time. This mutation is in line with the urban development processes of the city of Dallas. This is why, the University Crossing Trail Public Improvement Distric, along with the Southern Methodist University of Dallas, have developed a collaboration to promote and regenerate an old trail of the city into an art corridor. Even if not constructed using the Jeffersonian grid, the apparent orderliness of its blocks accentuates the complete supremacy of circulation, while the shapes and turns of the infrastructure collaborate to a new idea of beauty within the landscape of the city. The proposed solution is to intervene with three different urban art projects that have been placed along the main and different types of infrastructures of the city. The intention is to invert the subordination of space that returns protagonist where the urban art projects have been inserted, without ever negating the principal condition of circulation and speed. Because this apparent contradiction requires a specific and cautious sensitivity, it is the responsibility of art and architecture to mediate between audacious locations, functional solutions and the world of visual representation.*

## Introduction

*What is today's relationship between architecture and space?*

In order to answer this question, it is necessary to navigate through different disciplinary fields, starting with geography, infrastructure and landscape, and analyze some elements that put them in relation to one another.

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## Geography, Places and Space

It seems indispensable in today's world to choose the geographical dimension as a starting point, in order to achieve a sufficiently enlarged view, able to decipher those complex processes that define our world.

In the classical culture, the earth was called *Gé or Gaia*, and was considered as a cape, a shell.[1] Progressively, humanity has reached the ability to intervene over this surface. So much as to define a new geological era, Anthropocene, understood as the period where the biggest territorial modifications of the planet, structural and climatic, are produced by mankind.[2]

In order to rationalize the complexity of this surface, over time, two models of interpretation have been defined, from the point of view of geography: place and space.

Places are the models of Aristotle and Marco Polo. The voyage of the Venetian merchant to the east, along the silk route, is a sequence of places, specificities, languages, cultures, of irreductible fragments that cannot be exchanged with each other.

The medieval journey of Marco Polo uses the winds and not the cardinal points as means of orientation and the passing of places is expressed based on the duration, in days of rest or of walk.

The world of Marco Polo is that of things, of the physical reality that is not reduced to symbols or abstract elements.

Space, on the other hand, is a concept already known at the time of Herodotus, later geometrically defined by Ptolemy that finds direct and full application only by the voyage of Christopher Columbus to the west in 1492.

Starting from the 1400's the perception of the world changes, just like the models used to represent it, thus modernity begins.

The space needed to describe this new condition is by definition continuous, homogeneous, isotropic. Space is the reduction of the world to a standard, an identical interval that is always valid and independent from the context.

It is no longer a sum of fragments, like in the medieval ages, it's the world of processes and realizations, determined through linear, metric and time measurements, calculated by speed.[3]

## Infrastructure and Architecture

The American continent, the new world, becomes the new privileged experimenting field of this ideal.

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1. Franco Farinelli, *L' invenzione della Terra* (Palermo: Sellerio Editore, 2007).

2. Maurizio Carta, *Re-cyclical Urbanism. Visioni. paradigmi e progetti per la metamorfosi circolare* (Trento: Listlab, 2016).

3. Farinelli, *L' invenzione della Terra,* 2007.

Some experimentations include the Spanish-American urban grid in South America, officially codified by King Philip II in 1573, as well as the one mile per side Jeffersonian grid of 1784. These grids are a combination of gridded city prototypes that incorporate indigenous city planning, along with European urban developments, the roman *Centuria* developed in the Italian peninsula, the French *Bastide*, and Spanish military encampments. The new grids then, become the physical construction, on the continental scale, of these models.

Shortly after the first East coast colonies settled in North America, the need to expand West became more evident. The principles destined to characterize the occupation of the extensive scale of the American territory needed to be easy and rational. This birthed a "pure planning thought",[4] able to meticulously design the territory of which not much was known and that was not their property. This expansion of the country would not come across any limitations or frontiers for a long time, giving the illusion that it could go on forever, giving an *a priori* order to the entire surface of the country.

In fact, not knowing what the colonization scheme would be applied to, the planners acted as if they were dealing with a *tabula rasa*, the "project-space" is simply stratified over the "substrate-space". These ordinances did not argument, they disposed. In other terms, one could define the territory as *reading* when its structure comes directly from the environment and as *writing* when the structure imposes itself without prior analysis that is applied to a territory that is abstract but not absent.[5]

Frank Lloyd Wright, after the Great Depression of '29, will use the same regulatory principle to define Broadacre City.[6] A polemically anti-urban model of space, that by utilizing the modern technologic innovations of the time, wants to eliminate a typical exemplification of place, the big city, no longer considered modern.

In Wright's world, based on a grid of 3.2 km per side, a minimal standard unit is assigned to every family, an American acre of territory to farm and over which to build a house.

Later, in 1941, Sigfried Giedion, as a conclusion to his book *Space, Time and Architecture*,[7] will celebrate the American parkways underlining their character, as anticipation of the contemporary city, and for their unlimited freedom of movement.

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4. André Corboz, "Un Caso Limite: La Griglia Territoriale Americana o La Negazione Dello Spazio-Substrato," in *Ordine Sparso. Saggi Sull'arte, Il Metodo, La Città e Il Territorio* (Milano: Franco Angeli, 1998), 239-24.

5. Ibid.

6. Frank Lloyd Wright, *The Disappearing City* (New York: William Farquhar Payson, 1932).

7. Sigfried Giedion, *Space, Time and Architecture: The Growth of a New Tradition* (Cambridge, Mass: Harvard University Press, 1941).

The sentiment of space-time that characterizes contemporaneity, according to Giedion, can only manifest and perceive itself through movement.

The parkway is an estranged element from the massive body of the city that Wright wanted to get rid of. This is because of its different scale; it is designed in terms of the surrounding environment and becomes part of nature itself.

Kevin Lynch in 1964 in *The View from the Road*[8] will determine the criteria to analyze and design the motorway infrastructure and its relationship with architecture and the surrounding context.

The question of perception, in the new speed-landscape experienced through the automobile, plays a central role. Lynch introduces innovative concepts like the idea of the highway-landscape and applies perception principles of analysis and design, working on the significance of movement and space, like depth of field, orientation, and rhythm. However, the interest of his professional endeavors are strictly limited to urban design, so much so that in the preface he specifically addresses traffic engineers.

In the 1970's, infrastructure has merged with the context and the architectural design scale starts to create new relationships with it.

In *Learning from Las Vegas*,[9] Robert Venturi, through comparative diagrams, photographic abacuses and storyboards, investigates and puts architecture and public space on the same side, in order to apply the same phenomenon of perception in relation to speed and means of transportation, through the study of graphics and billboards of the Las Vegas Strip.[10]

At the same time, SITE (Sculpture in the Environment) of James Wines also starts developing experimentations, and revolutionizes the parking lot, one of the main typological inventions of the twentieth century. SITE's projects begin with a reflection over nature elaborating a form as environmental art.[11]

## Architecture and Landscape

The idea of the American landscape, historically, has always excluded architecture, as Thomas Jefferson compared cities to "sores on a body", mainly because the American city of the time was inherited from England. Because of the physiocratic doctrine in which Jefferson belied in that sees the city inhabitants as corrupt, and that the farmers as virtuous by definition, the territorial grid becomes a sort of guarantee of justice and stability and it will determine the

8. Kevin Lynch, Donald Appleyard, and John R. Myer, *The View From the Road* (Cambridge, Mass: MIT Press, 1964).

9. Robert Venturi, Denice Scott Brown, and Steven Izenour, *Learning from Las Vegas* (Cambridge, Mass: MIT Press, 1977).

10. Thomas Bisiani, "Da New H(e)Aven a Peepland Passando per Sin City," in *The Shopping Center as/Is a Meeting Place* (2020).

11. Adriano Venudo, "Not Seen and/or Less Seen of ... e Non Fu Più Solo Un Parcheggio," in *The Shopping Center as/Is a Meeting Place* (2020).

future social practices.[12] This approach also derives from the idea of the landscape garden, from the puritan and transcendentalist cultures on the ideals of liberty held within large spaces.[13]

According to Pollak, in American culture, architecture was always intended as a disturbing element of landscape, a cultural resistance that inhibits the design of urban public spaces. This resistance can, however, be overcome by concentrating on three design aspects.

