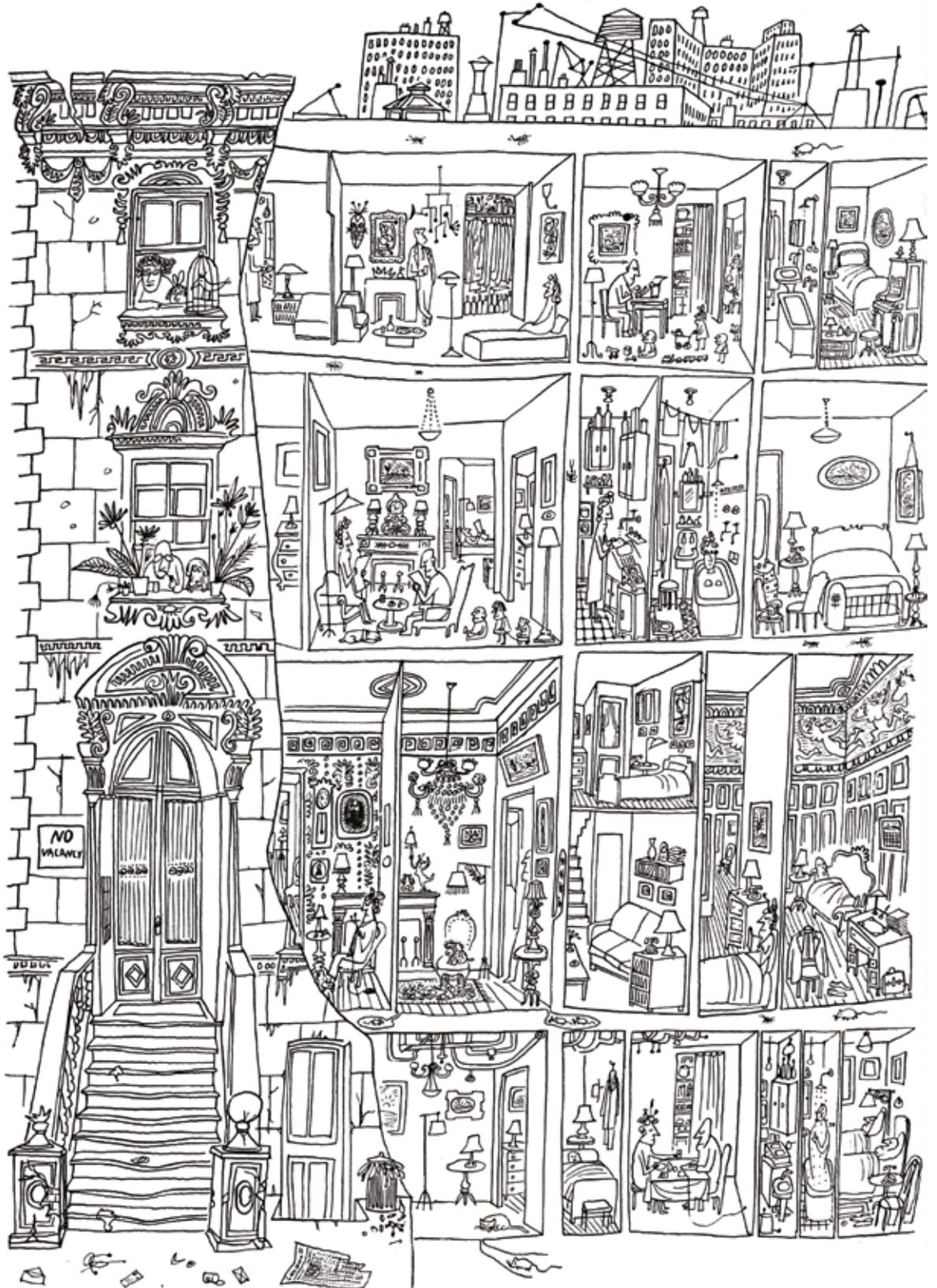


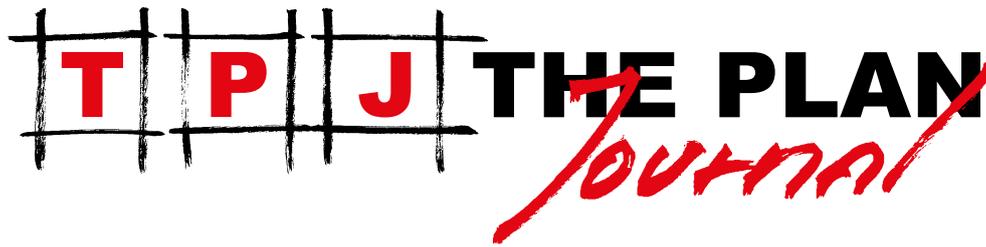
T P J THE PLAN *Journal*

RESEARCH IN ARCHITECTURE DESIGN AND URBANISM



On the cover: Saul Steinberg, *Doubling Up*, drawing first published in *Architectural Forum*, February 1946.

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THE PLAN Journal (TPJ) intends to disseminate and promote innovative, thought-provoking and relevant research, studies and criticism in architecture and urbanism.

The criteria for selecting contributions will be innovation, clarity of purpose and method, and potential transformational impact on disciplinary fields or the broader socio-cultural context.

The ultimate purpose of the TPJ is to enrich the dialog between research and professional fields, in order to encourage both applicable new knowledge and intellectually driven modes of practice.

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In This Issue [1/2017]

EDITORIAL

Maurizio Sabini

After a focused exploration on the research about “design for social impact” (vol. 1, no. 2), we return with this issue to an articulated set of investigations on a variety of topics. Yet, connections among the contributions are many, both within the issue and with past issues. In fact, Andreea Mihalache’s essay is ideally related to a couple of essays previously published on the *TPJ* (vol. 1, no. 1, by Paul Holmquist and Pasquale De Paola), as it continues to unfold the conversation on architecture’s “critical call” – a conversation that we intend to continue to foster through our journal also on future issues. Mihalache’s central argument (“‘critical architecture’ belongs as much to the territory of judging, as it belongs to the realm of imagination and invention”), intriguingly developed through a triangulation between Saul Steiberg’s “visual sociology,” the Khrushchev/Nixon “kitchen debate,” and one of Bob Venturi’s early works, becomes also a launching pad for Franco Pisani’s “dialoguing review” of Marco Frascari’s posthumous book, just recently published (*Marco Frascari’s Dream House. A Theory of Imagination*, 2017).

The narrative style of Frascari’s theoretical elaborations, refreshingly revisited by Pisani and suggesting the possibility of a new humanism for architecture, ever more necessary at a time of rapid technological advancement, is echoed by Will Alsop’s fascinating story of a place (Las Heras, Northern Catalonia, Spain). Part sentimental journey, part preservation project, part educational experiment, intertwined with provocative theoretical reflections, Alsop’s article shows us once more the importance of narration in architecture.

Surprisingly resonating with similar suggestions is the perspective offered by Serra Akboy-Ilk on measured drawings, discussed (using anthropologist Clifford Geertz' lens) as "thick description" of the complexity of meanings, procedures and protocols that one would not typically associate with that particular practice and technique. A complexity of socio-cultural meanings and influencing factors for the design process is also at the center of Luigi Vessella's discussion of a particular program type (the prison), architectural expression of an institution very much in need of reform, rethinking, and re-envisioning. Vessella's argument obviously relates also with the questions presented in our past issue on "design for social impact."

Broadening the scale and the disciplinary field of architecture, we offer also two examples of "reflective practice": a multi-scalar approach to an urban architecture of transport infrastructure that aspires to become an integrated hub for regional development (the new FVG airport in Northeastern Italy by Giovanni Fraziano, Claudio Meninno and their team), and a thoughtful exploration (by Elisa Izquierdo Garcés) at the intersection between architecture and landscape design, for a visitor and research center in the "extreme" territory of the region of Aysen in Southern Chile. In particular, Izquierdo Garcés' research circles back to "the question of place," raised in the opening article by Alsop's narration, and it shows us, once again, how a site (paraphrasing Mario Botta), through design, can become a place.

Las Heras: An Imagined Future. Stories of an Emerging World

NARRATION

Will Alsop

ABSTRACT - The estate Las Heras lies close to Girona in Spain. I was taken there by my client, in the form of a mystery tour. We arrived at a large house within 350 hectares. I felt instant affinity to this place before leaving the car. I asked my client: "Why did you buy this?" He answered: "...that is YOUR project – to tell ME!"

The land exuded a sense of place which appeared irrational. Time and neglect had taken its toll on the main house and work began to repair the building.

The estate has a long and tumultuous history; the past informs the present and creates context for the experience of the place. The future required a possible description. A narrative (novella) was an indulgence that allowed exploration of what might happen in the formation of the place. The book exists as a plan, a gazetteer volume of information, and a cookbook, intended to stimulate and encourage.

The emerging project's starting point is as an educational resource for anyone; particularly for architectural and art institutions.

Keywords: narrative, memory, place, design education, Las Heras

The house and terrain are beautiful. I had noticed that whenever I took someone to visit, they each loved it. There is something about this place that allows people to succumb to some natural sense of being without question. It was perfect and yet the question arises, what to do with this empty place? I am an architect and for some time it has worried me that architects, with

one or two exceptions, are expected, or expect themselves to do something architectural. Hence the urge to do nothing was as strong as ever. This Arcadian paradise should not repeat history of Eden. The sin of improvement should not be committed here, as I increasingly believe in other places. The world lies at the mercy of the architectural industry and architects, amongst others. Architecture offices are often judged today on the quantity of their output. Offices are more global and many grow by acquisition. This is a business and has nothing to do with architecture. It is a world led by accountants not art. Add to this phenomena other words like “placemakers,” “urban designers,” “space analysts,” etc. and the pressure is to make “stuff,” “alter things” and destroy. How many sins are committed by the single word “regeneration”? How do you breathe life back into an empty house? The original part of the home is 1,000 years old and right up to the beginning of the twentieth century it was added to and adapted. A lady of the original family lived in the home up until 2007 at which point she decided through age and remoteness that she should sell and move out. She moved abandoning the estate to fend for itself and swearing that she would never return. The home has stories...

“WITNESS TO HISTORY” by J.J. Caballero

When the first stones were being laid to build the walls of the Masía de Las Heras, a powerful culture was developing a couple of hundred miles to the North: that of the Cathars, with ambitions to spread across Europe. Another couple of hundred miles to the South, roughly along the natural borderline created by the River Ebro, the land was held by the Muslims. And just a short distance from the *masía*, on this side of the Pyrenees, the counties created by Charlemagne were becoming more consolidated. They were to give rise to what was known as the Marca Hispánica; the buffer zone between the Muslim and Frankish empires.

The birth of the masías

Las Heras formed part of what is known as Catalunya Vella, or Old Catalonia: the land that lies to the East of the Llobregat river. It was here that a type of building known as a *masía* was developed, featuring certain characteristics of which Las Heras is a prime example. One only has to look at its south-facing semi-circular arched doorway with its well-defined, perfectly fitting voussoirs that have stood the test of time for hundreds of years.

The main façade was always south-facing, to maximise the light and warmth of the sun on its journey from East to West. For the same reason, particularly in the Empordà region and other areas close to the Pyrenees, the doors and windows on the Northern facade were small, to avoid drafts created by the strong, chilly Tramontana winds that come down from the mountains.



Fig. 1



Fig. 2

Figures 1 and 2. Las Heras, views of the complex.

These farmhouses were traditionally austere in appearance. Local stone was used and it was only carved when used around windows and occasionally, as cornerstones. Las Heras is mostly built from sandstone, a very hardy material, although it can be subject to wear and tear due to the effect of rain, cold and wind. Indoors, the floor was paved with stone, but the size of the original slabs inside Las Heras is quite extraordinary. In very few places can one see paving stones of this size, some of them one metre

by the name of Boquica. During a raid on the house, he hung the owner over the fire to force him to reveal the whereabouts of the family jewels and other valuable items. Miquel Heras died twelve days later as a result of the serious burns he suffered.

The last golden age

The twentieth century saw Can Heras's final moments of glory, but also times of great sadness: the Spanish Civil War and the decline of the farmhouses and their lands. In the early years of the century, the roaring twenties, big parties were organized at the house. The guests would arrive in Canet in their impressive cars and elegant attire, but from there they had no option but to walk the rest of the way to the house. Sometimes, very finely-dressed women would arrive alone. In the surrounding villages, memories remain of those parties... and those ladies.

Childhood memories

María Heras's childhood memories are still very much alive. They are the memories of a time when "everything seemed wonderful

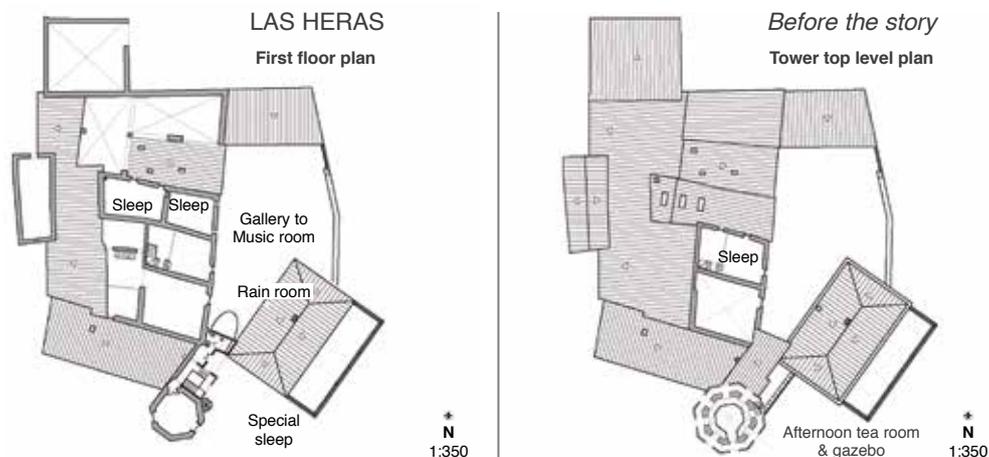


Figure 4. Las Heras, plans. © aLLAlsop Research.

to me". "We'd wake up with the sun and go out, barefoot and in our nightgowns, to pick fresh figs. Yes! In our nightgowns! The whole estate was ours, you see. We'd walk four kilometres from one end to the other. Sometimes we'd go and listen to a man at Can Brugada who used to tell us stories about Cuba. He'd spent a few years there. They used to call him "the godfather of Can Brugada." His surname was Noguer. He wore the traditional Catalan hat and red sash around his waist. He had about twenty sheep. "Ship", he'd say.



Figure 5. Las Heras, Medieval Festival.



Figure 6. Las Heras, pool.

Living history

The Heras family name will die out with the current generation. But the story of the Heras de Adri house will remain alive. In 2008, the estate was bought by Alexander Kurt Engelhorn with the intention

of returning the house and the neighbouring farmhouses to their original splendour. He was also determined to use the land for farming again.

Stone by stone, the walls are once again being built, the damaged elements are being reinforced and flooring, thresholds and window frames are being renovated. Paths that were once hidden by the vegetation are being re-opened. Seeds are being planted. It is a slow, manual process as befits a property that is a thousand years old.