The construction of a new relationship between architecture and landscape can be founded on the reinvention of the border as a place, where it is possible to enhance differences and not focus on the aspect of restriction or limitation of space and view.

The strategic overlap, on different scales, of infrastructure, circulation, social equipment, vegetation and topographies produces and supports a complexity of urban and landscape relations.

In the urban environment, the fragment is able to give name and form to nature and architecture, not governed by geometric criteria, nor by naturalism, but with the capacity to become part of the urban space (nowadays always fragmented).

In order to complete this introductive picture, and speak on more general terms, it is necessary to cite one significant development, pertinent in relation to the bond between space, architecture and landscape with the void.

In 1967, in America, Michael Heizer designs an excavation of more than half a kilometer, fifteen meters deep and ten meters wide, with the movement of more than sixty thousand tons of dirt. This work opens the season for Land Art.

The title is *Double Negative* and is made up of two gashes on the ground, facing each other along the Mormon Mesa, a desert valley in Nevada.

A new act of insertion is introduced in the landscape, not through addition, but through subtraction.

*Double Negative* makes an object that does not exist apparent. In order to create this work, material has not been amassed but removed, nothing is there and yet, it is a sculpture.[14]

Through this removal operation and the repositioning of soil, the landscape becomes defined by an excavation. Michael Heizer not only definitively promotes the importance of the terrestrial surface as a support and as a medium, but through the physical manipulation of a void defines the outline of an image.

The game of subject and background staged by *Double Negative* is at the edge between an artistic operation and an architectural project: the action conducted by Michael Heizer allows the void to become practicable (apparent/physical).

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12. Corboz, "Un Caso Limite: La Griglia Territoriale Americana o La Negazione Dello Spazio-Substrato," 1998.

13. Linda Pollak, "American Ground. Four Kinds of Disturbances," *Lotus* (1999).

14. Germano Celant, *Michael Heizer* (Milano: Fondazione Prada, 1996).

On more general terms, the capacity to shape through a metaphysical, supernatural procedure, not belonging to nature, has been identified by Alain Roger with the term artialisation.

It can happen in-situ, by hand of those who directly intervene on the ground and modify it, or in visu, through painting, writing, photography. They constitute the models that are able to influence the collective way of looking at the landscape and determine its value. Artialisation (neologism that derives from the writings of Michel de Montaigne), is a philosophical-operative notion that is able to see within the artistic involvement, the main mediation tool to intervene on the open space and determine it.

## The University Crossing Culture-led Rejuvenation Project

This study, starting from this short initial excursus, wants to address a number of open issues over which to reflect by using the architectural project as an instrument and, more precisely, through the development of the University Crossing Culture-led Rejuvenation Project, promoted by the Southern Methodist University, the City of Dallas, the Office of Cultural Affairs and the University Crossing Public Improvement District. Its objective is to redevelop a pedestrian trail that runs across the city of Dallas, Texas with the integration of architectural and artistic installations.

The city of Dallas, moreover, holds a special relationship with art and architecture (think of Louis Kahn's Kimbell Art Museum, Edward Larrabee Barnes' Dallas Museum of Art, Morphosis' Perot Museum of Nature and Science), which is why generating public spaces with art as a strategy has been recognized as an optimal choice, in order to allow a reinterpretation of the urban context and its complexities, but also as a means of intervention for the re-design of significant parts of the city.

The three project proposals presented in a later section of this paper (findings) are some architectural experimentations to further enlarge the idea of the "art corridor" already being proposed by the mentioned promoters. The proposals are all part of this enlarged vision for Dallas that foresees the idea of the art corridor projected onto the larger networks of trails and open spaces of the city of Dallas. These projects represent an invitation for the institutions not to limit the idea of art to be included in this type of interventions and to think not only on multiple scales but also on the inclusion during these processes of different disciplines.

The projects have been formally presented to the University Crossing Public Improvement District and although they will not be physically implemented within the concepts for the University Crossing Art Corridor, their contribution to its development have been acknowledged.

## Literature Review

### Comparing USA to Europe

According to Aristotle, it is Hippodamos of Miletus the inventor or the regular division of towns.[15] The Roman foundation cities will follow this division as will also in 1881, according to Koolhaas, "the most courageous prophetic act of the western civilization", the Manhattan grid. It is the start of experimentations over an empty terrain by using a chessboard system, the description of a hypothetical population, the definition of ghost buildings, the concession of inexistent commercial activities.[16]

It is not so much the use of the grid per se, that differentiates the American cities from the European ones, since the concept of the grid has been introduced in the American continent during the colonial period. What makes America and Europe different is the following development of the continental grid, a drastic homogenization of the territory and a radical change in scale. The relentless tracing of the grid does not only determine the settlement scheme of the rural areas, but also those of the future cities. The planning and measuring instruments collapse into a single element when the one-mile grid, that defined the municipalities of the east coast of the United States, was extended in a continues matter, until it reached the Pacific coast. Moreover, the colossal grid anticipates by almost a century, the scale of mobility and of the automobile. While the European city is developed through transformations and mutations with a tridimensional relationship between the fullness of the buildings and the voids of their internal courtyards, as well as voids of the streets and squares, the American cities are better defined by a composition of figures arranged on a background, since the syntax given by a bidimensional field of the grid, implies a planar strategy.[17]

The following literature review, starting from the aesthetic value of the void and the relationship between art and public space, explores the relationship and the differences in the twentieth century, between the American and European cities.

### The Void, a New Aesthetic of the City

The concept of void in nature is not an absolute notion, even in the intergalactic space it's possible to uncover a density, even if minimal, of molecules per cubic meter. Vice versa, matter that we understand and know as "full", on the

15. Farinelli, *L' invenzione della Terra,* 2007.

16. Matteo Biraghi, "Surfin' Manhattan," in *Delirious New York. Un Manifesto Retroattivo per Manhattan* (Milano: Mondadori Electa, 2001), 228-235.

17. Mario Gandelsonas, *X-Urbanism: Architecture and the American City* (New York: Princeton Architectural Press, 1999).

atomic level, is concentrated almost entirely of nuclei, while the remaining matter is mostly made up of voids.

In terms of metaphysics, the western culture has referenced, for a long time, the concept of "nature abhors the void". The Aristotelic concept of *horror vacui*, understands the void as a problematic condition of absence, of crisis and of lacking that becomes nihilism.[18]

Martin Heidegger reverses these assumptions in the essay *The Thing*,[19] clarifying how the significance and the value of objects does not reside in their physical substance but in the void they delimit and enclose, like a sort of fence.

It is an aspect easily encountered in the architectonic dimension, where the single parts that make up a building, are not as relevant to the spaces that are indirectly derived from them.

The void then, can assume an architectonic quality and become the element on which to base the principle where there is nothing, everything is possible.

A belief that Koolhaas, starting from 1987, applies to different scales, and in particular for the ville nouvelle of Meleun-Sénart, where he establishes that if the building subtracts itself from any control, it is necessary to aim to master the void, accepting a new aesthetic for the city.[20]

## The Relationship between Art and City

By understanding the void as the place between what is extruded from the ground, (an abstraction very easily understood especially when looking at skyscraper cities) it is possible to also identify public space within this image. In Camillo Sitte's book *City Planning According to Artistic Principles*,[21] he explains that the *piazza*, the best symbol of the European public space, used to hold a special meaning since it was originally designed to host a piece of art, a sculpture, and to give respectful distance of contemplation to the beautiful building facades. As time went on statues and monuments started to become less and less relevant, less necessary to the public and the new piazzas are unable to hold the same meaning, thus the loss of importance within the texture of the modern city.

## From the Modernist City to the Suburban City

It is possible to cite a long list of architects that have explored the idea of a new, real modern city, able to express the new modern times, the "machine age";

18. Sebastiano Roveroni, *Figure del vuoto* (Trieste: University of Trieste, 2008).

19. Martin Heidegger, "La Cosa," in *Saggi e Discorsi* (MIlano: Musia Editore, 1991).

20. Rem Koolhaas, "Immaginare Il Nulla," in *Oma. Rem Koolhaas* (MIlano: Electa, 1991).

21. Camillo Sitte, *City Planning According to Artistic Principles* (Santarcangelo di Romagna: Jaka Book, 1889).

Le Corbusier with his Ville Radieuse and Wright with Broadacre city, just to name a few.

These different approaches and idealisms all translate to mark a very specific route that the modernists are heading toward, thus creating a clear opposition to the typical way to interpret public space in favor of the "architectural city".[22]

This architectural city is idealized as the most rational form of living, mainly consisting in public or green space, streets for circulation and buildings, specifically tall buildings where one would live, work, shop... The architectural city seems to be the "city of objects" where the tall buildings breaching out of the vast green fields seem to be monuments of themselves and their ideologies.

With the main focus of the architects to define an architectural identity, public space has been treated as a sort of leftover, just to be considered green space for leisure but usually does not really include a specific design or thought. The concern at the time was mainly focused on improving the conditions of housing so the matter of public space was thought of as a very expeditious, second rate procedure, necessary in order to merely resolve hygiene and space issues.

In this specific field, America, the new world, seems to be the perfect setting for the modern, architectural city, as one of its most important necessary conditions is the *tabula rasa*. The American continent appears to have plenty of un-urbanized space, a condition that will only partially present itself in Europe after the second world conflict, where the war provided the perfect premise for the reconstruction of the old continent.

After the Second World War American cities started to change as well, suburbanization confirmed itself as the most popular trend of expansion, not opting for the European trend of urbanization that was believed to be the obvious consequence. This is also the time when American tendencies become models for new neighborhoods and urban development projects in Europe.

The question that seems obvious is, after the popularity of the suburbanization, what happens to the city of objects?

Just like its European predecessors, one urbanization trend does not exclude the other, on the contrary, this urban fabric diversification (not exactly stratification) adds complexity to the simple and regular city patterns.

## Collage City?

*Collage City*[23] by Colin Rowe is one of four books, along with *Architecture of the City*[24] (1966) by Aldo Rossi, *Learning from Las Vegas*[25] by Robert Venturi, Denise

22. Gandelsonas, *X-Urbanism,* 1999.

23. Colin Rowe and Fred Koetter, *Collage City* (Cambridge, Mass: MIT Press, 1983).

24. Aldo Rossi, *The Architecture of the City* (Cambridge, Mass: MIT Press, 1966).

25. Venturi, Scott Brown, and Izenour, *Learning from Las Vegas,* 1977.

Scott Brown and Steve Izenour and *Delirious New York*[26] by Rem Koolhaas, that have made a sedimented the architectonic culture of the second half of the twentieth century and still considered essential today.[27]

According to Rowe, starting from an urban condition considered as a sum of objects, the perception of a single unitary figure or of a coherent urban form is not possible.

As a consequence, two are the conceptual instruments that Rowe provides with his book. On one side, in order to analyze the contemporary city, he recognizes the figure of the fragment, of a partial, incomplete but rational element since it still holds quality, rules and intrinsic coherence. On the other side, the instrument of analogy allows to create a relationship between the fragments beyond any contingency, temporal location and stylistic appearances, by allowing them to interact in the form of projects, taking apart ideas and buildings from their original places to reassemble them elsewhere.[28]

Rowe criticizes the methods of urban planning starting from the utopia of the "total project". He suggests a different, innovative method based on fragmentation and the composition of a collage. He goes well in depth explaining that the stratification of different eras and histories of many European cities leads to the image of an urban complexity that is made up of pieces of many different cities that together form its contemporary character. The process of the collage gifts the European cities of intricacy and urban depth that are usually missing in the more geometric and young American cities.

As most of them lack the ancient history of the old continent, the oldest stratification possible is still pretty recent, the earliest permanent settlement dates back only 500 years, so it is hard to talk about a collage as Rowe intends it. Most cities though do possess some generating principles and layers but, in this case, it is not so much the city history that is giving it its character and complexity, the true protagonist of the American cities is the infrastructural network.

The basis of American history is movement, starting from the emigration from Europe all the way to the conquering of the west and the arrival on the Pacific Ocean. When mentioning infrastructure today it is easy to exclusively think about Motorways, but the term is not limited to such meaning as Natural and Pedestrian Infrastructure also exist.

In fact, when looking at the city of Dallas for example, the vast and strong presence of natural elements in the city, such as the Trinity River, the White Rock Lake and the many natural parks along with the small neighborhood parks all contribute to form a new complex, natural layer to be added to the stratification.

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26. Rem Koolhaas, *Delirious New York* (Oxford: Oxford University Press, 1978).

27. Alberto Ferlenga, "Uno Di Quattro," in *L'architettura Come Testo e La Figura Di Colin Rowe* (Venezia: Marsilio Editore, 2010), 170-179.

28. Massimiliano Marzo, *L'architettura come testo e la figura di Colin Rowe* (Venezia: Marsilio Editori, 2010).

The natural aspects of the city allow a good balance between "empty space", the void, and the constructed spaces occupied by buildings. The grids of the city previously mentioned do not take into consideration the natural void and if it wasn't for its strong presence, the grid could extend without borders and potentially every area would be built. If this were to be the case, the image of the void would be extremely simple and not at all useful to describe Dallas or any other city, as it would trivially coincide with the map of its streets.

## X-Urbanism

In X-Urbanism[29] Mario Gandelsonas, through seven scenes, analyses the development of the western city and the relation with architecture, starting from the fourteenth to the end of the twentieth century.

The last scene is dedicated to a new model: the X-Urban city, a dynamic phenomenon that defines a polycentric dimension, held together by the glue of the continental grid where the opposing models of center and periphery progressively mix their characteristics and lose that strong initial relation of mutual dependency.

The value of the architectural articulation and of the city is not found in the regularity of the grid nor in the complete disarray of its disappearance, rather on the edge that separates order from chaos; not really in the open space, where the more chaotic urban forces are manifested but where the rule of the grid is put into crisis.

In these places it is possible to find a greater richness of new compositions, of surprising syntactic configurations and of astonishing symbolic articulations.

The urban drawings produced by Gandelsonas, are independent from the perceptive dimension. They are a visual derivative whose results are not defined *a priori* but have to be recognized and interpreted through the inversion of subject and background. The geometrical matrices of the fabric are represented three-dimensionally, as objects, in order to clearly bring out those implicit continuities and hierarchies that are the outcome of the overlays, of the competence of different meshes that have followed one another and have stratified over time.

Starting from this disciplinary and theoretical framework, the design experiments were developed based on the methodology described below.

## Methodology

The applied methodology foresees as a first phase the morphologic analysis of the Dallas conurbation as a whole, according to the criteria individuated on the basis of the literature review.

29. Gandelsonas, *X-Urbanism,* 1999.

The first criteria is the empty space (the space of the void), which is recognized starting from the urban grid.

## The Grid

The identity of the American city is a very well explored topic in the history of modern Architecture. It is no stranger to idealizations, critiques and eulogies. What is also commonly understood is the incredible opportunity that the new country offered in imagining a new way of living, a new appearance for a very ancient concept, the city. It is peculiar to think that the Founding Fathers, with the opportunity to create new models, different from the cities of Europe, physical representations of democracy, where everyone could have the possibility to fulfill their dreams, decided to do so by tracing a grid.

The Continental Congress's Land Ordinance of 1785 established the Continental one-mile grid that was to be used as an urban planning tool for any new city on the East coast at first, and later on in the West as well.