Alexander Kurt Engelhorn aims to restore Can Heras and its surrounding farmhouses (Can Bailo, Can Pustis, Can Manel and Can Blanc) to their original condition. When it comes to the main house, more recent add-ons must be removed and some ruined elements must be rebuilt. But of the smaller farmhouses, only a few stones are left: they had been engulfed by the forest. There were even trees growing inside them. The stones are scattered all around. If there is a corner left standing, that corner will be taken down and re-built. The stones will be laid in exactly the same



Figure 7. Las Heras, windows.

position they were in. This job can only be done by hand, with the utmost respect to the legacy left by earlier generations. This way of working is a perfect example of Alexander Kurt Engelhorn's outlook on life: "If I can't do something extraordinary, I'd prefer to do nothing at all." (J.J. Caballero ¹)

Doing nothing is an idea that is usually associated with eastern religions, although not exclusively. Cedric Price gave me many bits of advice amongst which was “never take a decision until you have to.” I think it true that as one gets older decisions are harder because you know more about the potential disaster of making a choice. By doing nothing, sometimes the need to act disappears anyway. What I find important in Las Heras is making no definite plan. Parts of our world are destroyed by masterplans.

The key word is evolution in a natural way that avoids preconception. After some thought and discussion it was decided to make an educational programme, which would allow students to visit and make additions to the land. The house would provide a place of retreat and sustenance, the land a canvas of possibility. The world of architectural education is confused and needs a place for students to escape to help free them from a zone of attempts to educate them.

I have to indulge hereinto my own reflection on the state of education. I find generally a huge ignorance about architecture and history in particular. Architecture today is a reflection on the current condition of success being based on notoriety and no depth of connection. We are not here by accident and I think it is important to try, even in vain, to understand the world that made you what you are and might become. I have often asked architects, and students, if they have ever had an architectural experience. Most look mystified! I admit that these occasions are quite rare, but are important to connect the architect to a sensation without intellectual filter. The chapel, by the architect monk Van de Lum in Holland was one of these experiences for me. The space, light and volume immediately touch you and you know all is well. This experience is not something you can teach. One can only hope!

There is no correct age at which to qualify although a number of regulatory bodies think there must be. This attitude does little more than produce “CAD fodder” for the increasing number of large commercial offices. These students have an architectural qualification but they are not architects. I am looking for someone that has soul. These true potential architects are quite rare, but are not as uncommon as we might think. I do know that they are not produced out of the masterclass system, where well known figures teach a number of students to become and produce work just like themselves; flattering, but not useful to the student. Some institutions organise themselves into “units,” with Unit Masters. Generally these people are relatively young, because that is less expensive, and are looking for a celebrity status, which I understand but should be avoided. The projects set reflect the search that the Unit Masters are exploring and the work done by the students is the Unit Master’s thinking and not the aspiring young architect. Of course a few (the best ones) revolt and maybe praised or rejected. It’s a risk of life!



Figure 8. Will Alsop at Las Heras, August 23, 2016.

HOW TO TEACH? NO MANIFESTOS!

Las Heras has, in my mind, an important contribution to make which might go towards answering the question. There was initially the automatic response to a large tract of land occupied by one dominant house and five ruins and that was to do a masterplan to try and pull some vision of a possible future out of a chaos that appeared to reign. I was charged by the person who had bought it to tell him why he had bought it. This was my challenge. Many would see this as some luxury retreat for the rich and you could do that. My client is more interesting than that.

Masterplans are dangerous. They have become over the last three

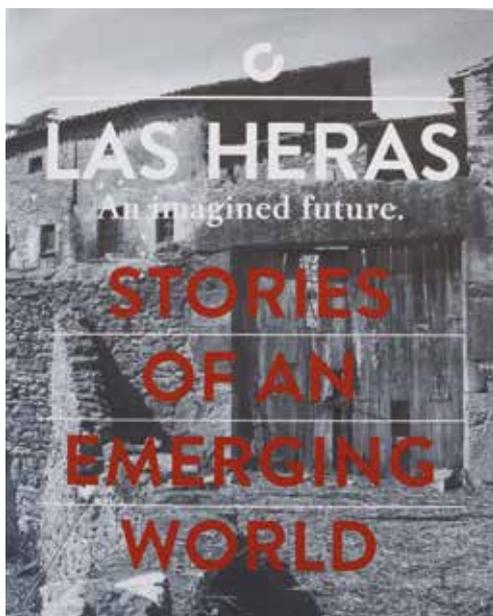


Figure 9. Will Alsop, with J.J. Caballero, *Las Heras: An Imagined Future*, ed. Nancy Alsop, London: John Rule 2014. Book cover.

decades a piece of work that is rarely realised. They tend to be political and marketing devices that are often so banal that the more mindless they are, the more they are applauded. If they contain any ideas, those jewels of possibility are edited out to avoid any debate or discussion. On sizeable projects this process is carried out by committees of ever-increasing size. For example the masterplan for the London Olympics has resulted in a public place (a park of some quality) which has to be approached via a huge shopping complex! This is not an idea of any worth and is certainly not beautiful. The more I consider the future of said futility the more I arrive at the concept of “evolution” and never taking decisions before you have to.

At Las Heras there is already an accumulation of stories. The facts are called history and the tales are myths. All contribute to the ambiance of the place. Even without knowing any of these the visitor is already attuned to their existence, even to the point of making up their own fictions as they wander through the buildings and the land. This is, I believe, true of any place in the world and it is the memories of the place that is as easily destroyed by the masterplan.

This thinking has led me to consider the concept of never knocking down any buildings because by doing so you destroy memories and stories. Instead it is possible to extend, build over, repair and add to the existing. This is an evolutionary approach that if adopted would lead to a diversity of experience; physically, visually and psychologically within our towns and cities that will preserve our heritage and sanity. It also challenges that other word which leads to boredom – context.

It was necessary at Las Heras to give an idea of change without planning it. For this reason I decided to write a short novel which would describe a possible future without determining it. Words are more open than drawings and plans and allow other people to invent in their imagination. The book is now published, entitled: *Las Heras – Stories of an Emerging World* (Fig. 9).

The book evolved beyond the novel into a history plus a number of appendices. The latter ones catalogue the flora & fauna and also include a recipe book of dishes that can be created from ingredients that can be found on the land. It is, I hope, a “useful” book and is intended as a companion to the visitor.

To start the process of evolution, beyond some essential repairs, we decided to initiate an education programme open to all schools of architecture in the world. For those that wish to participate we provide accommodation, in a dormitory, food and wine, all for a modest fee. The students are asked to explore the terrain and find a place where they wish to construct an edifice that is capable of being slept in and that will last at least five years. It should be constructed of materials

that can be found on the site although not exclusively. We can accept up to twelve students for a week, Work stops at 8pm daily – showers taken followed by supper and entertainment. In our experience the group working together find things out. Apart from “fun,” which is a prerequisite of all activities, their perception of the term luxury is challenged.

TIME IS FINITE

It is true that apart from the mattresses, the comforts are basic, but a combination of working (together), making and laughter is a rare convergence and that is the essence of luxury. Style is all too often confused with “taste” (“good taste!”). Lashings of taupe, marble and extremely expensive taps are the product of marketing, industry, mass production and magazine promotion. None of these things have anything to do with “style.”

Style prevents good architects and designers to evolve. For example David Chipperfield is a good architect but is trapped by the architecture he is producing. If he changed to a more exploratory mode he would lose some of his customers. Patrick Heron, the painter, was trapped into stripes for decades, subtly changing from hard edge to soft. There was a market for his work, but in his eighties he became free and in the final decade of his life produced some of the most beautiful, interesting and intriguing works. The idea of style is pernicious and is essentially a lazy, but convenient way of proceeding. It is our intention at Las Heras to free visitors from a sense of what should be done, to one of discovery. Invention and joy are the two highest priorities. By working in small groups no one person is allowed to retreat into their own form of expression. When I used to teach sculpture at the St Martin’s School of Art in London, the biggest problem we had with students was that they thought they were already artists and they had a preconception of what an artist was and how an artist behaves. Drinking too much and out of the studio fitted in this self-image. By creating a course based on points for attendance and group working which allowed time to observe others working we had some success. In reality only ever 10 % would become artists, which is, in my view, an achievement. Las Heras works in a similar fashion. It is not “my” work but “our” work and therefore turns out to be a surprise for all. In this way I feel it makes a significant contribution to architectural education. There is a lot of building about! Not much architecture.

*Following page: poems written by students at Las Heras.
Text continues at p. 14. - Ed.*

*Poems by founding students of the London School of Architecture,
during their residency at Las Heras, Summer 2016*

We Have Been Weaving

We have been weaving.
Bending, folding, reaching, crouching,
Ducking, dropping, eating, sleeping,
Cutting, sawing, breaking, swearing.

In and out of winding roots,
See small wonky windows to other
Worlds.

There are 100 ways to fix
A to B,
[Everything is woven]

We have been weaving.

(By Milly Salisbury, Las Heras, July 2016.)

Morning Greetings

Morning greetings, morning meetings, morning eating
Bamboo fetching, structure testing, sun resting
Form making, water sating
Tree chopping, mosquito swatting,
Nest weaving,
Don't want to be leaving

(By Maeve Dolan, Las Heras, July 2016.)

Die Gedanken sind frei

*1. Die Gedanken sind frei, wer kann sie
erraten, sie fliegen vorbei wie nächtliche
Schatten.
Kein Mensch kann sie wissen, kein Jäger
erschießen es bleibe dabei: Die Gedanken sind
frei!*

(Aus dem deutschen Lied)

*2. Ich liebe den Wein, meine Freunde vor
allen, sie tun mir allein am besten gefallen.
Ich bin nicht alleine, bei meinem Glas Weine
meine Freunde dabei: Die Gedanken sind frei!*

Thoughts are Free

1. Thoughts are free, who can guess them,
They fly past like night shadows.
No one can know them, no hunter can shoot them
Keep it: the thoughts are free!
(From the German song)

2. I love the wine, my friends before all,
They do me the best.
I'm not alone with my glass of wine
My friends: The thoughts are free!

(By Timm Lindstedt, Las Heras, July 2016.)



Figure 10. Las Heras, students from the Technische Universität, Vienna, summer 2016.



Figure 11. Las Heras, students from the London School of Architecture, summer 2016.

At Las Heras we have a carpentry workshop and soon ceramics and a blacksmith. To get one's hands dirty is part of the act of discovery. To understand the difficulties of making a timber joint is a part of understanding how the built world comes into existence. Gardening is allowed. To experience what you build, to perhaps make love in the discovered edifice is an important part of the whole experience. Architecture is a strange art as during the education process everything is communicated through drawings, paintings, films, models and words. All are some approximation of an imagined future. Unlike art, when you stop working on it, it is finished. At least until the next day when you might decide to do more – or stop. Architecture is never, or rarely resolved because it is too expensive and, particularly today, too risky. The student and teacher are usually denied the actual experience. Ultimately space can only be a phenomenon to be felt. The Las Heras land is intended to help in this regard.

There are many huge issues to be dealt with within architecture. Climate Responsibility, Social Impact, Beauty, Health & Safety, Digital Banality Etc. Etc. but in reality many of them are not seen to be the direct responsibility and it is certainly true that very often clients do not wish their architects to think too deeply about these issues as there are often cost implications. We must remember we can always say no!!! I do understand that in the near future, much of our work can be executed by computer programmes directly linked to automated systems in factories, but in this case society has to decide if the product is good and whether or not it solves the problems that exist. These systems will provide building and shelter, but will it be good enough?

Architects worship the new – quite rightly – but sometimes at the expense of their own self-worth. They were amongst the first to recognise the idea of pre-fabrication and miniaturisation to solve the housing crisis that we find in many countries today. The micro flat often smaller than a caravan, but no advantage of having wheels (snail syndrome) is a solution. More technology packing in less and less space. Space is the great luxury and too little space results in bad behaviour. By reducing the home to affordable product raises many questions beyond the social acceptability. If it proved popular, and it might, out of desperation, it would start to be manufactured by large industry. Similar to a car product, the variations, with the exception of price, will be negligible and certainly would not require the skills of an architect. I am not sure that globalisation is either good for the environment or society. The production of homes has nothing to do with architecture. The act of making a home, or feeling at home, is a part of architecture. I think to be able to build what you like, wherever you like is important. The act of making creates within itself a sense of place. It might not involve architects either, but traditionally the architect did not concern

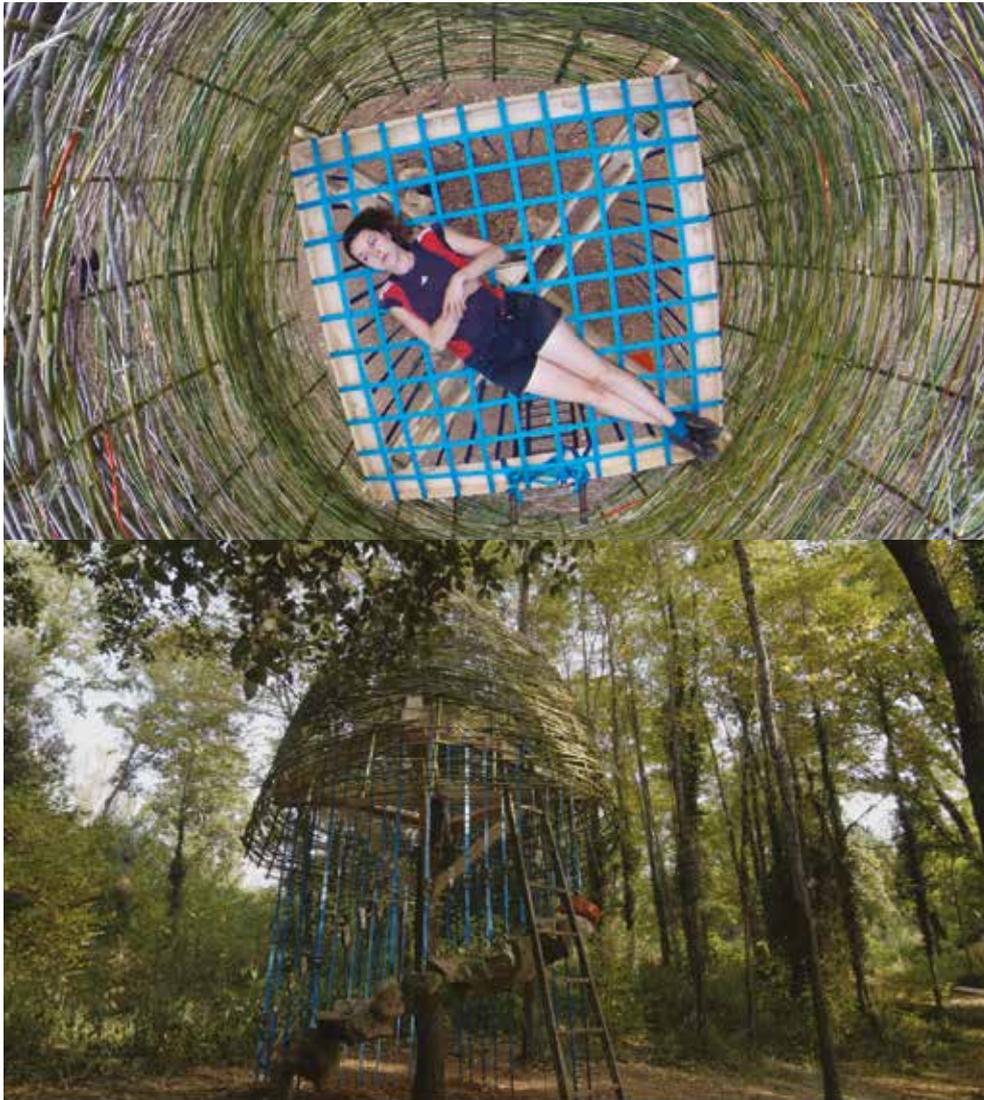


Figure 12. Stills from the film *Las Heras*, by Savage Mills: <http://www.all-worldwide.com/how/movies/>.

themselves with housing but only the individual house and civic buildings. Now there are too many architects to be sustained by such a reduction in workload.

So what?