This was an attempt to establish an order, a way to deal with the empty space of the new world that needed to be "filled".[30]

What seems paradoxical is the idea that the "new city", the city of modern living, was to be based on the most ancient way to organize and urbanize untouched land: The Roman grid (the layout of a Roman camp was known before the Greek historian Polybius (c. 203-120 BC) described it in his book The Histories.[31] Some even believe that the Romans learned this technique by watching the Etruscan cities such as Marzabotto, near Bologna (Italy), estimated to have been erected in the late sixth century BC and composed of a simple orthogonal pattern.[32] The Roman four-fold principle served as a guideline to define and measure the "empty" land that was to become a city or a military camp, but it also stood as a way to deal and rationalize the practicality of life.

What really differentiates what is commonly referred to as the Jeffersonian grid and the Roman grid is the scale. Roman life was defined by the centuria and so it was established by measuring the human movements and interactions, while the Jeffersonian grid seems to take measures from a different model. The American city is no longer thought of to accommodate the life of a single person, each holding a certain role in society, but to create new single opportunities for each conglomerate of existence, no matter how small. The Jeffersonian grid relates to a colossal scale, a disproportion that in this part of the world becomes a

30. Ibid.

31. Francis Haverfield, *Ancient Town-Planning* (Oxford: Clarendon Press, 1913).

32. Charles Gates, *Ancient Cities: The Archaeology of Urban Life in the Ancient Near East and Egypt, Greece and Rome* (Abingdon, Oxon ; New York: Routledge, 2011).

sort of urban mutation, where space becomes subordinated to time and the city is no longer the city of objects but the city of circulations.[33]

The Grid is the instrument that, through the entire modern era, allows to define *a priori* what has to be the shape of the world, bending the physical reality of places to the abstract concept of space.

The grid seems to be a strategic element in order to develop an identity of the American city but not exclusively. Also a conceptual and physical filter that allows to organize and compose those objects and fragments of which it is massively composed of.

It becomes the basic element to develop both the low-density model of Wright's Broadacre City, as well as the reference for Ville Radieuse with its cartesian skyscrapers by Le Corbusier.

The grid allows to measure vast spaces, that exceed the human scale, and to control, as a consequence, other strategic elements of the modern city, mobility and time.

Specific to the city of Dallas is its stratification of grids that differentiate it from Colin Rowe's descriptions in *Collage City,*[34] recognizing different guiding traces that constitute three pieces of the city that arrange themselves in a nonlinear manner.

The first piece is composed of the original traces of the city where the present-day center was more or less built over the original Peter's colony (1841), that is still quite evident today. It was constructed on half mile squared blocks oriented parallel to the Trinity river. Observing a satellite image of the city of Dallas it is possible to notice a more "disorganized", dense center with different building typologies, heights, functions, orientations.

Broadening the eye to a larger view of the city, as one starts to move away from this dense center it is very easy to notice the usually geometrical lines of the streets that distribute many blocks of single family detached houses. Even if Dallas was not specifically built on the Jeffersonian grid it is definitely not indifferent to its cultural effects. The more recent expansions seem to be following a similar, north-south oriented grid to help measure and regulate the suburban growth.

Part of Downtown, Deep Ellum and continuing West, the Interstate 30 can be defined as a topographic constellation as they don't seem to follow the other, more apparent rules of the city.

Downtown Dallas is the area bounded by the downtown freeway loop and it is home of the city's many skyscrapers, museums and theaters. Deep Ellum is one of the richest historical neighborhoods that is linked both to industrial productions of cotton gin and Ford automobiles. It also has a rich artistic and

33. Gandelsonas, *X-Urbanism*, 1999.
34. Rowe and Koetter, *Collage City*, 1983.

music saga that still characterize the place today. The Interstate 30 continues West and connects Dallas to the second biggest center in the Metroplex, Fort Worth.

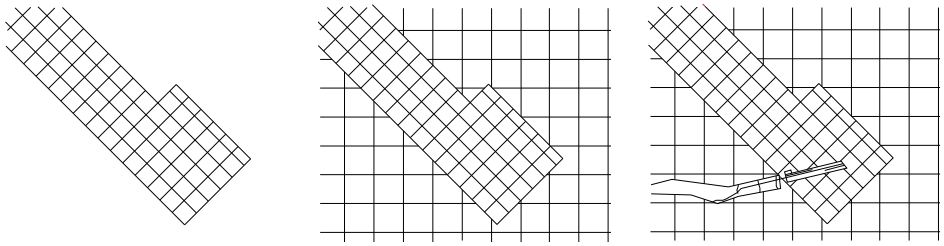

**Figure 1.** *The Three Pieces of the Grid Stratification (On the Left the Original Peter's Colony, in the Center the Geometric Grid of the Expansion and on the Right, the Topographic Constellation)*

However, the urban grid is not sufficient in order to describe in its entirety the complexity and formal quality of the void on a city scale. To this structure it was therefore decided to add the system of natural open spaces; this operation was named "Mapping the Void".

## Mapping the Void

This operation of morphologic analysis superimposes the anthropic logic of the grid to the system of parks and open spaces intended as a further system of forms that give structure to the American space.

Based on the considerations expressed in the introduction, and in particular in the paragraph "Architecture and Landscape", the natural elements are in fact perceived and considered in contraposition to the urban structure and architectonic elements.

Given the inversion in perspective of the built environment, physically extruded from the ground, now considered the background, what is necessary to recognize and interpret, in the understanding of the American cities as the subject, are the traces extracted from movement and circulation, in other words, the "empty space" left between the buildings.

In the American idea of public space, what really changes is the role of the means of circulation; here, the streets are the main public space appearing as a void that separates the different blocks or sectors, representing an impediment and not a "place" fit to host public life.

In America the strategy for creating urban voids seems to be left completely to chance, as the simple leftover of the built extrusions. Public spaces are not actively created, they do not follow a principle of subtraction like in Europe where this action created a strong dialog between solids and voids, where one legitimizes the other.

The areas for public interactions are limited to mobility thus inevitably elevating streets, highways and parkways to the primal places for novelty in a city. This introduces a new element, street facades that hold a mediating role between objects and voids.

The identity of the American Cities can be mapped through its voids, spaces by simply blacking out all the buildings.

Starting from the image of the void, it is possible to individualize different hierarchies of objects depending on the scale used to visualize certain areas of the city.

The environmental system composed of all the natural elements such as forests, lakes, rivers but also neighborhood parks that form small or large excavations are the most visible areas in both the map of the void and of the traces. That is mainly because of the "thickness" of the trace and because most of these areas don't follow cardinal rules of orientation but have organic shapes that break and challenge the rules of the grid.

**Figure 2.** *Map of the Void for the City of Dallas*

The criteria of the void do not describe completely the dimension of the contemporary American city. As indicated at the end of the paragraph The Grid, the contemporary city is made up of relations and nodes that are formed at the interceptions of such relations.

A second analysis criteria was then individuated, based on another characteristic element of the American space; mobility: and obviously, on its primary reference parameter, time.

## Traces, the New Time

As the shift from Architectural City (as seen in the paragraph From the Modernist City to the Suburban City) to the City of Circulation (as seen in the paragraph The Grid), a new way to measure space and distance becomes necessary in order to fully understand the change. The urban patterns become necessary to the identity of the American cities as they become their identities.

We no longer identify the American city through its historical buildings, new constructions, monuments but through its traces. To trace actually means to mold the space in regard to speed; this way the traces of the streets become both pragmatic lectures to learned from what is and interpretation of the evolution of the city as a whole. It is inevitable to think of the system of traces as welcoming the concepts of direction and measurement, only logically calculated by time.