Las Heras is a perfect place to make and take ownership. It is beyond architectural criticism. Criticism by its very nature is comparative and as such must divide the work into various factions in order to make a judgement. This necessity leads to an ossification of styles and methods which actively leads nowhere. I find it strange that in art the curator has become the artist and the artists are merely the medium through which they try and establish their own importance. In architecture the journalist has become critic and the critic an historian, which of course is a form

of status inflation, which allows non architects to become more involved in decision making than the architect. The architect and the artist are demoted to a medium that allows others to speak. At Las Heras no-one decides – it happens!

I have no doubt that robots will make many architects redundant in the very near future. It is a death of one of the arts and sciences which no doubt will be regretted and mourned. Obviously, robotics will not only create redundancies in architects but also many other sectors of work. Good news for venture capitalists with fewer troublesome staff to worry about, but also maybe good news for society. At last a release from drudgery and tediousness. I have never really understood why workers would strike for the “right to work.” Maybe in future the “right not to work” will be the cry. Society must prepare itself for this new condition. I assume that the number of people will rise, unless mass genocide is an option, which it is not. To live without work, in the traditional sense, will require a very new approach to living; needing money, education, wisdom and spirit of useful disobedience. Las Heras is such a place that might exist to allow a discovery of peace, responsibility, farming and an air of contentment. All these things will be necessary. Come & explore!

Awards

This essay was awarded Honorable Mention at the 2015 THE PLAN Best Paper Award contest. – Ed.

Notes

1. J.J. Caballero, "Witness to history," in Will Alsop, with J.J. Caballero, *Las Heras: An Imagined Future*, ed. Nancy Alsop, London: John Rule 2014.

Credits

Kurt Engelhorn

Extracts from the book: Alsop, *Las Heras: Stories of an Emerging World*, 2014.

Historical account: JJ Caballero

Poems: students of the London School of Architecture

Images: students of LSA and TU Vienna; Savage Mills; Will Alsop; aLL Design

Sketches: Will Alsop

Illustrations: (within the book): Abi Daker

Book design: aLL Design

More on Las Heras

Film by Savge Mills: <http://www.all-worldwide.com/how/movies/>

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ALL DESIGN website: <http://www.all-worldwide.com/what/master-planning/las-heras/>

Will Alsop, OBE, RA, is a prominent architect and artist, and Director of "aLL Design," which he established in 2011. He was awarded the RIBA Stirling Prize for Peckham Library, London and the first RIBA World Award for The Sharp Centre for Design (OCADU), Toronto, amongst numerous accolades for a multitude of projects. His core values are innovation and expression with an emphasis on enjoyment - his practice is founded principally to "make life better."

He sits on architectural advisory boards for Wandsworth and Kensington & Chelsea Councils and is Professor at the Technische Universität, Vienna, and Professor of Architecture at the School of Architecture, University for the Creative Arts – Canterbury, UK.
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The Act and Art of Architectural Critique: A Drawing, a House, and a Sign

THEORY

Andreea Mihalache

ABSTRACT - The role of criticism is not to split, but rather to bring matters together in an assembly. Philosopher Bruno Latour makes the argument that the responsibility of the critic, (and, implicitly, critique), is not to divide, but instead to “offer the participants arenas in which to gather.” In light of Latour’s proposition, I will examine the generative and creative role of architectural criticism and some of the many guises under which it might take shape. I propose that the critical call of architecture is often hidden in plain sight in works that camouflage themselves under seemingly disengaged positions, and which, upon closer inspection, act as resources of architectural imagination. Specifically, I examine Saul Steinberg’s drawing “Doubling Up” (1946), the Splitnik (the American model-house showcased at the American Exhibition in Moscow, 1959), and Robert Venturi’s sign for the Grand’s Restaurant (Philadelphia, 1961-1962)

Keywords: critical call, Bruno Latour, Saul Steinberg, Splitnik, Robert Venturi

The role of criticism is not to split, but rather to bring matters together in an assembly. Philosopher Bruno Latour makes the argument that the responsibility of the “critic,” (and, implicitly, “critique”), is not to divide, but instead to “offer the participants arenas in which to gather.”¹ In light of Latour’s proposition, I will examine the generative and creative role of architectural criticism and some of the many guises under which it might take shape. I propose that the critical call of architecture is often hidden

in plain sight in works that camouflage themselves under seemingly disengaged positions, and which, upon closer inspection, act as resources for architectural imagination.

To “critique” – a word whose Greek etymological root refers to *judgment*, but also to *art* – is to dissect the most intimate relationships at work in a body of knowledge.² Born into an architect’s family, the ancient Greek physician Galen had described the common roots of anatomy and philosophy as the act of cutting through a body or through knowledge itself. To cut through a body – architectural or otherwise – is to dissect and unfold the intricate layers of fabric that make that body. When the 1598 edition of the Florio Italian-English dictionary translated *critica* as an “arte of cutting of stones,” it suggested a material grounding of an act – “critique” – commonly construed as a pursuit of the mind.³

Latour argued that “the critical mind, if it is to renew itself and be relevant again, is to be found in the cultivation of a ‘stubbornly realist attitude’... but a realism dealing with what I will call ‘matters of concern,’ not ‘matters of fact’.”⁴ Following the Heideggerian distinction between “things” (such as handmade jugs) and “objects” (such as industrially produced Coke cans), he proposed to collapse the two notions and transform the “objects” into “things,” or in other words, bring together the “matters of fact” (the cans) and the “matters of concern” (the jugs). Latour described the two contradictory positions prevalent in contemporary criticism as the “fairy” and the “fact.”⁵ From the “fairy” position, critics show that material entities do nothing by themselves and it is people who project onto them their own desires. On the other hand, from the “fact” position, critics show that people’s behavior is determined by exterior forces or matters of fact. Latour distances himself from the phenomenological position, which would only further reinforce the rift between objects and things, and advocates for what he calls a “fair” position in which “the critic is not the one who debunks, but the one who assembles,”⁶ and, I would add, brings forth the creative role of criticism.

The first instance of an architectural critique that, I argue, nuances Latour’s position, is:

CRITIQUE AS “DISSECTING”: SAUL STEINBERG’S *DOUBLING UP*
(1946)

Saul Steinberg’s drawing is a critical piece in that “third fair way” described by Latour that brings together “matters of fact” and “matters of concern” (Fig. 1). Moreover, it is the very act of critiquing that becomes fertile ground for the imagination.

Saul Steinberg spent the first nineteen years of his life in Bucharest, the capital of his native Romania, where he entered the university studying philosophy and letters. In 1933 he left for Milan to study architecture at the Regio Politecnico. In Italy, Steinberg built a reputation as a cartoonist

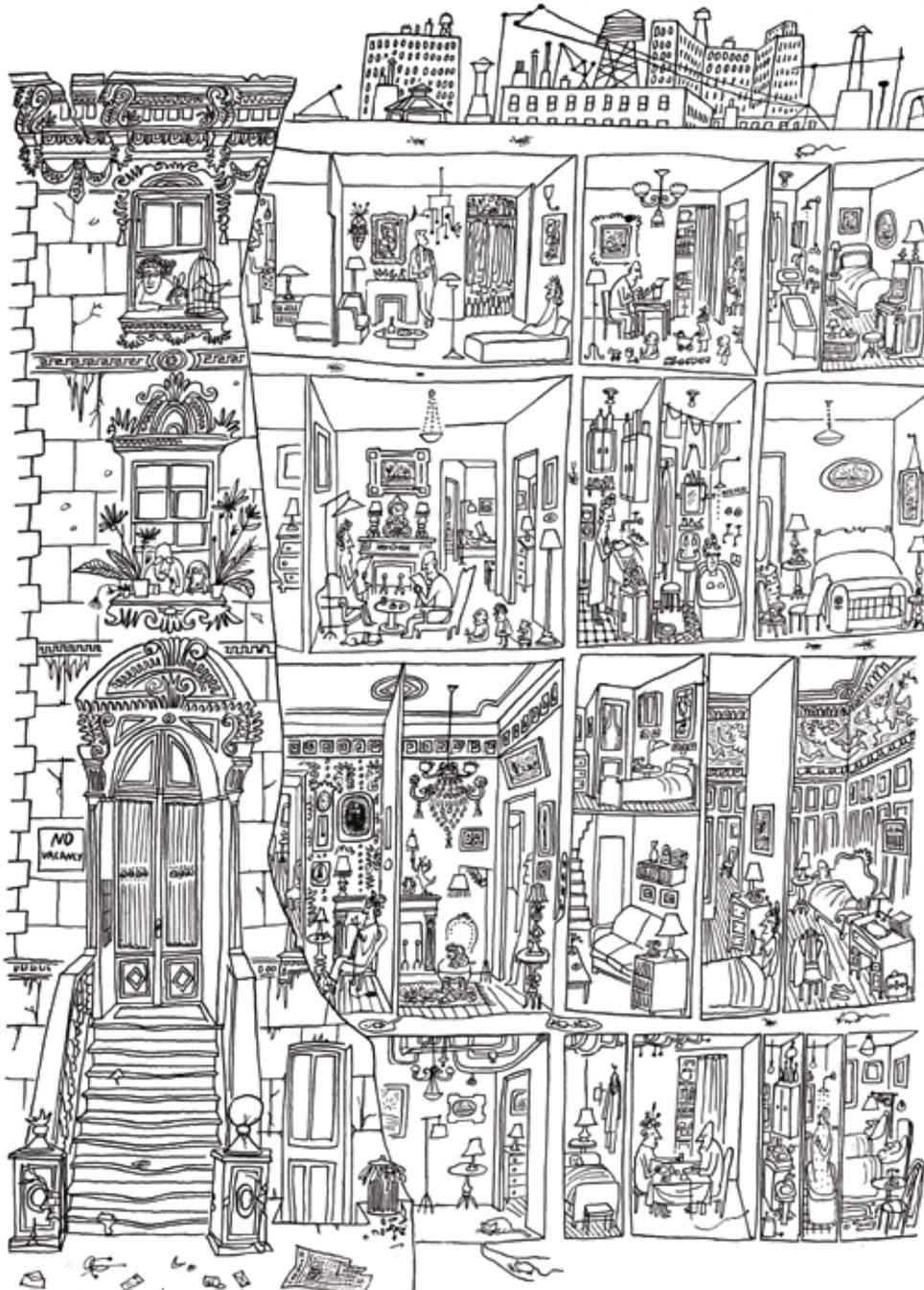


Figure 1. Critique as “dissecting”: Saul Steinberg, *Doubling Up*, drawing first published in *Architectural Forum*, February 1946.

for *Bertoldo*, a humor newspaper that welcomed young artists and writers. Beginning in 1938, he was subject to Mussolini’s anti-Semitic racial laws and tried to find refuge in another country. By 1941, he was sought by the police as a stateless foreign Jew with no rights to remain in Italy. On April 27, 1941 he turned himself in and was taken

to the Italian internment camp of Tortoreto in the province of Teramo. After six weeks of internment, he managed to obtain the necessary visas to fly to Lisbon and board a ship to New York in transit to the Dominican Republic, for which he had a residency visa. He stayed for a year in Ciudad Trujillo before getting a US visa. He spent the rest of his life in New York City and produced a body of work that ranges from regular contributions to *The New Yorker* and other magazines, to gallery and museum art in a wide range of media, as well as murals, fabric designs, stage sets, and advertising art. Difficult to place under a particular movement or genre, Steinberg's art escapes categories and reflects upon issues that cover various topics and scales from common places, stereotypes, and details of everyday life, to warfare and modern alienation. A particular feature of his art is its structure, which constructs a narrative specific to architectural works.

In 1946 Steinberg contributed four drawings over four issues of *Architectural Forum*. One of the drawings, originally titled *Doubling Up*, was reprinted later, in 1949, in *The Art of Living*, a collection of drawings in which Steinberg explored the many forms of domesticity and ordinary life. *Doubling Up*, I argue, offers an insight into what I call "architectural critique as 'dissecting'." Modern architectural drawing conventions would identify this piece as a sectional perspective that cuts through the building and removes a part of the front wall, which allows the observer to enter and glance into interior spaces generally inaccessible to strangers. Similar techniques of representation have been used in the past as a way to display ruins or demonstrate the multiple layers of a building. Andrea Palladio in his *Second Book of Architecture* draws an elevation-section of his Villa Rotonda that simultaneously shows the outside and the inside of the house.⁷

Steinberg's drawing shows the elevation of an eclectic apartment building with part of its façade stripped off. We see the steps leading to the entrance, the main door, ornate windows each framing one or more residents watching over the street. But most of the façade is removed, the building is cut wide open, thus uncovering intimate scenes of domesticity: children playing, adults sleeping, eating, drinking, bathing, reading the newspaper or knitting. There is, however, little or no interaction between them; even when more than one person inhabits the room, people are hardly looking at each other, seemingly avoiding eye contact or communication. The levels correspond to the hierarchy of the Italian *palazzo*: the *piano nobile*, higher than the other floors, exhibits heavy furniture, decorated moldings and friezes, while the basement and the two upper levels present more modest, if more "modern," tastes. The cracks in the floor slabs allow mice and insects to colonize the unseen parts of the building. The tension between the cat in the basement and the hidden mouse about to emerge from a hole in the floor constructs a more vivid, if amusing, interaction than among humans.

A curious scene unfolds on the rooftop: the skyline seen in the background – anonymous high-rises, water towers, chimneys, and antennas – seem to be standing “on top,” rather than “behind” the building in the foreground. The remote things of the city look like scaled-down versions of themselves, objects populating the landscape of the rooftop in an *avant-la-lettre* Unité d’habitation. The anonymity of these distant objects hovering above the private rooms heightens the sense of alienation already present in the interior scenes, where people appear to be lonely even when sitting together at the table. Tension is building up between the attic and the *piano nobile*, the fragmented interiors and the impersonal skyline, the inside and the outside.

Steinberg’s drawing has inspired Georges Perec’s novel *Life a User’s Manual*, as well as his shorter piece “The Apartment Building.”⁸ Perec observed the people, rooms, and objects in the drawing, accurately counted them, and transcribed the inventory.⁹ His descriptive technique cuts even deeper into the flesh of the drawing as it sets, in fact, the premises and foundations for future stories. Steinberg has confessed multiple times that he saw himself as a writer rather than an illustrator and instead of aligning himself with the artistic genealogy repeatedly suggested by critics – Paul Klee, Willem de Kooning or Pablo Picasso – he preferred “the company of writers whom he finds far more congenial.”¹⁰

But to come back to what I’m doing: Mine is a sort of literary work. ... Where do my ideas come from? Well, it’s like what a good writer does. He writes down a word and then cancels it. Then he puts down a second word and cancels that one too. He goes on and on cancelling. ... That’s how it’s done. ... The problem I have is that I have to reinvent my *métier* practically every day, because whatever is being left behind cannot be redone, mostly because it doesn’t give me enough pleasure. The real pleasure is the invention.¹¹

Latour’s matters of fact, literally the “objects” of everyday life and the “characters” of everyday life, are here both matters of fact “and” matters of concern. The drawing is almost tediously descriptive, but upon a closer look the description itself has a richness and depth that fuels one’s imagination. The cracks and the mice are cracks and mice. However, the latter do not simply populate, but also gradually erode the flesh of the building. People crammed in tiny spaces have their own stories to tell, but far from exhausting them, the drawing invites the viewer to construct and complete them. The spectrum of the big city penciled on the rooftop of the building haunts the lives inside the building, rendering them insignificant. Though different, people look alike. Key to reading the drawing is the “No vacancy” sign by the entrance, which tells us about the character of the edifice – rental apartments – but also signals that inside and out the building is full of people and stuff. However, despite its fullness, it remains empty because there is no real life inside.