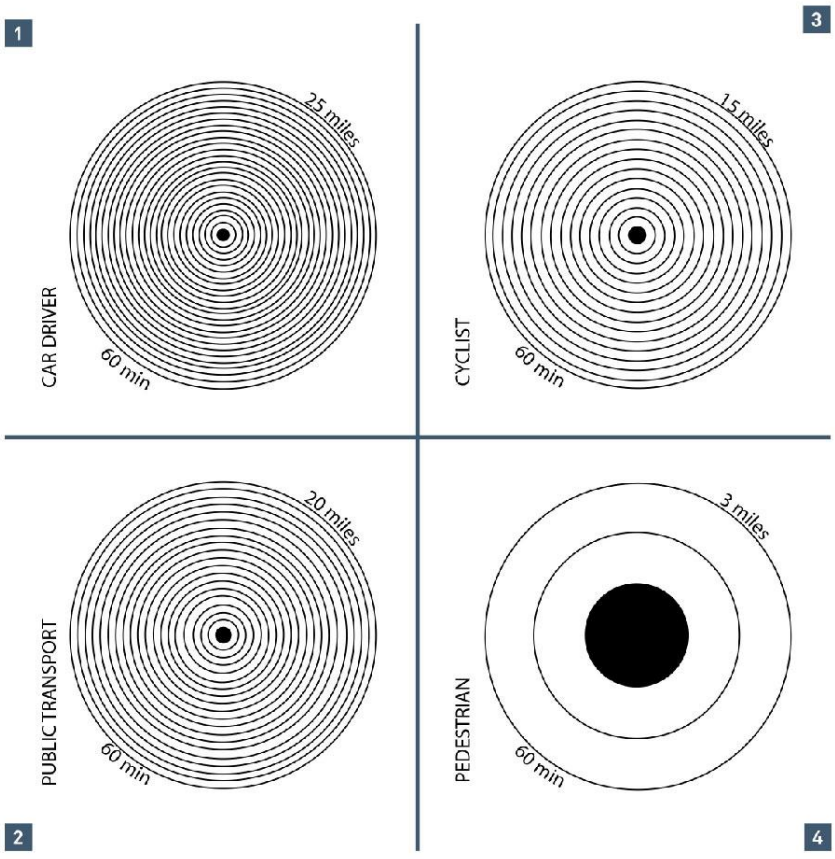


**Figure 3.** *Diagram Comparing the Different Speeds of Cars, Public Transport System, a Cyclist and a Pedestrian*

Figure 3 is a diagram that compares the distances traveled in the same amount of time by different types of transportation. It is very clear that more or less the first three, travel by car, by public transport and by bicycle are fairly similar. This allows for a single design strategy that can be considered the "cause" of the excessive scale of the city. Just as clearly, it is possible to notice that the pedestrians are greatly disadvantaged when traveling long distances, especially if considering the context in which the pedestrian is allowed to move. For this reason, it is important to design urban pockets that can offer a different scale every certain numbers of miles in order to better distribute the concentration of foot-travelers.

Even in a rational city like Dallas where one is tempted to easily measure the space with the help of the grids, what is really important in terms of movement is time. The same distance of one mile, if traveled by car, would take around 2.4 minutes but if traveled by a pedestrian it would take around 20 minutes. This way it is possible to understand why talking about distance may appear almost inaccurate in this situation.

The scale of the American cities clearly favors the car, and everything is proportional to its speed. The city is also equipped with a large network of public transport whose speed is very close or sometimes even faster than most car routes, offering a different type of transportation experience; this way the stops of both bus routes and the DART line become main points for the creation of the artistic and architectonic installations.

This is why in the attempt to generate a more *accurate* map of the city of Dallas it seems necessary to start by mapping the transportation system cited before as the sum of highways, parkways, main and secondary streets, public transportation lines like the DART that runs on rails and pedestrian trails that form actual incisions in the dense built texture of the city as it is in fact the collection of the most visible traces.

Cultural and sportive systems also appear in this map as they contribute to enrich the public spaces in the most social meaning possible. Sometimes these even overlap with each other as the first individualizes theaters, museums, libraries but also universities and schools, clearly including its open-air sports facilities, and the second also maps other public or private athletic centers.

As mentioned before, breaking down the typologies of buildings in the city of Dallas will definitely not contribute to the complex and overlapping image of its traces and voids, therefore definitely transferring the built environment to serve as a background in the description of such city.

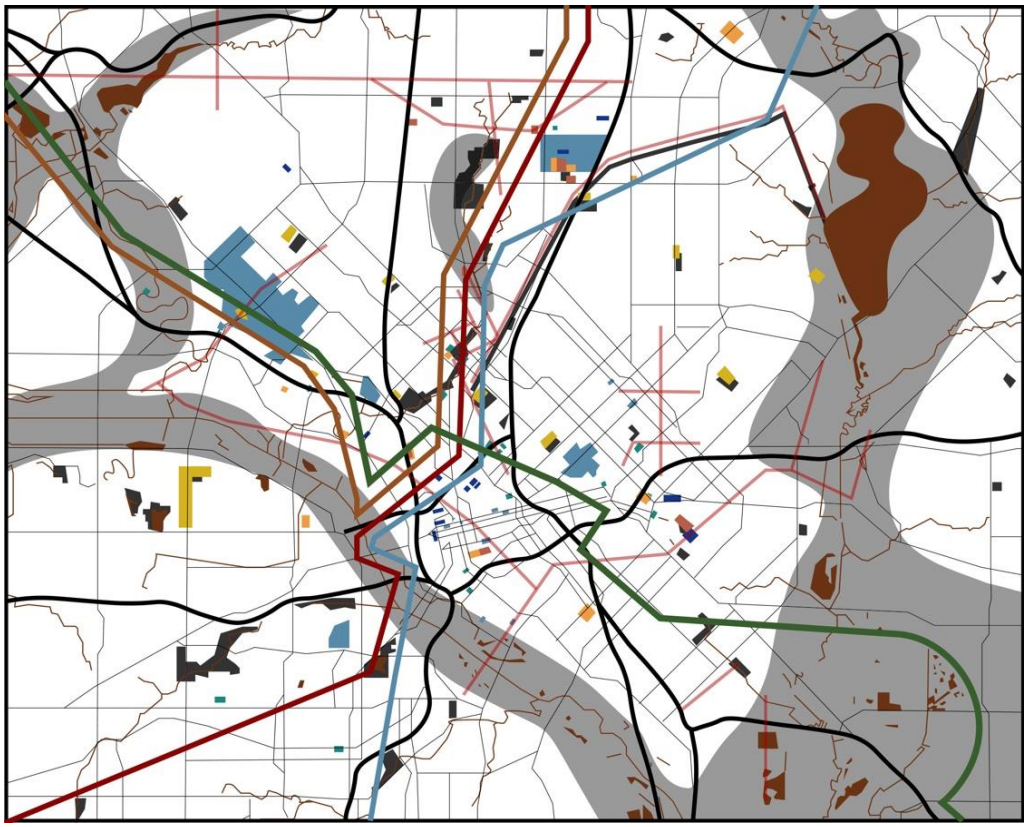

**Figure 4.** *Map of the Traces for the City of Dallas where the Different Systems, Transportation, Natural, Cultural, Have Been Layered on Top of One Another*

## Findings

The obtained images of the city, and the principles identified in the literature review have allowed to identify three specific areas where three public space projects were developed according to three different themes and three different scales (geography, infrastructure, landscape): the relationship between architecture and nature, the relationship between architecture and infrastructure, and the relationship between architecture and art.

These three projects were called fragments.

### Fragments

Due to the enormity of the territorial expansion in north America, it is in the hands of land artists to rediscover the geographical dimension, able to express and interpret a location in a broader sense.

A new idea of space has been made possible by the works of such artists as the story of the single elements are in relation to the entirety of the vision and the impact on the landscape.

From Colin Rowe on, the hypothesis of a city as a museum of discordant shapes has brought to light the dialog between the contents and the container, between subject and background but also has individuated, within the collage, a clear iconographic reference that holds in itself the idea of the city.

Just like in Picasso's collages, this process enables to hold together the precarious equilibrium between support and event, necessity and possibility, interiority and exteriority, it employs and interiorizes the poetics of the fragment, the principal composition of the contemporary city.

Aspects such as physical, geometrical, spatial and dimensional are no longer sufficient on their own and characteristics like trace stratifications and the mapping of the void, also become instruments of investigation and reflection, representative of the genius loci.