Almost literally cutting open the building, the drawing evokes the Late Renaissance tradition of Andreas Vesalius, who in the sixteenth century published an anatomical treatise (*The Edifice of the Human Body*) roughly at the same time as Sebastiano Serlio published an architectural one (*The Seven Books of Architecture*). Both treatises were showing the making of a body – human or architectural – and the architectural section became an anatomical dissection that revealed what was hidden behind the surface, the unseen strata of our bodies. The practice of dissecting a building is also seen in Palladio's drawings. It proposes a simultaneous view of the inside and the outside which is not only explanatory, but, more importantly, creative, as it allows for further connections and associations to occur.

Steinberg's drawing requires the viewer's active imagination and critical thinking to go beyond the obvious, the banal, and the mundane, while it offers the tools to chisel the different potential narratives. Though not explicitly political, the drawing opens up questions about inhabitation, modern alienation, and estrangement, bringing together the close up and the far away, the most public and the most private, people and their artefacts.

The second instance of an architectural critique that brings forth Latour's position, is:

CRITIQUE AS "ORCHESTRATING": THE *SPLITNIK* (1959)

At the height of the Cold War, the United States and the Soviet Union decided to exchange international exhibitions that would highlight the various achievements of each country. In 1959 the Soviet exhibition opened in June in New York and the American one opened in Moscow in July. With their launching of *Sputnik* in 1957, the first artificial Earth satellite, the Soviets were ahead in the Space Race and felt compelled to display their scientific and technological progress. The Americans, on the other hand, chose a different approach and showcased the overwhelming abundance of consumer culture in its infinite forms. Charles and Ray Eames and George Nelson were instrumental in developing, designing, and implementing the overall concept of the exhibition, which included a dome by Buckminster Fuller (where the Eameses projected their film *Glimpses of the USA* on seven giant screens hanging off the geodesic structure), a glass pavilion by Welton Beckett (filled with consumer products), an architectural exhibit curated by Peter Blake, Walt Disney's *Circarama*, a fashion show, a packaging exhibition, and Edward Steichen's photography show *The Family of Man*.¹²

One of the highlights of the exhibition was a fully-furnished prefabricated house presented to the Soviet audience as an affordable option for average-earning Americans, such as veterans of World War II or steel workers.¹³ The State Department hired the designer Raymond Loewy

and the architect Andrew Geller to transform the original design of the architect Stanley Klein. The result was a single family, six-room house split in the middle by a corridor that allowed visitors to move through and peruse the interior.¹⁴ Furnished by Macy's, with appliances by GE, this cut-in-half temporary structure was dubbed *Splitnik* – a pun on the name of the Russian satellite and the English verb "to split" – and unintentionally provided the background for what came to be known as the "Kitchen Debate".

Vice President Richard Nixon traveled to Moscow for the opening of the exhibition and, while walking through the split house, engaged in a political dispute with the Soviet leader Nikita Khrushchev. The Kitchen Debate took place in the kitchen of the pre-fabricated house equipped with the latest appliances intended to simplify and improve the life of the American housewife: stove, microwave, dishwasher, washer/dryer (Fig. 2). Historians have noted that the focus of the debate, which appeared spontaneous, but had been, in fact, staged by the Americans, did not revolve around lofty issues such as the scientific, industrial or technological achievements of the two nations, but rather the virtues of domestic gadgets and their impact on everyday life.¹⁵ For Nixon, the house with its various furnishings and appliances epitomized the American Dream, freedom of choice, and the superiority of the American democracy. For Khrushchev, it was but another instance of capitalist futility, a non-sensical stage-set, and "an insult to our intelligence."¹⁶

The *Splitnik* proposes another, if inadvertent, instance of Latour's "third fair" way of critique. Physically sectioned into two parts, the house orchestrates a scene in the sense of preparing the grounds and constructing the circumstances for further events to take place. It is an ordinary house and a political statement. One of the most popularized photographs of the Kitchen Debate shows Nixon and Khrushchev leaning



Figure 2. Critique as "orchestrating":
The Splitnik (1959).

against the protective fence that was keeping the crowds away from the pristine model-kitchen. While the two politicians occupy the center of the image, another domestic scene unfolds in the foreground: a package opened on the table, different consumer goods on the kitchen counter, the door of the washer/dryer open as if the housewife has just stepped out of her domain. The table and the open door invite and tantalize, while the fence pushes away and restricts the access.

The architecture of *Splitnik* was based on a suburban house designed by the architect Stanley Klein for the home-building company All-State Properties. Documentary filmmaker Jake Gorst, the grandson of Andrew Geller, the architect who worked on the *Splitnik*, has identified *Splitnik's* predecessor as the still-existing house at 398, Townline Road in Commack, Long Island.¹⁷ It is not without significance that the *Splitnik* later inspired the design of the houses in a second-home community called *Leisurama* located in Long Island's Montauk region.¹⁸ Designed by the Raymond Lowey Corporation, the *Leisurama* model house was sold at Macy's in the basement of its New York store, and – not unlike the Moscow exhibition artefact – came equipped with everything down to china and toothbrushes.¹⁹

The *Splitnik* in the 1959 American Exhibition was grounded in specific historical and social circumstances and also had, if questionable, architectural consequences. Presented as a symbol of democracy, it became a consumer good and the model for worry-free, leisure houses. Essential to the viewing, the split in the middle was giving public access to intimate domesticity. The anatomical cut uncovered the physical parts of the body, its various gadgets and devices, but also American “and” Soviet dreams, the hope and desire for a life of comfort and prosperity, and an imagined better future. It did reinforce the political rift between two political regimes and their different types of propaganda, but also orchestrated the interaction between publics, consumers, media and designers. To the extent that the Nixon – Khrushchev argument was more or less improvised, the house unfolds the critical question of the accident and its relationship to the work – how can a work leave open the possibility for unplanned moments to occur?

The third and last instance of an architectural critique that brings forth Latour's position, is:

CRITIQUE AS “RESHUFFLING”: ROBERT VENTURI'S *GRAND'S* RESTAURANT (1961-62)

One of Venturi and Rauch's early projects was the remodeling of a family-owned restaurant in West Philadelphia. Catering to students, it occupied the unified ground floor of two adjacent row houses whose two upper levels were transformed into the family's apartment. A particular feature of the place was the bearing wall separating the two original houses that was to be integrated into the new design (Fig. 3).

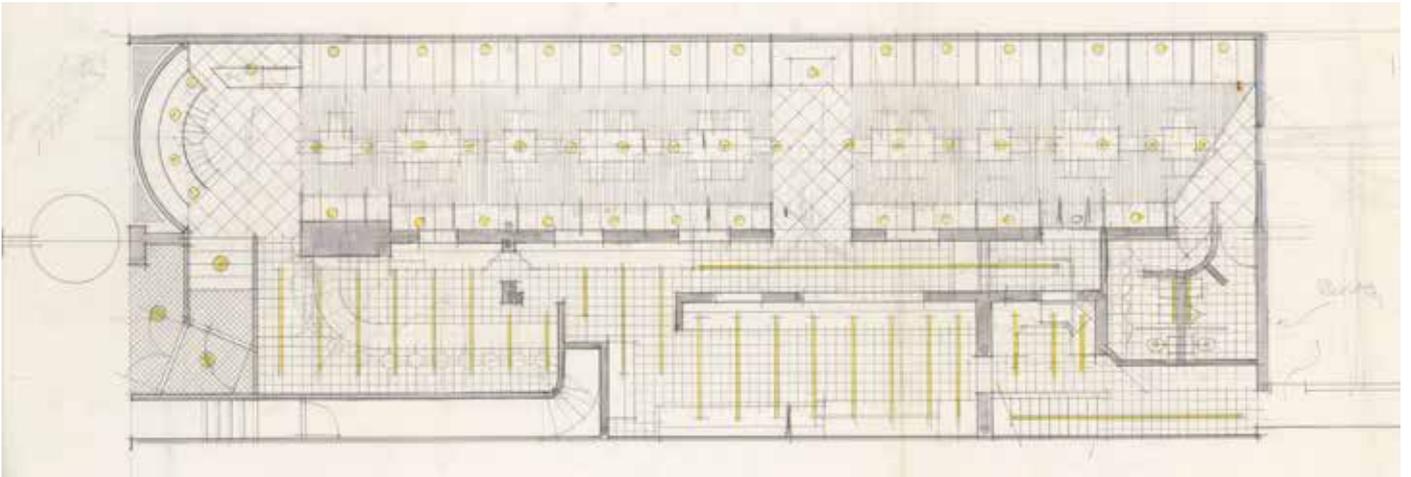


Figure 3. Critique as “reshuffling”: Robert Venturi’s Grand’s Restaurant (1961-1962).

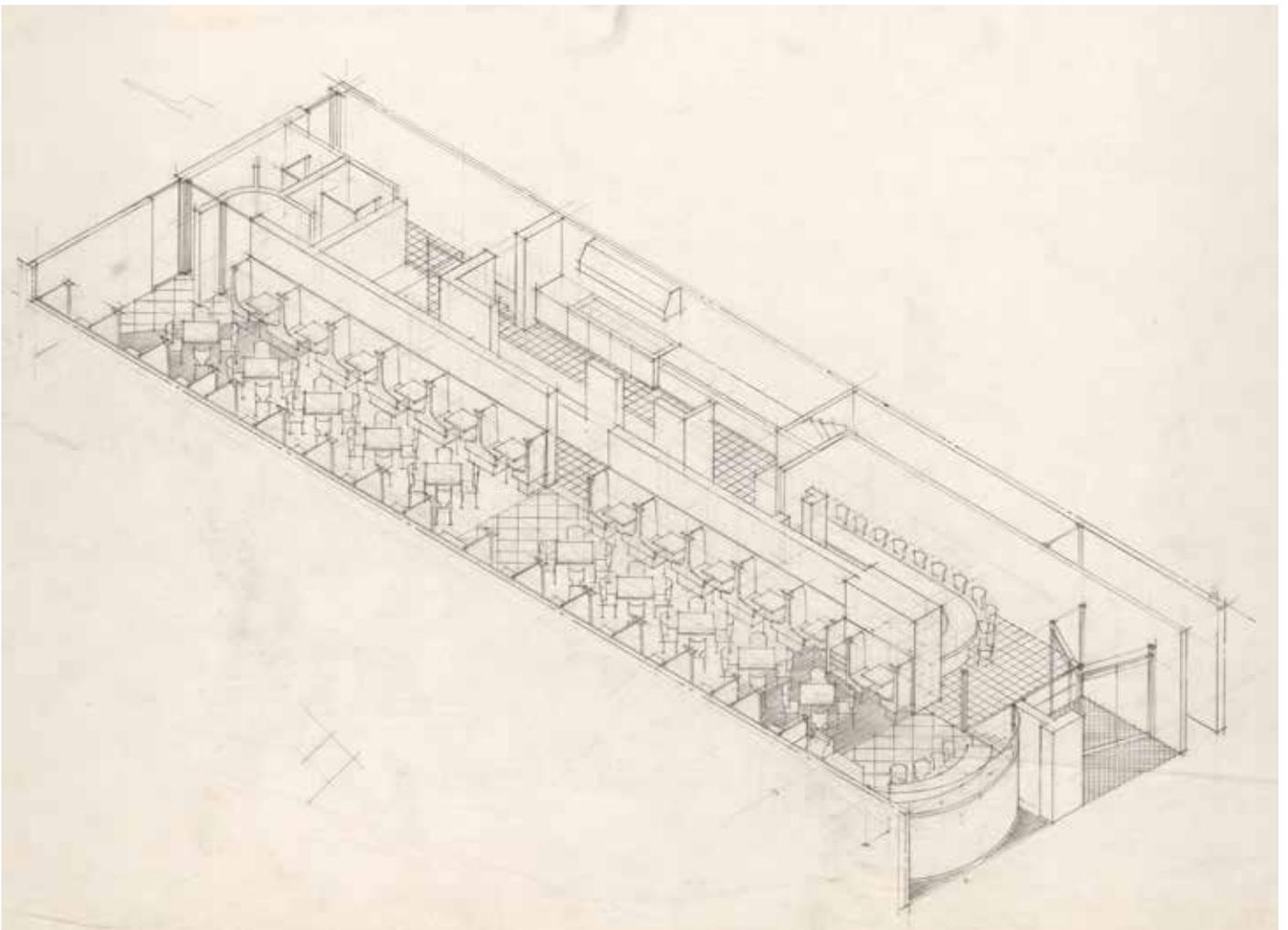


Figure 4. Robert Venturi’s Grand’s Restaurant (1961-1962).

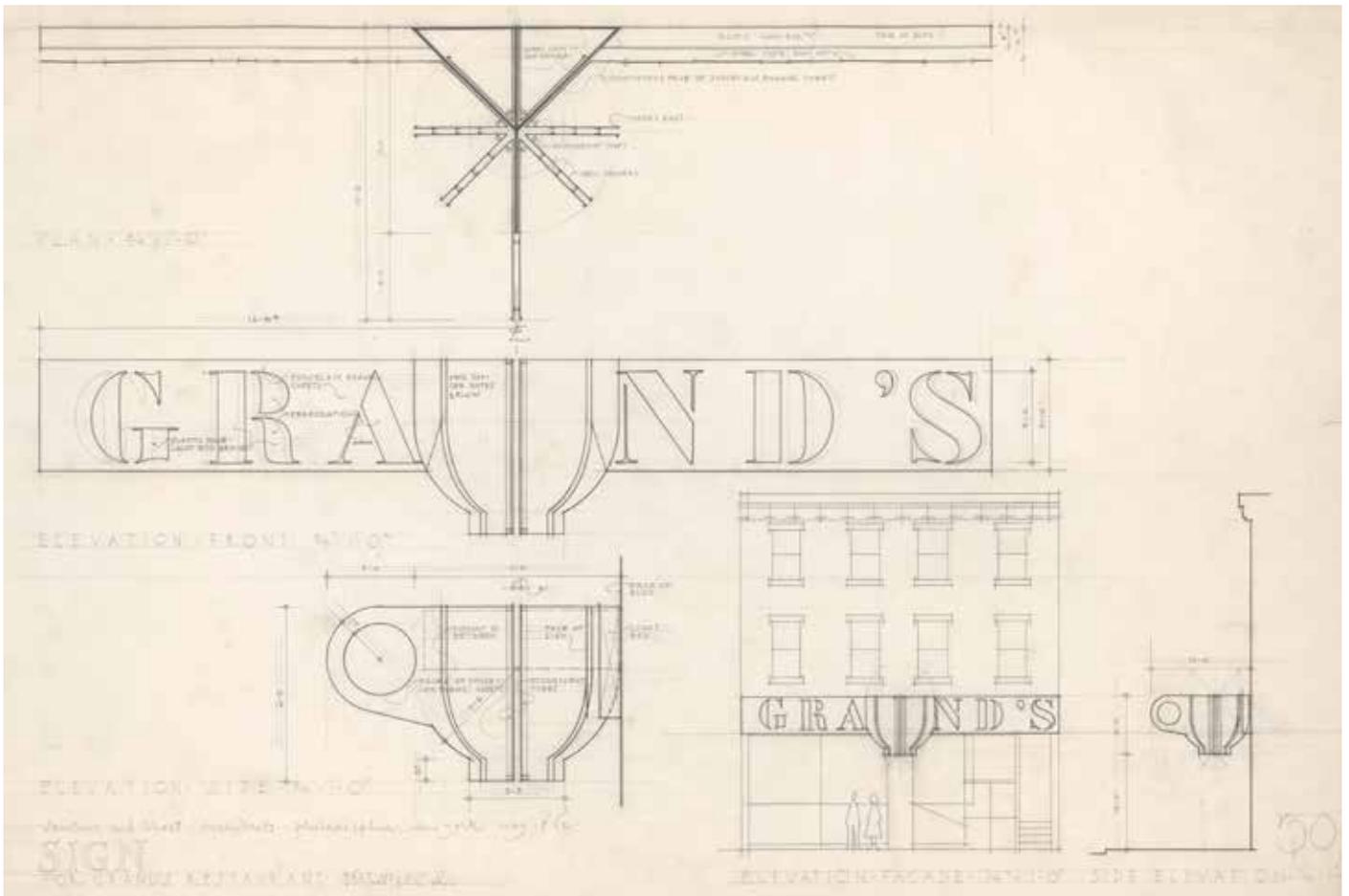


Figure 5. Robert Venturi's Grand's Restaurant (1961-1962).

For Venturi the project was an opportunity to work with some of the principles he later articulated in his *Complexity and Contradiction in Architecture*: elements that were both functional “and” decorative (A/C ducts), ordinary “and” fancy (Thonet chairs), cheap “and” elegant (industrial lighting fixtures), modest yet carefully designed (restaurant booths).²⁰ The use of conventional elements in a way that made them acquire new meanings in the new context, exercised the Pop Art strategies that the architect so fondly adhered to. Venturi explicitly explored “duality” and “unification,” best illustrated through the relationship of the central bearing wall with the new layout of the ground floor and through the exterior commercial signs on the building.

Deliberately marked on the front façade, the wall separates the west side of the restaurant, which accommodates the main dining area, from the east side that houses the kitchen, services, counter and entry (Fig. 4).²¹ On the upper level, the wall unifies the two sides of the dwelling unit and disappears in the rhythmical row of windows. Hand-written notes on the

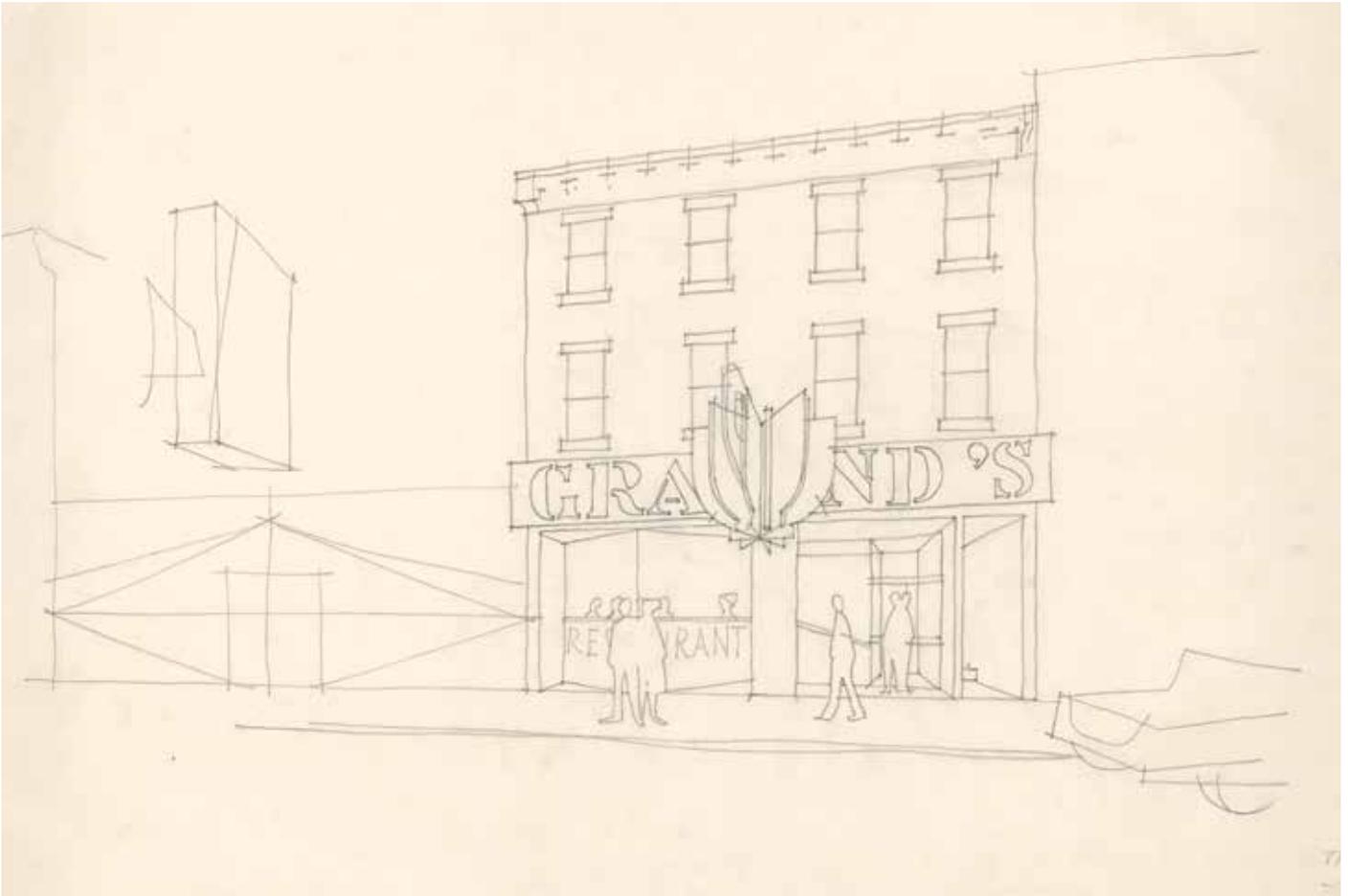


Figure 6. Robert Venturi's Grand's Restaurant (1961-1962).

construction documents give specific instructions for a unifying treatment of the interior and exterior surfaces:

Furnish notes. Second and third floors

Exterior

- Scrape + paint all windows and other existing woodwork
- Front façade: paint (enamel) all brickwork

Interior

- Remove all wallpaper
- Paint all [illegible] and plaster
- All new walls and partitions plaster except as noted
- Existing doors may be re-used²²

Venturi has traced various interpretations of "duality" throughout the history of art and architecture, from Piero della Francesca to Ellsworth Kelly. His approach to the design of Grand's restaurant echoes his reading, published

later in *Complexity and Contradiction*, of Louis Sullivan's Farmers' and Merchants' Union Bank in Columbus, Wisconsin where

The difficult duality is prominent. The plan reflects the bisected inside space which accommodates the public and the clerks on different sides of the counter running perpendicular to the façade. On the outside the door and the window at grade reflect this duality: they are themselves bisected by the shafts above. But the shafts, in turn, divide the lintel into a unity of three with a dominant central panel. The arch above the lintel tends to reinforce duality because it springs from the center of the panel below, yet by its oneness and its dominant size it also resolves the duality made by the window and the door.²³

Following the lesson of Sullivan, the distinctive feature of Grand's restaurant is the play between a porcelain-enameled sign at the level of the second floor that spells, while separating, the name of the restaurant (*Grand's*) and an over-sized cup marking the dividing wall on the main façade (Figs. 5, 6). The color scheme highlights the intended duality with half of the sign blue and the other half yellow, while the cup made of colored "slices" blue on one side and yellow on the other, makes the transition between the two colors.²⁴ The question of signs as decoration was a recurrent one in the work of the office and also part of contemporary explorations with lettering, stencils, and the ambiguity between words and images present in the explorations of visual artists such as Ed Ruscha or Jasper Johns. As "the function of this inscription is more ornamental in nature than informative,"

The information that comes across is the "sign-quality" of the bold characters as decoration – not the name of the establishment. In this way, the sign does ultimately follow the advertising principle of making a sign difficult to read to ensure that it will be read ...²⁵

Later removed from the façade, the cup was re-used above the portal of New York's Whitney Museum of American Art for the 1985 exhibition *High Styles*.²⁶

What else is there to say? Made transparent, the meanings of the work seem to have been exhausted. Everything appears to be clear. I argue that this piece accomplishes Latour's necessary "third fair" way of critique despite its being over explicit and for reasons different from the obvious ones. The wall does cut open the ground floor, it does separate and expose its different functions while at the same time bringing them together. The sign on the façade does unify the two parts of the building while being itself cut in two by the oversized cup, which, in turn, marks the original dividing bearing wall (rather than the entrance), thus completing the story where it started.

However, I suggest that these are not the main reasons that make the Grand's Restaurant intervention a critical piece. I propose that while the cup first appears as a "matter of fact," in Latour's terminology, a sign whose meaning is culturally determined, it also claims the territory of "matters of concern." It questions the relationship between signified and signifier in architecture and the validity of too explicit narratives. Critique as "reshuffling," in this case, does not infer that change in meaning occurs with the change in context or that double-functioning elements should be more present in the architectural vocabulary, to follow Venturi's rhetoric, but rather argues for a type of architectural narrative that leaves the story open to interpretations the same way the punch-line in a well crafted joke reshuffles, at the very end, the anticipated meanings of the story. "Reshuffling," I suggest, requires a form of critical imagination.

CONCLUSIONS

Though very different in nature as well as medium, these three pieces – a drawing, an exhibition object, and a commercial sign – show how the critical voice of architecture manifests itself as actively "dissecting," "orchestrating," and "reshuffling" conventional meanings and interpretations. All of them show how sectioning through a body (of knowledge or architectural) is essential to critiquing, however, they all bring together, rather than separate, people and artefacts, thus accomplishing Latour's third "fair" way that bridges the gap between "facts" and "fairies." And it is from the bridging of the gap, from the act of assembling, that the creative role of critique emerges. "Critical architecture," I propose, belongs as much to the territory of judging, as it belongs to the realm of imagination and invention.

Notes

1. Bruno Latour, "Why Has the Critique Run Out of Steam? From Matters of Fact to Matters of Concern," *Critical Inquiry* 30, No.2 (Winter 2004): 246.
2. Oxford English Dictionary: "critique."
3. Ibid.
4. Latour, "Why Has the Critique Run Out of Steam?," 231.
5. Ibid., 237.
6. Ibid., 246.
7. Andrea Palladio, *The Four Books of Architecture* (New York: Dover Publications, 1965; or. ed.: Venice, It., 1570), *Second Book*, Plate 12.
8. Georges Perec, *Life: A User's Manual*, trans. David Bellos (Boston: D.R. Godine, 1987) and "The Apartment Building" in *Species of Spaces and Other Pieces*, trans. John Sturrock (New York: Penguin, 1987), 40-45.
9. Perec, "The Apartment Building," 41-43.
10. John Gruen, *The Artist Observed: 28 Interviews with Contemporary Artists*, (Chicago: A Capella Books, 1991), 170.
11. Ibid., 167-168.

12. For more details regarding the exhibition and the "Kitchen Debate," see Beatriz Colomina, "Enclosed by Images: The Eameses' Multimedia Architecture," *Grey Room* no. 2 (Winter, 2001): 5-29.
13. Richard Nixon quoted in John W. Lerner, "Judging the Kitchen Debate," *OAH Magazine of History* 2, no.1 (Summer, 1986): 26.
14. Justin Davidson, "The Kitchen Debate's Actual Kitchen," *New York*, May 8, 2011 – Mitchell Owens, "How a Modernist Architect Shook Up the Hamptons with Funky, Low-Cost Vacation Houses," *Architectural Digest*, March 17, 2015.
15. Colomina, "Enclosed by Images," 7-10.
16. Nikita Khrushchev quoted in John W. Lerner, "Judging the Kitchen Debate," 25.
17. Davidson, "The Kitchen Debate's."
18. Davidson, "The Kitchen Debate's" and Jake Gorst's documentary *Leisurama*.
19. Ibid.
20. Robert Venturi, *Complexity and Contradiction in Architecture* (New York: MOMA, 2002 – 3rd edition), 112-113.
21. Ibid., 112.
22. Venturi and Scott Brown Collection, The Architectural Archives, U Penn. Box 225.I.A.6107.
23. Venturi, *Complexity and Contradiction*, 88.
24. Ibid., 112; Stanislaus von Moos, *Venturi, Rauch and Scott Brown: Buildings and Projects* (New York: Rizzoli, 1987), 299.
25. von Moos, *Venturi, Rauch and Scott Brown*, 52.
26. Ibid., 299.

Acknowledgment

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Credits

Figure 1. © The Saul Steinberg Foundation / Artists Rights Society (ARS), New York.
 Figure 2. © AP/ANSA.
 Figures 3-6. © The Architectural Archives, University of Pennsylvania by the gift of Robert Venturi and Denise Scott Brown.

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Crafting the Architectural Measured Drawings

THEORY

Serra Akboy-İlk

ABSTRACT - For centuries, measured drawings have been the major communication medium to acquire an understanding of the built environment and to deliver ideas of construction and design. The value of measured drawings as educational tools to learn about the architectural context as well as signifiers of the cultural values have transcended the importance of these two-dimensional illustrations as ephemeral depictions of building forms and materials. In the midst of an architectural culture increasingly utilizing three-dimensional virtual surrogates along with the state-of-the-art surveying and representation methodologies, however, the production of measured drawings have been relegated to a narrower focus in the documentation projects. The methodological path to produce measured drawings carries similar traits with how ethnographers create thick descriptions of cultural signifiers. Reflecting on measured drawings as an account of “thick description,” this essay addresses architectural documentation.

Keywords: measured drawings, HABS, surveying, laser scanning, Clifford Geertz

Architects' drawings, either focusing on existing materials or projecting imagined ideas, are analytical and interpretive. The process of drawing includes a mental cycle of documenting, seeing, knowing, and experiencing. The Italian architect Carlo Scarpa (1906-1978) famously stated that drawing allows him to see: “I place things in front of me, on

the paper, so I can see them. I want to see, therefore, I draw. I can see an image only if I draw it.”¹ Making drawings of the built environment, in this context, is often considered as simply a technique of basic visualization of the existing architectural fabric and a passive form of recording.² Drawing and documenting, on the contrary, have a long tradition in the architectural culture, which allow architects to conceive existing building forms and materials, and to develop design inquiries.

Even though associated with stark modernist design, Charles Edouard Jeanneret (Le Corbusier, 1887-1965), for example, distinctively emphasized the value of learning by measuring and drawing the existing architectural examples.³ The development of Le Corbusier’s distinct style stems from his travels to Europe and Mediterranean between 1907 and 1911, where he constantly made sketches of his surroundings. Le Corbusier’s passion of exploration of the pleasing spatial relationships as well as structural qualities culminated in a series of magnificent drawings of ancient ruins, details of interior spaces, and landscapes, annotated with careful notes and dimensions. In his writings, Le Corbusier even advised carrying a tape measure to check the prevailing geometric guides as the sources of architectural design.⁴ Le Corbusier’s sketches involve a process of abstraction of the inherent attributes of the architectural context, as investigations of mass, surface, and plan, articulated in his widely recognized book *Towards a New Architecture*.⁵

DRAWING THE BUILT ENVIRONMENT

In the architectural culture, two-dimensional measured drawings are the formalized product of documentation, which are produced for preservation pursuits. Measured drawings are made years after a building is constructed, showing the existing condition of the architectural setting at the time of documentation. Figure 1 illustrates a measured drawing of the Montezuma Castle, Camp Verde, Arizona, U.S. delineated in 2003. The elevation drawing shows a cliff dwelling, constructed by Sinagua people in the late twelfth century. Having a measurable record of the architectural heritage, such as the depiction of the vertical qualities of the façade of the castle, provides the information to understand the significance of the heritage fabric, to record the existing conditions of the asset, and to interpret the qualities for informed decisions on the preservation of the built environment.