Modern and contemporary architecture rediscovers the instinctive vitality of compositions by fragmentation, of the *comporre*, of putting together in the Vitruvian sense. The architectural object seems to have lost classical unitary status in order to become part of a narration in the making, slowly increasing the risk of becoming a discard, a leftover, if it is not able to hold its meaning to favor a more dynamic dimension of modernity.

One must rediscover a contemporary "liking of the context" that imposes a research where the project must be able to instigate complex relationships between the autonomous object, as a translation and fragmentation of a theory, an image or figure, and the individual and specific place or site constructed by the context of experiences and the collective will.

This is achieved by mediating contextual relationships between geography and aesthetics, topography and history, geometry and tradition that have to grasp the scale and figurative connections that make up the principle of this new geography.

Even if not exactly a collage city, three different fragments have been individuated in the city of Dallas. Here presented by Figure 5 are the fragments of the three projects used as means of analysis for the intervention of art as a design strategy for the public spaces of American cities.

The first fragment is an extrapolation from the map of the void that identifies a new nature system.

The second fragment coincides with the succession of places previously addressed as a constellation, a portion of downtown, the neighborhood of Deep Ellum and a portion of the Interstate 30.

The third and last fragment relates to the already existing network of pedestrian trails of the city and incorporates the University Crossing Trail.

An architectural project has also been developed for each of these fragments that highlights and deepens some of the architectural themes previously identified.

The Network develops, on the large scale, the relationship between architecture and nature, highlighting the typically American physical construction of landscape values.

The Stripe explores the nature of the infrastructure as a place, according to the American model which recognizes a primary anthropological and historical significance to the great communication routes.

Finally, the Furrow attributes a new architectural and artistic value to an obsolete infrastructural trace which was therefore emptied of meaning. This project investigates the space of movement, of time, of the different speeds and different mobilities.

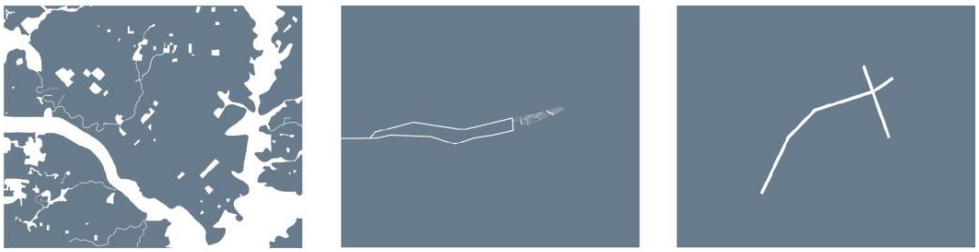

**Figure 5.** *On the Left the Network Fragment, in the Center the Stripe Fragment and on the Right the Furrow Fragment*

## Discussion

### The Network

The first of the three projects, the Network, was born from an initial selection of the empty spaces previously mapped in order to from a new nature system.

A further selection and redrawing of the initial selections has led to the invention of a new map that can be read through symbols in order to successfully individuate crucial nodes, where many realities crash and are in need of mitigation.

The project foresees the placement of 2 groups of objects on the riverbed.

One group made up of small cells, fences, of irregular appearances. They are not accessible and are either filled with vegetation or emptied of the river water.

The second group is larger objects than the fences and all have a defined rectangular shape with varying pedestrian access points. They appear as open-air rooms, playgrounds inspired by the ones designed by the artist and landscape architect Isamu Noguchi.

Viewed from above the open-air rooms resemble tridimensional interpretations of Kandinsky's compositions. This way a new, closer, accessible, relationship with the river can be established.

The purpose of the project is to offer a new, estranging and surreal image of the city, the possibility for the citizens to interpret it as a new part of the city that now welcomes the human presence.

This project is confronted with an ideal of landscape intended for the geographic dimension, vast, open, geologic. It tells of the American space as a physical, concrete space, that of land art.

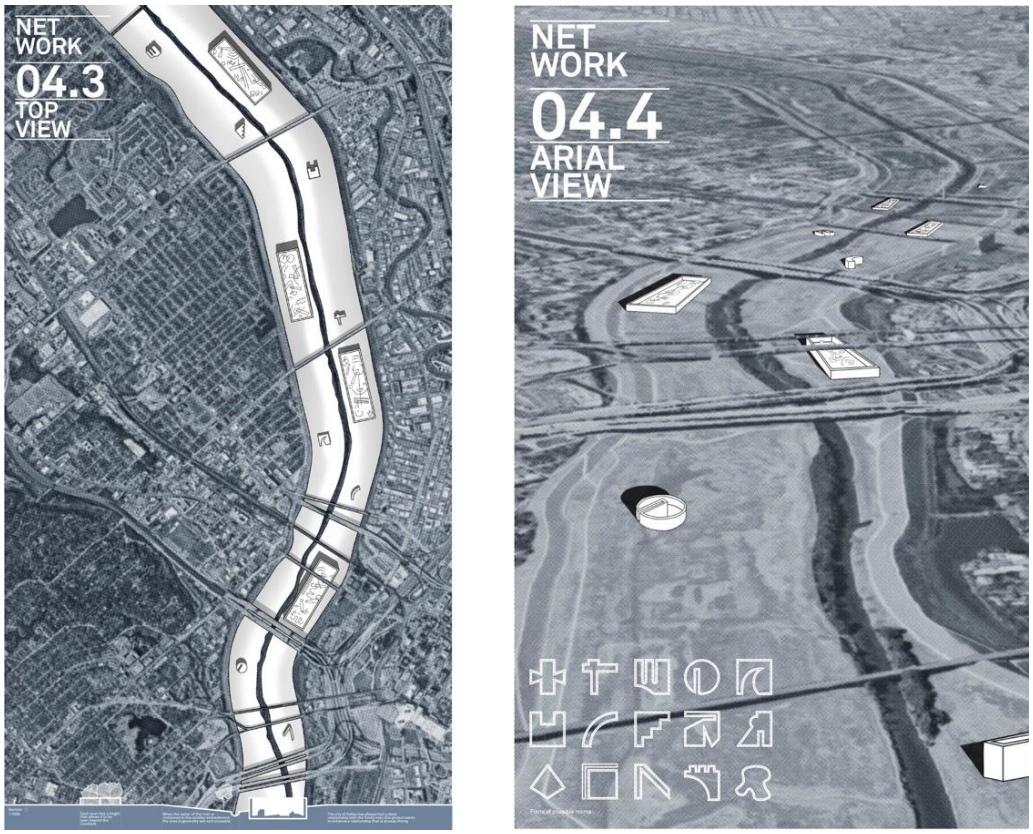


**Figure 6.** *Views of the Network*

## The Stripe

The second project is called the Stripe. Here the selected place of intervention is a motorway junction.

According to the American architect Lawrence Halprin's definition the highway systems are already a work of art, executed at a much larger scale, much like land art.[35] Its scale usually does not allow such beauty to be seen and appreciated without a satellite image.

For this project a dense motorway exit has been chosen as the place for intervention and the strategy here is not to design through simplifications but rather through stratified complexity by adding a three-dimensional park.

It is composed of terraces, some accessible, some host large numbers of plant species that require little to no maintenance in order to populate the highway with vegetation, animals, people and not just cars.

35. Lawrence Halprin, *Freeways* (Reinhold Publishing Corporation, 1966).

It is not just a vertical park as part of its articulation happens thanks to its relationship with the ground. In order to recognize the beauty and the complexity of the ribbons of the highway one must reach Icarus's point of view, such vision is only possible through satellite images.

This is why under the motorway and the terrace park, a ground drawing that resembles the curves and bends of the satellite images of the highway has been added in order to allow every viewer and park goer to experience such beauty without the need to fly so close to the sun.

It is a project that distances itself from the typically European spaces of the Agorà or of the Roman Forum, in order to look for new and unpredicted formal solutions in dialog with infrastructure. This project develops the idea that in America the places of identity and in some ways "monumental" are the streets and the large roadways.