Although Le Corbusier’s favorite recording apparatus of tape measure is still a part of the documentation toolbox, to provide an accurate measurable surrogate of the built environment, architects extensively use advanced recording and documentation practices. Methodologies such as photogrammetric devices, three-dimensional laser scanners, and total station instruments enable inquirers to collect highly accurate

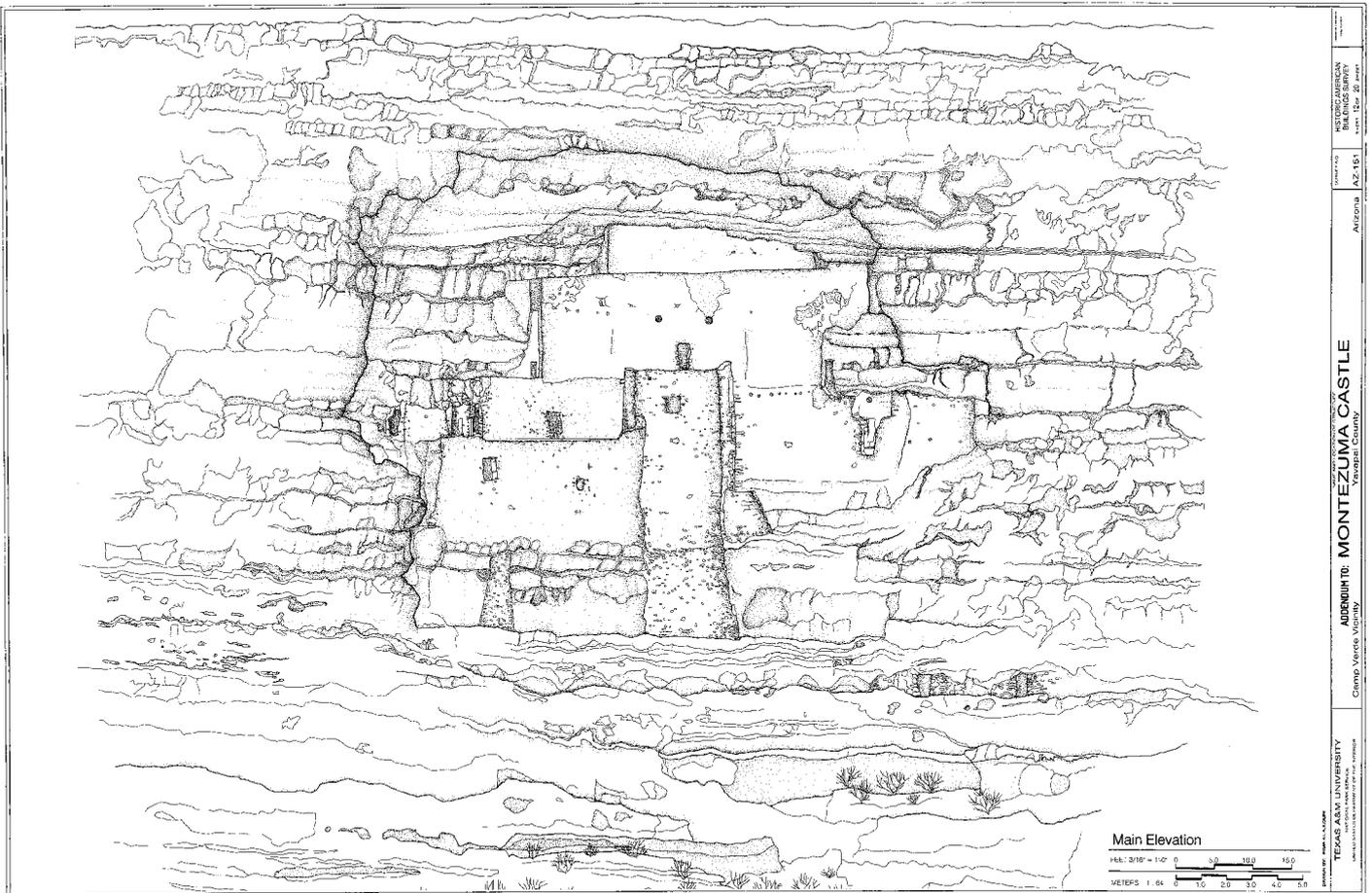


Figure 1. The elevation drawing of Montezuma Castle, Camp Verde, Arizona, U.S. (HABS ARIZ, 13-CAMV.V, 1- (sheet 12 of 20)).

measurements from the surfaces remotely. The exactitude of the digital field data has significant advantages in a preservation project because the virtual surrogate can be translated into different formats, such as a template for measured drawings, volumetric input for mass analyses, or metric data to calculate structural deformations. To collect measurements, moreover, considerably reduces the cost of the fieldwork since inquirers can undertake a building survey in a couple of days fieldwork compared to weeks long hand measuring.

While the benefits of advanced surveying technologies for the logistical and operational scheme of a documentation project are palpable, these applications culminate in a certain level of disengagement with the built environment. The automated collection of the digital data circumvents the creative process of making field drawings, which is integral for field analysis and discovery. Albeit the cognitive benefits of establishing a close relationship with the built environment through drawing, in the current practice, inquirers, physically removed from the building, allocate most of the field time dealing with the accompanying hardware and software achieve a digital surrogate of the architectural fabric.⁶ Through manipulating diverse system parameters, such as the location of the surveying stations or the absolute position of the digital survey points, architects negotiate the virtual surrogates to extract the information that meets the project needs.

To manipulate highly exactitude digital data corresponds to the desire to streamline the process of documentation and architectural production without human intervention. Digital tools can offer a seamless process of data gathering and production with minimal human error in data transcription and translation.⁷ The architectural thought has been preoccupied with the pursuit of objectifying mediums. Since the introduction of computers to the architectural practice in 1950s, for instance, the architectural thought has rapidly inclined to favor the elimination of the irrational and the personal in favor of a universally applicable system of principles and rules based on absolute certainties. According to Bruegmann, the computational operations performed on precisely selected and organized data were perfectly suited to a reductionist understanding of architectural production, “architects had been preparing themselves to welcome such a tool for two centuries. The exactitude of computers in relation to the processing of information, which is ultimately broken down into digital units, would finally eliminate all imprecise or subjective factors.”⁸

In the midst of the domination of the positivist and reductionist approaches in social sciences during the 1950s, Clifford Geertz formulated “thick description.” Geertz stated that a thick description of a social action enunciates not only the action, but its context too, in a way that the action becomes meaningful to an outsider.⁹ Geertz focused on the study of human beings and applied thick description to analyze, interpret, and document social actions as cultural signifiers. When *Interpretation of Cultures* was published in 1973, his book immediately recognized and became an ecumenical theory in social sciences to “free human inquiry from the killing grip of theoretical fixity.”¹⁰ Geertz was not against the scientific study of human beings that refuses counting or a structure, but he was opposed to the extensive use of objectifying methods of data collection or statistical records to develop generalizing accounts of the societies and to explain the underlying historical processes. Geertz firmly attested the generalization of social phenomenon across cultures, “[...] the essential task of theory building [...] is not to codify abstract regularities but to make thick description possible, not to generalize across cases but to generalize within them.”¹¹

Geertz elicited textual materials as the formal product of thick description. Ethnographers work in the field from months to years, observe the phenomenon in context, analyze their surroundings, distinguish the webs of significance embedded in the social actions, and reflect their analysis, observation, and interpretation through field journals, which culminates in formal types of publication of journal articles, books, and reports. Geertz’s seminal essay of “Notes on the Balinese Cockfight” in the *Interpretation of Cultures*, exemplifies the execution of thick description in an ethnographic study. Based on the fieldwork conducted in an Indonesian traditional village, in 1950s, the essay articulates the mean-

ing of cockfight in the Balinese culture. The text provides a detailed narrative of the cockfight taken place reflecting on the network of social relationships in kin and village that govern traditional Balinese life. Geertz draws the readers into the life of the village as if they are active participants in the events taken place. The readers vividly experience the anthropological discoveries unfolding through the essay, they also contextualize the rendered social acts in the webs of the social hierarchy of the Balinese culture.

Besides cultural texts, Geertz recognized other representation mediums as modes of thick description. Different communication venues including drawings, films, and museum displays correspond to ethnographic inquiries, yet self-consciousness about these norms lacks in anthropological studies. In this context, Bray's work on the art of naturalist–realist portrait painting to create “thick-descriptions” is one of the few anthropological studies dedicated to elicit the empathetic and sensitive process of long-term observation and contextual interaction in the process of painting.¹² Bray wrote that the methodological path of naturalist–realist portrait painting and the epistemological concerns during the process carry similar traits with anthropological analysis, which “serve as a method and ‘text’ in its own right for anthropological analysis.”¹³ The act of knowing, seeing, and interpreting during the making of a naturalist–realist painting includes a contextual interaction between the painter and the model correspond to the pursuit of contextualizing of social acts in ethnographic work.

Making drawings of the built environment comprises of various levels and sources of interpretation, not unlike empirical and participatory observations in thick descriptive naturalist–realist painting. The act of drawing is a generative process, which is achieved through numerous long sittings in the historic context, allowing architects to relate to the cultural heritage. Architects establish a deep relationship with the architectural fabric over the course of documentation, while analyzing, observing, measuring, and interpreting. Inquirers grasp and render many qualities of the historic material, such as texture, poignant climates, and experiences, which cannot be represented in texts.¹⁴ The final product of documentation, measured drawing, is a “thick description,” since it is a dense visual analysis of the architects' accumulation of the prevailing building elements as well as reflection of their multisensory experiences of the architectural context. Drawing as a record of documentation, furthermore, affords the viewers to relate to the historic setting. It serves to portray the embodied meanings and values in the architectural fabric, but through architects' perception of cultural heritage.

Reflecting on the methodological path to make measured drawings of the built environment as an account of thick description, this essay discusses architectural documentation. The practice of documentation is

characterized by change, where technological shifts bring new heights to the execution of the fieldwork and to the nature of end products. Documenters utilize a wide circle of products (such as two-dimensional measured drawings, building information models (BIM), and fly-through videos) to meet the project needs. In a digitally crafted architectural culture, where the inquiries are measured with the exactitude of data and technological mediation, however, the act of drawing has been relegated to a narrower focus in the documentation process. It is very significant, therefore, to acknowledge the ramifications of how images of the built environment are created, whether drawing on a piece of paper or mediating through the-state-of-the-art surveying technologies. To look through a lens and to have a digital tool to “make” an image (like digital photogrammetry and three-dimensional laser scanning) involves physical detachment from the heritage setting. However, while making drawings in the field, architects enter a more direct and engaged relationship with the architectural context. The possibility of defining the act of drawing in architectural documentation through the lens of thick description provides a series of discussions of the *modus operandi* of recording the built environment. Turning back the clock for the architects by hand surveying the historic buildings and structures is a valuable pedagogical exercise but not realistic within the current workforce.¹⁵ The documentation practice has already transformed and the present workforce is already comfortable with the advanced technological mediums. To define the methodological path of creating thick descriptive measured drawings, both through analog and digital means, however, allows building a self-reflexive analysis of the craft of architectural documentation.

INTERPRETING THE THREE-DIMENSIONAL WORLD THROUGH TWO-DIMENSIONS

Merriam Webster’s states that a measured drawing is “an architectural scale drawing of an existing structure.” The measured drawing is a snapshot of the architectural context at the time of documentation, meaning that architects record the dimensional, material, and structural details of the building and delineate these qualities “true to nature.” Each drafted line in the plan drawing of the concession building located on the Liberty Island, New York City, New York (Fig. 2), for example, correspond to a cluster of measured points on a structural element, such as a wooden trim or a door opening, where architects carefully collected measurements from the historic surfaces and then transposed their notes to the graphical representation. Creating a commensurable medium of the historic building is the core of architectural documentation since the measured drawing set becomes the reference record for preservation projects. When rehabilitating the facility systems, repairing a historic material, or restoring the building to a significant phase in its life, professionals utilize the information provided through the measured drawings.

Deconstructing the built environment through two-dimensional mediums is a specific way of understanding the world. Formulating an image of the three-dimensional qualities of a building or site in two-dimensions necessitates projection the surface through plans, sections, and elevations. Architects are trained to create and to analyze depicting the space with two-dimensional drawings as a type of analogy. For example, the plan drawing of the concession building (Fig. 2) is an analogical representation of the real space, where the representation of the window in the plan does not resemble the real one, but gives an idea of its size, proportion, and layout in the room. In this vein, a section drawing (Fig. 3) is an imaginary vertical cut through the structure, which architects are educated to develop to disclose the vertical progression of spaces accompanied with structural details, interior decorative finishes, and relation of functions. Elevation drawings include more pictorial emphasis while illustrating facades, room elevations, and other vertical elements of a building (Fig. 1). These drawings show buildings as the architects see them, upright and straight ahead, but without perspective.

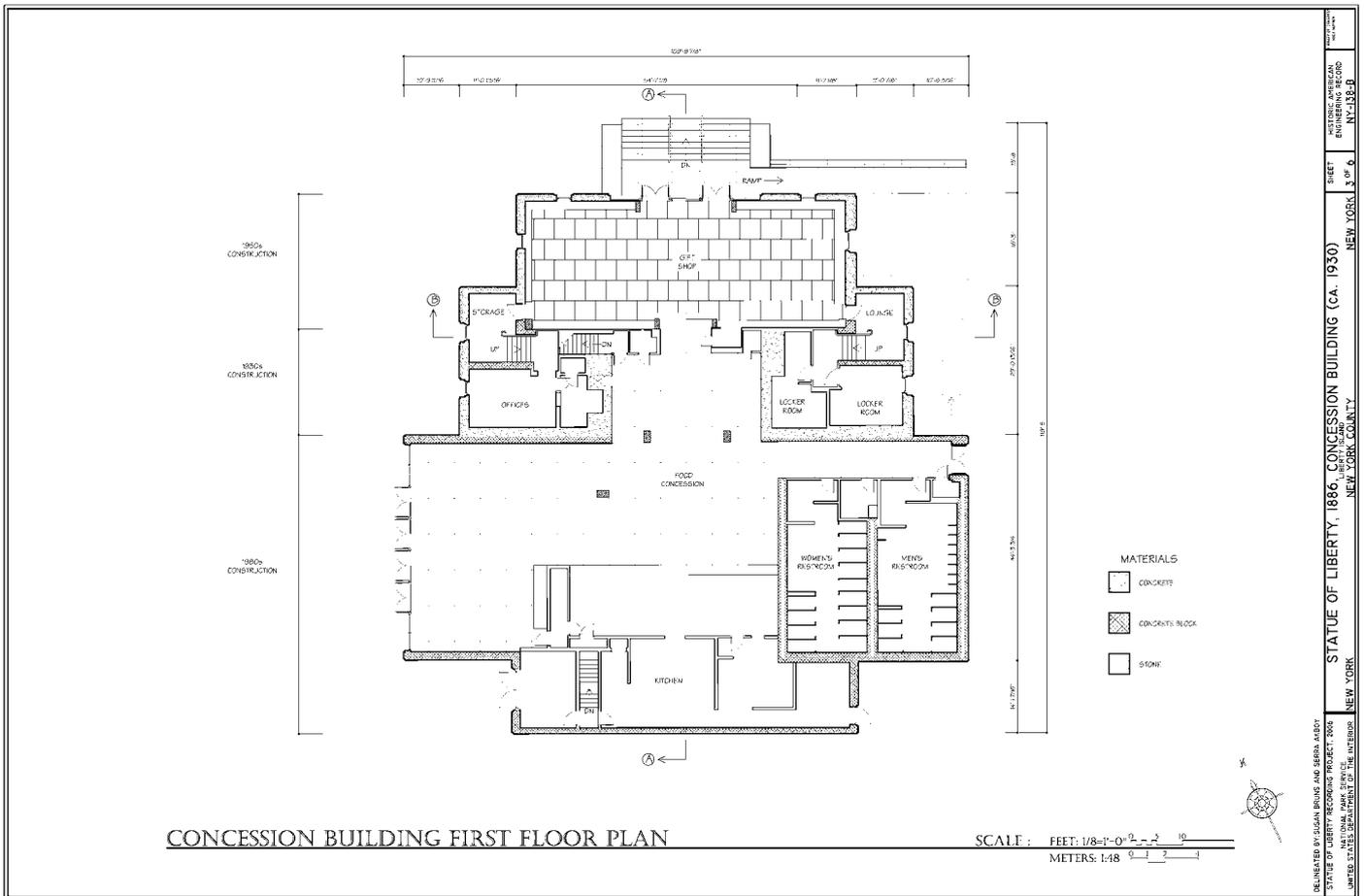


Figure 2. First floor plan drawing of the concession building, Statue of Liberty, Liberty Island, Manhattan, New York County, NY (HAER NY-138-B (sheet 3 of 6)).

The logical picture of representing the space through two-dimensional mediums is itself analysis and interpretation of the architectural context. The abstraction of the building through horizontal and vertical projections compels the architects to interpret the building characteristics while reflecting on the material, structural, and composition qualities coherently.¹⁶ The process of continually cutting through the building form and elements allows the inquirers to monitor the consistency of body of materials and ensures that no detail is omitted in the graphical representation. The methodological path of drawing forces architects to peel away individual qualities (such as a frieze detail, a staircase, or a porch) and to augment these characteristics in horizontal and vertical projections collectively. This cognitive process of analysis and interpretation through two-dimensional drawings is negotiated through being attentive to the dimension, proportion, and scale of the building features.

Bracketing building details through plans, sections, or elevations, furthermore, renders the architectural context accessible as a graphical account. Similar to Geertz' definition of thick descriptive textual material to dissolve the opacity of the social act, the two-dimensional analytical configuration provides a lens to "read" the architectural fabric. Both involve a process aims to acquire an intimate understanding of what lies beneath the skin of the subject, be it a social act or a building. Just as ethnographers study "a multiplicity of complex conceptual structures, many of them superimposed upon or knotted into one another, which are at once strange, irregular, and inexplicit," and render them through the line of writing; architects effectively capture the architectural, structural, and material qualities in a comprehensible form through two-dimensional drawings.¹⁷ The measured drawings, subsequently, frame the architectural context in a graphical record, which turn the unique visual presence of the building into an account that can be accessed, viewed, and interpreted.

INSCRIBING THE QUALITIES OF THE BUILT ENVIRONMENT

Identification and documentation of the building elements that make up the built environment necessitates that the architects understand the underlying socio-cultural ground and import embedded in the architectural heritage. A perceptive documentation project, communicates the structure's architectural character among its cultural importance. Inquirers, therefore, utilize multiple data gathering practices such as archival research, in-depth interviews, and questionnaires to be able to recognize the historical facts as well as the inherent values and meanings associated with the cultural heritage. The findings guide the architects to decode the architectural qualities within the cultural context they were achieved and allow them to make informed decisions about the content of measured drawings. Doing so, architects interpret

certain architectural elements that signify the cultural heritage (such as a detail in the roof-truss system, evolutionary change of a house, or circulation pattern in a school campus) and formulate the layout of the measured drawings (such as extent of the site plan, sequence of the section drawings, or development of detailed-drawings). Magnifying certain qualities of the historic property does not mean that architects have neglected some aspects of the heritage context; quite the reverse, the inquirers interpret that some details are more important to thickly describe the essence of the historic setting.

Geertz characterized written thick descriptive materials as inscriptions of the social act: “The ethnographer ‘inscribes’ social discourse; [inquirer] writes it down. In so doing, [the ethnographer] turns [the social act] from a passing event, which exists only in its moment of occurrence, into an account, which exists in its inscriptions and can be reconsulted.”¹⁸ Like inscriptions, measured drawings, are products of and reflect conventions for transposing the built environment along with the socio-cultural issues of events, persons, and places into graphical representations. In part, this transpose, involves inevitable processes of selection; architects delineate certain qualities of the architectural context and thus “leave out” others. For instance, the location of the section cut line in a measured drawing is crucial to reveal the characteristics of the building. While architects’ decision of the section line amplifies the structural elements that go along the cutting plane, with the same token it omits the rest of the components that fall behind.¹⁹ Therefore, more significantly, the measured drawings reflect and incorporate sensitivities, meanings, and understandings that the architects gleaned from studying the physical building elements as well as researching the historical facts. Given this, the measured drawings present or frame the buildings in particular ways, corresponding to the described events in its history.

In many cases, architects are tasked with interpreting a non-traditional character or intangible value associated with a building (such as distinctive features of a designed landscape, structural details not legible from the exterior of the structure, or an industrial process). In these instances, the formalized measured drawing set of plans, sections, and elevations may not be sufficient to convey the significant qualities of the heritage environment. Architects, hence, use interpretive drawings. These drawings complement the measured drawing set, but differ from the formalized plans, sections, and elevations since inquirers amplify a certain characteristic not visible to the naked eye or cross-reference associated materials in different drawings to narrate a process. Therefore, in order to maintain clarity, scale could be omitted from the interpretive drawing, where inquirers would pursue diagrammatic schemes, sequential maps, and perspective drawings.²⁰ An example of an interpretive drawing includes the axonometric

projection of the Delta Flight Launch Facility (Minuteman II ICBM Delta Nine) in the Ellsworth Air Force Base, South Dakota, where a minuteman nuclear missile was stored and kept ready for launching during the Cold War (Fig. 4). The drawing includes a sequence of axonometric drawings of the above and underground structures, which is not accessible to observe with the naked eye.

The arrangement of the existing buildings and structures in the form of a measured drawing is a mode of presentation, defined by Langer as “presentational symbolism.”²¹ Such pictorial elements present themselves as a whole and operate primarily through shades of meanings, nuances, and connotations that weave them together. In the context of the built environment of the missile facility, for example, the individual structures (the launch support building, the launcher, and the antenna) do not possess independent meanings, but can be understood in the extent of a nuclear facility. The axonometric drawing of the launch support building, consequently, reveals the mechanical, electrical and environmental control equipment: a diesel generator, power distribution equipment, and a fuel tank. These elements were vital to keep the launch facility operating continuously in the case of a nuclear threat. The form of the support building (rectangular in size) and the structural details (built of reinforced concrete), however, was utilitarian in purpose. A similar structure could have been constructed in another military installation and the equipment could be used as a power generator for a different mission. The elements (Fig. 4) of the missile launch complex depicted in the measured drawing, therefore, require to be understood as a whole, symbolized through storing, maintaining, and launching nuclear missiles during the Cold War.

The presentational abstraction concerns perceptual forms.²² These forms are non-verbal such as line, color, or sound. Such forms constitute the meaning of a symbol through articulated relationships portrayed in a work of art. A line, for instance, is not an independent unit of meaning, but a cluster of lines in a measured drawing symbolizes an arch, a roof, or a house. These individual elements fuse into a unity based on their function in the whole. Architects condense, magnify, or eliminate the perceptual elements as they revise the semantic boundaries of the architectural fabric. Doing so, they introduce a symbolic meaning to the presentational elements. Take for example the drawing sheet portraying the minuteman nuclear missile facility (Fig. 4). Each line is connected to another to form a total significance: to reveal the operating process of a missile facility. The meaning in this drawing is neither providing “as-built” depiction of the launcher nor supplying the technical details of the mechanical, electrical and environmental control equipment in the launch support building. The meaning, on the other hand, is the depiction of the specialized functions of the structural elements in a missile facility during the Cold War, which was juxtaposed on paper in a semantic order.

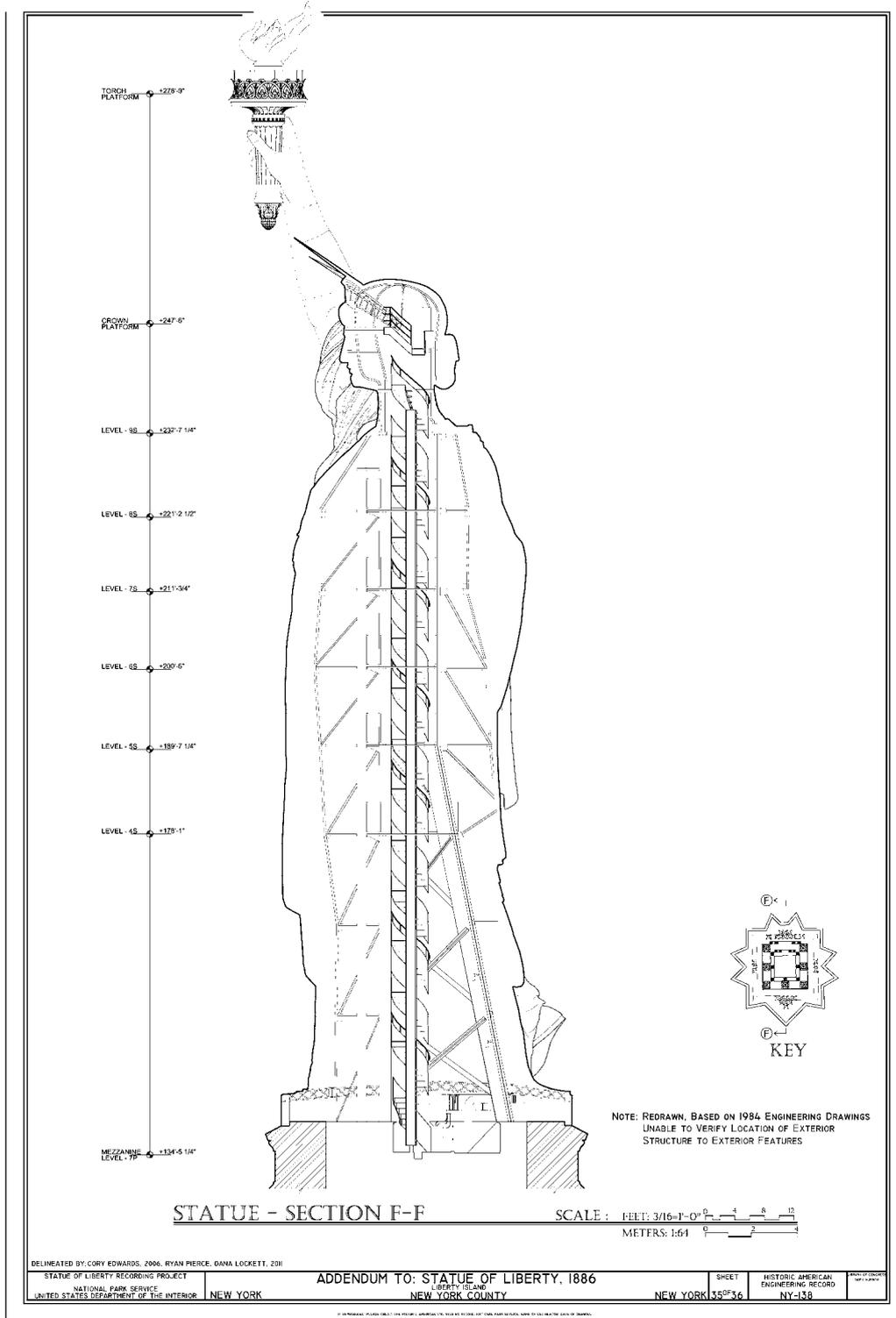


Figure 3. Section drawing of the Statue of Liberty, Liberty Island, Manhattan, New York County, NY (HAER NY,31-NEYO,89- (sheet 35 of 36)).

The paradigm shift in the documentation discourse from rendering the physical environment through the rigorously formalized as-built measured drawings to the analysis of an intangible character excluding metric information is no different than ethnographers' efforts to provide a thick description of the social phenomena while negotiating the basic analytical systems, refining them through their own observations, and rendering a fair description of the essence of the subject under investigation. On one hand, architects strive to achieve an objective analysis of the built environment using a mathematical prescription of plans, sections, elevations, where inquirers abstract the building materials to acquire geometric precision. Maintaining a level accuracy, accordingly, is utmost important since these records could be used as the basis for preservation treatments of rehabilitation, restoration, and reconstruction. On the other hand, architects correlate unique pieces of information together in a scholarly and interpretive manner, which portray qualities beyond the physical entity.²³ These two inquiries of the architects, however, merge with the aim to capture the key characteristics of the historic building and to reveal its unique visual presence.

When creating "thick descriptions," ethnographers have to negotiate their interactions with their informants to maintain a fair representation of the social phenomena. Ethnographers often carry out interviews that are semi-structured and open-ended, allowing informants to express themselves freely and elicit the issues significant for them.²⁴ Inquirers, while decoding informants' narratives, regularly reflect their own presumptions and methodical explorations, as well as field observations and analysis.²⁵ Triangulation information from different venues of inquiries focuses on finding multiple perspectives of the social phenomena, but emphasize the informants' narrative as the central place of the study. In these respects, the resulting thick description is a detailed account of the field experiences and interactions with the informants, in which the researchers reveal the patterns of cultural and social relationships and put them in context.²⁶

The equivalent to ethnographers' pursuit of amplifying the informants' input would be in measured drawings, the documentation approach of letting the building "speak to" the architects, rather than inquirers' putting their demands on the edifice.²⁷ During documentation, architects' first-hand experience with the historic building allow them construct a reading of the key qualities of the built environment. Since every historic building is unique, inquirers' direct observation of the architectural context culminates in utilizing the drawing methods they feel appropriate to dissolve the opacity of the resource. The elevation drawing of the cliff dwelling of the Montezuma Castle (Fig. 1), for example, demonstrates the structure within the natural alcove it is located. The monumental structure was built to make it difficult for enemy tribes to penetrate the natural defense of the vertical barrier. The delineator's careful use of drafting techniques such as stippling accompanied with intense shading and different line weights