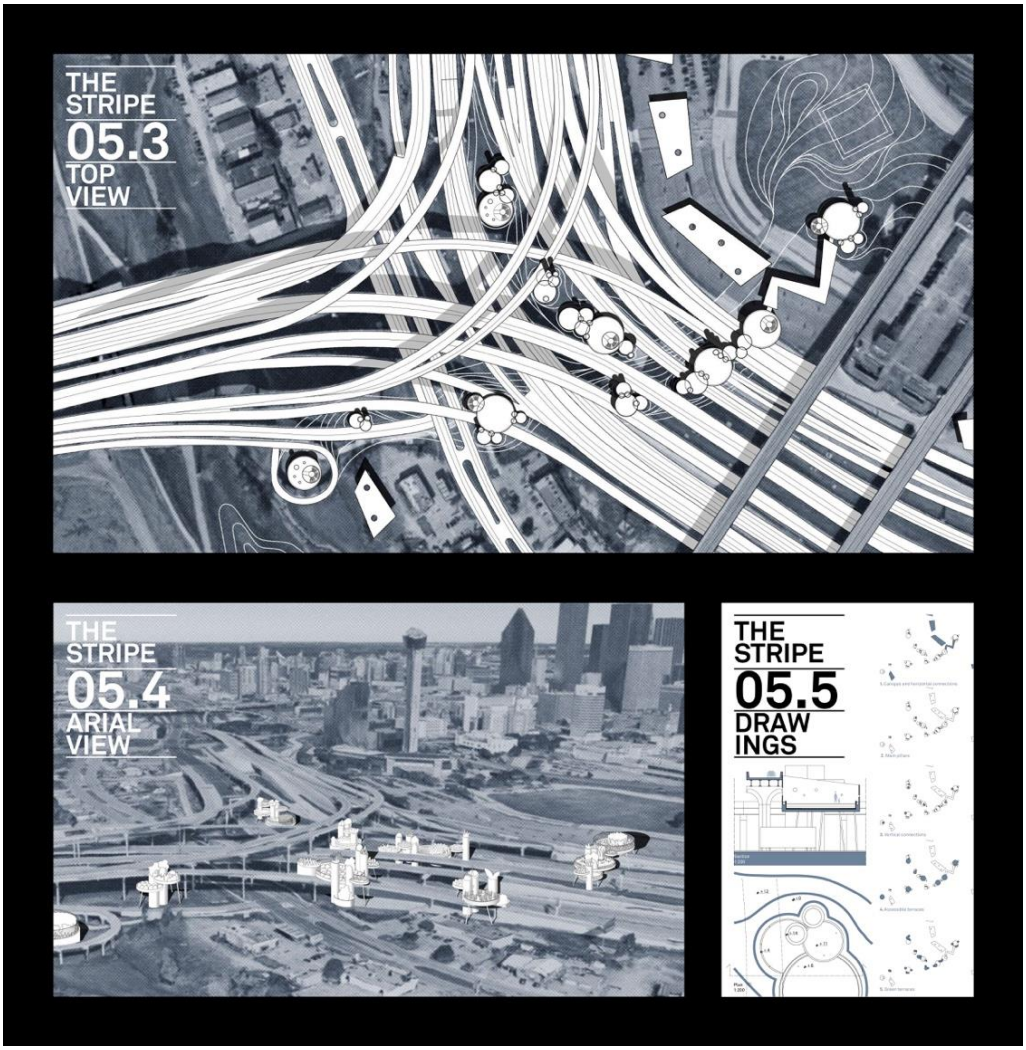


**Figure 7.** *Views of the Stripe*

## The Furrow

The third and last project links itself with the already existing network of pedestrian trails of the city. The majority of these trails' history starts in the age of the railways in America. In this case with the Southern Branch of the Union Pacific Railroad, built to connect Texas with the neighboring Missouri and Kansas in 1865. Once the railway line was dismantled the initial plan was to use it as part of the DART line but instead it was decided to create a linear park. As continuation of the Katy Trail (that takes the name of the old railroad, K for Kansas and T for Texas), the University Crossing Trail is to follow the same footprint. Along with being a pedestrian trail, its fortune is the proximity of an important DART stop, Mockingbird station, also the stop to reach SMU University.

The main inspiration for the project comes from the Italian Architect Gino Valle's Resistance Monument. It consists of a new route that connects the three areas of the station, the shopping center, the tracks and the parking lot through the construction of a thick wall that has been emptied and inhabited. This way the new connection corridor becomes an open-air gallery where it is possible to host permanent and temporary exhibitions.

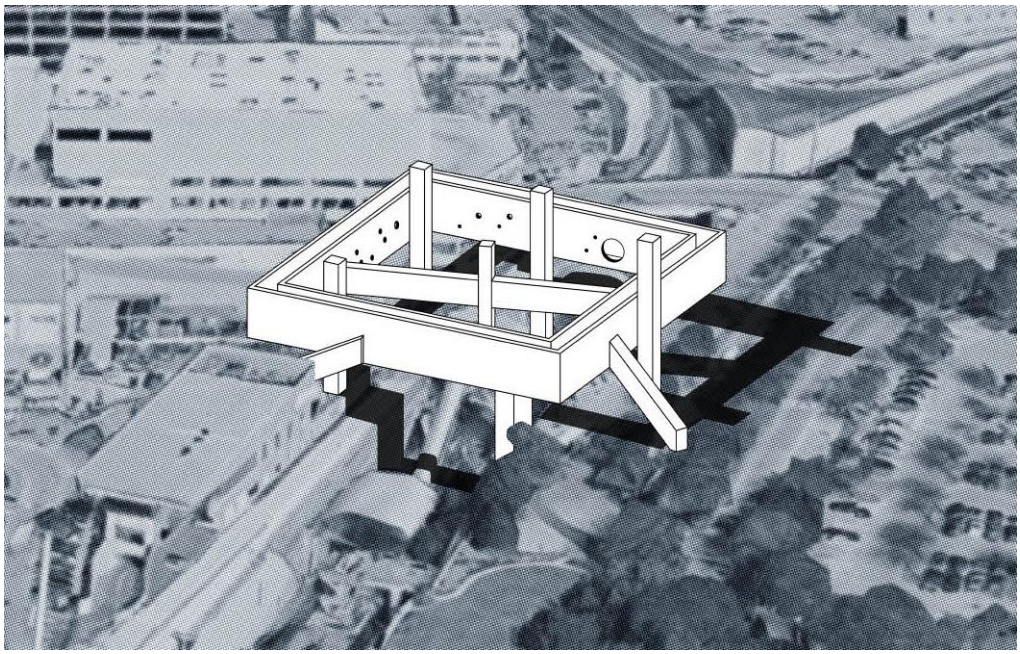

**Figure 8.** *Arial View of the Furrow. The Inhabited Wall Connecting the Parking Lot on the Right, the Rails Below and the Commercial Center on the Left*

This last project underlines the fact that the "American space" is that of the pioneers, but also of the origins of humanity. A mobile spatiality linked to the nomad dimension, before man built cities.

## Conclusions

The influence of infrastructure outside the cities, at the end of the twentieth century, appears in the form of the American parkway that shows a different scale form the typical urban one. The Ribbon Park Projects, the Continuous Parks of Robert Moses or the Lincoln Highway, the first road whose extension crosses the American continent for over 5,000 kilometers; they are no longer just roads but are "part of nature".

The difference between natural and artificial starts to disappear, a second nature is born.[36] In order to defend the Great American Planes from the Dust Bowl, the Prairie States Forestry Project by Raphale Zon of 1935 is an example, 3200 kilometers of windbreaks or shelterbelts that vertically cross the United States through North and South Dakota, Nebraska, Kansas, Oklahoma and Texas.

The architectonic and urban semantic center is, on the contrary, from the Renaissance, a fixed special point of view, that of the perspective; the eye is static, and the space is determined by the distance from the observer.

From the moment that space is defined starting from a dynamic vehicular flux, the point of view starts moving and creates a new condition that explains the scarce success of architecture's attempt to incorporate infrastructure.

The attempt by architects to release infrastructure form its specific function starts when they start to observe the modern metropolis beginning from the syntaxis of the vehicular fluxes.[37]

The ensuing struggle between the space of infrastructure and architecture, that starts from this attempt, has always found the first as victorious, since the architectonic organism has a better capacity of morphologic adaptation compared to the shape of infrastructure that is characterized by a strong autonomy rigidly determined by geometry, speed, capacity and scale.

From this conflict, seemingly insolvably in favor of architecture, the results are new plastic forms to be investigated, thanks to the resiliency of the architectonic project and its capability to adapt.

In fact, today, distance between infrastructure and architecture, that was previously very pronounced, through use, shape and significance has progressively reduced. So much so that the relationship between the two elements has now become a typical theme of the contemporary architectonic and urban projects, where the paradox between collective space and the technical manufact finds an equilibrium, even if unstable and dynamic. New figures can be derived, doubled, made up of equivalent, complementary and symbolic elements.

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36. Benno Albrecht, "Infrastrutture Globali," in *L'architettura Del Mondo. Infrastruttura, Mobilità, Nuovi Paesaggi* (Bologna: Editrice Compositori, 2012), 74-95.

37. Aldo Aymonino, "In Mezzo a Una Strada," in *L'architettura Del Mondo. Infrastruttura, Mobilità, Nuovi Paesaggi* (Bologna: Editrice Compositori, 2012), 194-201.

To the birth of new forms, new architectural "animals", also corresponds a different phenomenon, linked to the death of existing infrastructure.

If up until the XIX century a manufact could have wasted away in peace, waiting for nature to recapture it or, with patience, could have naturally become part of the landscape in the form of a ruin, according to the aesthetic of the sublime. With the industrial revolution, the acceleration of the technologic process has revealed the temporary character of infrastructure, whose life cycle, shorter and shorter, is due to its technical obsolescence.[38]

The New York High Line, and well before, the Paris Promenade Plantée, are some examples. Thanks to the prevalent longitudinal dimension that accompanies the natural movements of a small number of people, an original manufact of the monofunctional scrolling has transformed into a place of slow rhythms dedicated to the human being.

These renovated objects continue to keep an intrinsic infrastructural nature that determines the permanence and the frame of the surrounding *forma Urbis*. These are regenerators of the urban fabric that are not only facilities of the public space but become drivers of the construction transformation and attractors of economic investments.

Being residual spaces, today they gain meaning and a new esthetic value, but where does this value come from?

According to Alan Roger, "before creating landscapes through painting, man created the gardens" and in a similar way, land art has made "the planet a landscape". Thus, native or natural beauty, does not command mankind's, it is merely a consequence of its creative actions and of its eye.

Places take on esthetic values through our eyes by the mediation of the artistic interpretations that indicate us how to observe them. Like Oscar Wild mentions, "Things are because we see them, and what we see, and how we see it, depends on the Arts that have influenced us".[39]

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38. Pippo Ciorra, "Infrastrutture. Istruzioni per l'[Ab]Uso," in *L'architettura Del Mondo. Infrastruttura, Mobilità, Nuovi Paesaggi* (Bologna: Editrice Compositori, 2012), 202-207.

39. Oscar Wild, *The Decay of Lying* (New York: Start Classics, 1891).

District (UCPID), Patrick Sanders and Ginger Greenberg, 2020 Bocconi graduate Chiara Sansone.

## Bibliography

Albrecht, Benno. "Infrastrutture Globali." (Global Infrastructures.) In *L'architettura Del Mondo. Infrastruttura, Mobilità, Nuovi Paesaggi*, 74-95. Bologna: Editrice Compositori, 2012.

Aymonino, Aldo. "In Mezzo a Una Strada." (In the middle of a Road.) In *L'architettura Del Mondo. Infrastruttura, Mobilità, Nuovi Paesaggi*, 194-201. Bologna: Editrice Compositori, 2012.

Biraghi, Matteo. "Surfin' Manhattan." In *Delirious New York. Un Manifesto Retroattivo per Manhattan*, 228-235. Milano: Mondadori Electa, 2001.

Bisiani, Thomas. "Da New H(e)Aven a Peepland Passando per Sin City." In *The Shopping Center as/Is a Meeting Place*, 2020. Available at: https://eut.units.it/it/catalogo/the-shopping-center-asis-a-meeting-place/373.

Carta, Maurizio. *Re-cyclical Urbanism. Visioni. paradigmi e progetti per la metamorfosi circolare*. (Recyclical Urbanism. Visions. Paradigms and Projects for Circular Metamorphosis.) Trento: Listlab, 2016.

Celant, Germano. *Michael Heizer*. Milano: Fondazione Prada, 1996.

Ciorra, Pippo. "Infrastrutture. Istruzioni per l'[Ab]Uso." (Infrastructure. Instructions for [Ab]Use.) In *L'architettura Del Mondo. Infrastruttura, Mobilità, Nuovi Paesaggi*, 202-207. Bologna: Editrice Compositori, 2012.

Corboz, André. "Un Caso Limite: La Griglia Territoriale Americana o La Negazione Dello Spazio-Substrato." (An Edge Case: The American Territorial Grid or The Negation of Substrate-Space.) In *Ordine Sparso. Saggi Sull'arte, Il Metodo, La Città e Il Territorio*, 239-244. Milano: Franco Angeli, 1998.

Farinelli, Franco. *L' invenzione della Terra*. (The Invention of the Earth.) Palermo: Sellerio Editore, 2007.

Ferlenga, Alberto. "Uno Di Quattro." (One of Four.) In *L'architettura Come Testo e La Figura Di Colin Rowe*, 170-179. Venezia: Marsilio Editore, 2010.

Gandelsonas, Mario. *X-Urbanism: Architecture and the American City*. 1st Edition. New York: Princeton Architectural Press, 1999.

Gates, Charles. *Ancient Cities: The Archaeology of Urban Life in the Ancient Near East and Egypt, Greece and Rome*. 2nd Edition. Abingdon, Oxon ; New York: Routledge, 2011.

Giedion, Sigfried. *Space, Time and Architecture: The Growth of a New Tradition*. 5th Edition. Cambridge, Mass: Harvard University Press, 1941.

Halprin, Lawrence. *Freeways*. Reinhold Publishing Corporation, 1966.

Haverfield, Francis. *Ancient Town-Planning*. Oxford: Clarendon Press, 1913.

Heidegger, Martin. "La Cosa." (The Thing.) In *Saggi e Discorsi*. MIlano: Musia Editore, 1991.

Koolhaas, Rem. *Delirious New York*. Oxford: Oxford University Press, 1978.

____. "Immaginare Il Nulla." (Imagine the Nothing.) In *Oma. Rem Koolhaas*. MIlano: Electa, 1991.

Lynch, Kevin, Donald Appleyard, and John R. Myer. *The View From the Road*. Cambridge, Mass: MIT Press, 1964.

Marzo, Massimiliano. *L'architettura come testo e la figura di Colin Rowe*. (Architecture as Text and the Figure of Colin Rowe.) Venezia: Marsilio Editori, 2010.

Pollak, Linda. "American Ground. Four Kinds of Disturbances." *Lotus* (1999).

Rossi, Aldo. *The Architecture of the City*. Cambridge, Mass: MIT Press, 1966.

Roveroni, Sebastiano. *Figure del vuoto*. (Figures of the Void.) Trieste: University of Trieste, 2008.

Rowe, Colin, and Fred Koetter. *Collage City*. Cambridge, Mass: MIT Press, 1983.

Sitte, Camillo. *City Planning According to Artistic Principles*. Santarcangelo di Romagna: Jaka Book, 1889.

Venturi, Robert, Denice Scott Brown, and Steven Izenour. *Learning from Las Vegas*. Cambridge, Mass: MIT Press, 1977.

Venudo, Adriano. "Not Seen and/or Less Seen of ... e Non Fu Più Solo Un Parcheggio." In *The Shopping Center as/Is a Meeting Place*, 2020.

Wild, Oscar. *The Decay of Lying*. New York: Start Classics, 1891.

Wright, Frank Lloyd. *The Disappearing City*. New York: William Farquhar Payson, 1932.