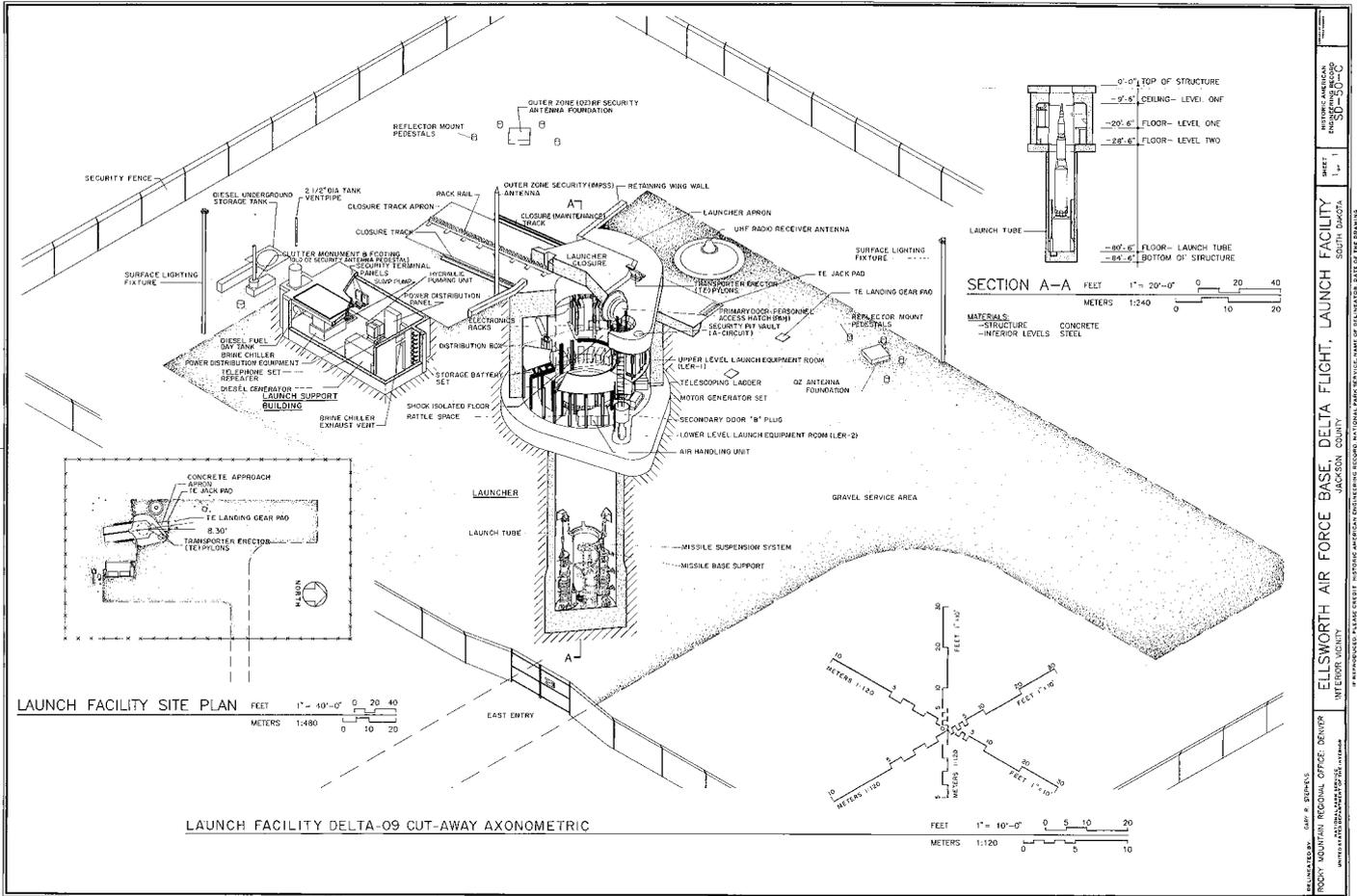


Figure 4. The axonometric drawing of the Delta Flight Launch Facility (Minuteman II ICBM Delta Nine) in the Ellsworth Air Force Base, South Dakota (HAER SD-50-C (sheet 1 of 1)).

captures the textural changes of this monumental dwelling and “brings forward” the dwelling from the rest of the cliff. The axonometric projection of the missile launch facility the Ellsworth Air Force Base (Fig. 4), on the other hand, focuses on the process of storing and launching a nuclear weapon, which characterized the armament deals during the Cold War. Rather than eliciting the architectural appearances, delineator carefully demonstrates the relationship between different buildings in the campus and gets the viewers eye inside individual facilities where the missile was maintained.

In both ethnography and architectural documentation, the thick descriptive records focuses on eliciting specifics of culture rather than searching for universal leads. Geertz firmly detested that ethnographers cannot make assumptions of the characteristics of the subject to construct general explanations across cultures.²⁸ Every society inhabits distinct worlds governed by different assumptions, concepts, and socio-historically constructed forms of life. The search for homogenized answers for cultural forms, meaning that applying objectifying reductionist research

methodologies to study human acts, would only provide an imperfect understanding of the phenomenon.²⁹ The plurality of human forms, such as art, architecture, politics, religion, ritual exchange, social thought cannot be relegated to an abstract universal definition. A distinctive characteristic of an art form, for example, is variously embedded in the collective social activities and forms of life that it shapes, but also by which it is shaped.³⁰

Similarly, during documentation, architects focus on the building. Every historic structure is unique and inquirers concentrate on the identification and documentation of the stratified changes occurred over the course of time. For example, the concession building on the Liberty Island (Fig. 2), built c. 1930s, at first sight, could be considered as a rudimentary architectural example to accommodate the needs of the patrons visiting the Statue of Liberty on the island. A closer look to the functional layout the building and the changes in material patterns reveal that, however, the current configuration of the historic building is a result of two major expansions undertaken in 1950s and 1980s. The offices and the locker rooms belong to the original building of the 1930s, whereas the gift shop expansion was executed in the 1950s, and the food concession accompanied with the restrooms and the kitchen were added in the 1980s. General assumptions of this property like stating its architectural form and pattern as common for each concession building or postulating its evolutionary pattern as the de-facto design of the entire architectural resources constructed in 1930s, cannot be made. The concession building has been distinctly shaped due to its existence on the Liberty Island and its accommodation of the visitors.

CRAFTING THE MEASURED DRAWINGS WITH TECHNOLOGICAL MEDIUMS

When making measured drawings of the built environment, architects use the artifact as the point of departure to put the historic building in context, to know more about peer resources, and how they relate to each other. To collect accurate data from the building surface, however, architects rely on technological mediums. The traditional toolbox of architects is no different than Le Corbusier's utilization of the tape measure, pen, and paper hundred years ago. To measure a colonnade, for example, the inquirer holds the tape measure against each feature on the surface and writes down the measurements on paper. In most documentation projects, the historic surfaces would not be level resulting that the inquirers cannot use the floors or the walls as the horizontal or vertical planes to gather the field data. Architects, subsequently, would establish datum lines and planes around the building. By leveling a taut string with a carpenter's spirit level around the structure, inquirers can establish the datum line to locate the measurement points geometrically. Often the datum box would be composed with right angles such that simplified drafting the details. Inquirers would triangulate a linear dimension or a line segment on the

historic surface using the position of the geometric points on the datum line.³¹ Within the known points of the datum box, architects would capture point positions and linear dimensions relative to building elements and other important dimensions on the structural surface.

The conventional approach of surveying includes intensive manual labor, which culminates in architects' immersion in the built environment, during the weeks to months long fieldwork. In the field, inquirers collect information directly from the surface meaning that they have to touch the surface and even crawl under the buildings or build a head for heights. The hands-on experience is vital to acquire a better understanding of the heritage environment because the manual process allows documenters to discern building materials and construction technology while observing changes in the structure.³² Architects' contextual interaction with the built environment, therefore, is a process of analysis and interpretation where inquirers constantly capture and deconstruct a body of materials and establish the webs of significance between the elements that will furnish the basis for drawings. Observing the physical details and re-organizing the measures as a whole, demands careful scrutiny and observation skills on the inquirers' part. Subtle details (such as an original wallpaper piece, a ghost window, or a structural crack in the wall) critical to present the essence of the cultural heritage often come to light as inquirers immerse in the architectural setting observing, analyzing, and taking notes.³³

The use of advanced surveying technologies such as digital photogrammetry and three-dimensional scanning in the field, hence, challenges the architects' contextual interaction with the built environment, which is essential for field analysis and investigation. The automated data collection eliminates the manual process of producing field notes as well as sketching and hand measuring. The conventional way constructing a datum box around the building to check the perpendicularity of the walls or the levelness of the floor is not preferred in the current surveying practice either, since the automated data provides a virtual replica with accurate base information. Figure 5, for example, demonstrates a digital three-dimensional surrogate of the remains of an early Byzantine church building located on the Boğsak Island, Mersin, Turkey. The image was developed using photogrammetry, which is the art and science of obtaining measurements from photographs. Located meters away from the surface, the acquisition of the digital photographs took only a couple of hours labor while the post-process of the photogrammetric data required a weeklong office work. The base information can now be used to produce an elevation drawing of the historic structure, determine the section cut, and acquire metrics for the slope of the island.

The data hierarchy in a photogrammetry project requires a workflow from two-dimensional photographs to a three-dimensional model. Using a digital camera, documenters capture the details on the structural surface while

positioning the camera shots within tolerances of stereo pairs meaning that the ratio of distance between shots to distance of object is on the order of 1/4 to 1. The photogrammetry software triangulates the mutual points on the photographic overlays and creates a three-dimensional model. The users utilize the model for many deliverables, such as a template for an elevation drawing or a virtual surrogate for a colonnade. Photogrammetry is a useful surveying strategy for vertical surfaces (sections and elevations) and straight-on details. When recording colossal architectural examples with organic forms, as in the case of the Montezuma Castle in Arizona, documenters merge diverse surveying practices. Since much of the detailing is too high up from the ground to be photographed, to produce the elevation drawing of the Castle (Fig. 1), documenters used a total station to acquire the coordinate points on the stone surfaces, photogrammetric data to obtain the templates for the drawings, and hand surveyed the structure.

Laser scanning, on the contrary, reversed the documentation workflow by promoting the three-dimensional virtual point as the normative field record. A scanner captures the three-dimensional data of a subject by use of rapid range measurement. The tool captures thousands of discrete points per second in near real time. The resultant three-dimensional mass is called a "point-cloud." Each point has x, y, z Cartesian coordinates, RGB values, reflectivity, and intensity parameters. Documenters register separate point-clouds in one coordinate system to acquire the full coverage of the structure. The scanner software either links the targets or matches coordinate points in the surface geometry to combine the individual point-clouds. After registration, users clip the three-dimensional point-cloud to acquire two-dimensional slices, which are used as the template for the measured drawings. The section drawing of the Statue of Liberty (Fig. 3) and the plan drawing of the concession building (Fig. 2) were generated using three-dimensional scan data.

Three-dimensional scanning revolutionized the documentation work since documenters can record a wide range of architectural resources from single structures to historic landscapes that were cumbersome to undertake with conventional methodologies such as hand surveying and photogrammetric recording. A single structure such as the concession building can be scanned in couple of hours, which drastically contrasts to the weeks long hand-measuring campaign. Compared to meticulous monitoring of the quality of photogrammetric images in the field and to capturing hundreds of stereo-pairs to cover an elevation drawing as such in the church building on the Boğsak Island, a laser scanner instantly provides a three-dimensional point-cloud of the subject. Users observe the progress of the point-cloud in the field and provide additional scans as necessary. For colossal structures with irregular forms, such as the Statue of Liberty, scanning allows the documenters to collect building information remotely. Due to the refraction of the laser beam through air and glass,

however, scanner gives erroneous results when confronted with high-gloss surfaces as in the case of the gilded torch of the Statue. Then additional surveying practices are required to fill the voids in the scan data.

The use of automating surveying technologies in crafting the measured drawings has resulted in a two-fold effect. First, the utilization of digital technologies has been alienating the architects from the abstract thinking and analytical interpretation skills through two-dimensionality.³⁴ When inquirers manually collect measurements, they focus on the point and linear information on the surface. Making field drawings necessitates the inquirers simultaneously organize the extant physical qualities through horizontal and vertical projections. This cognitive process is orchestrated through deconstructing the architectural form and space in relation to dimension, proportion, and scale. The application of advanced surveying technologies such as generating a photogrammetric model in Figure 5, or working with point-clouds, on the contrary, fosters the manipulation of the absolute position of survey points in a virtual model rather than the two-dimensional dissection of the building form and space.³⁵ When making a photogrammetric model, inquirers concentrate on acquiring a set of photographs to be able to extract the point information necessary to define the surface in a three-dimensional photogrammetric surrogate. Likewise, laser scanning necessitates the users to favor the exactitude of virtual points to produce an accurate three-dimensional model.

Second, the automated data shifted the architects' focus from the building surface to the measuring tool.³⁶ When architects construct a datum box around the building and acquire direct measurements with conventional tape measures from the surface, they focus on the physical qualities of the built environment. Every point and line segment collected from the datum line corresponds to an existing feature on the surface. The state-of-the-art technologies, on the other hand, allow the inquirers to collect field data remotely while promoting the virtual survey points as the basis of the



Figure 5. Three-dimensional surrogate of the remains of an early Byzantine church building located on the Boğsak Island, Mersin, Turkey.

recording practice. Rather than focusing on the building features to gather information, inquirers concentrate on the parameters of the surveying technology to acquire precise virtual points. To be able to generate the photogrammetric model in Figure 5, for example, inquirers monitor the standard deviation in the statistical data and add/remove photographs to improve the quality of the digital surrogate. In this process, besides gathering one measurement from point A to B on the surface of the church to crosscheck the accuracy of the photogrammetric model with the existing dimensions, the documenters did not have to collect surface information. Similarly, while scanning, documenters focus on system parameters such as the range of the scanner, the point density (sampling resolution), and measurement accuracy. Each decision in the system parameters influences the accuracy of the scan data. Documenters scan meters away from the surface without the need to gather field measurements, which save time in the field and increases the safety measures in the working environment.

CONCLUDING THOUGHTS

Architectural documentation is an intellectual pursuit, where architects are in pursuit of apprehending their surroundings in a way that goes beyond superficial observation and are entitled to produce just more than mediocre representations. On one hand, architects seek ways to understand the built environment, on the other hand they frequently choose between different mediums to best present what they have come to see and recognize. During the process, architects rely on technological mediums (such as pen, paper, digital camera, and computer) to collect dimensional and structural information from the building surface and then sieve their findings to be able to reconstruct the heritage environment in the graphical form. Insisting that recording the built environment is a process devoid of interpretation and interaction, however, discounts the interpretive frame of architectural documentation and the architects' reasoning of the built environment during the process of documentation.

During documentation, architects delineate as much as possible that can be gained from studying the physical environment, while relating to the distinct forms and values embedded in the architectural context. Either formulating projections of plans, sections, and elevations to depict the architectural form and space, or augmenting interpretive drawings to portray an intangible quality of the built environment, the aim of crafting the measured drawings is to develop a better understanding of the cultural heritage and to take the viewers to the heart of the architectural context. The thick measured drawings, in this context, are graphical inscriptions of the essence of the cultural heritage, but morphed through the architects' understanding of the built environment as well as the drawing conventions of the time.

Advanced surveying technologies allow architects to collect accurate base information rapidly and remotely. While increasingly preferred in the documentation practice, these methodologies, however, transform the nature of architects' immersion in the architectural setting. The manual recording of a building is a reciprocal process where analysis, interpretation, and representation starts in the field when inquirers place a tape measure on the surface. The inquirers instantaneously begin to mediate the essence of the heritage through horizontal and vertical abstraction and to determine the content of the measured drawings. On the other hand, the advanced surveying applications alienate the architects from the material fabric and dismiss the inquirers' contextual interaction with the heritage environment. The process of collecting field data is distinctly separated from drawing. In the field, inquirers focus on the measuring tool and manipulate the system parameters to acquire an accurate digital model. Making the measured drawings is taken place later, physically removed from the architectural context, through registering the digital survey points as the meaningful parts of the graphical representation.

Geertz promoted thick description to expand the sense of human possibilities. Ethnographers refine the field findings to better make sense of the reality of the people, but the process is negotiated through the methodological path of knowing, seeing, and interpreting. Crafting the measured drawings is no different than the process of creating thick descriptions: the curated product is just as much about important as its process of creation. The hands-on experience of the architects' is essential to build a reading of the multilayered architectural context and to thickly describe these elements in the world of representations. In an architectural documentation field heavily dominated by automating tools where the outcome of the field data is measured through the accuracy of survey points, it is crucial to remember that architects' engagement with the built environment is as significant as representing the material culture.

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Credits

Figure 1: Drawing delineated by Rima Al Ajlouni.

Figure 2: Drawing delineated by Susan Bruns and the Author.

Figure 3: Drawing delineated by Cory Edwards, Ryan Pierce, and Dana Lockett.

Figure 4: Drawing delineated by Gary R. Stephens.

Figure 5: Photogrammetric model developed by the Author.

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Prison, Architecture and Social Growth: Prison as an Active Component of the Contemporary City

TYPOLOGY

Luigi Vessella

ABSTRACT - How do we treat those who make mistakes? And what does this have to do with architecture? The paper will investigate the role of architecture in the design of prisons in order to understand how we could develop a project for a jail that is a place for both punishment and rehabilitation. The effectiveness of a prison is not given only by the efficiency of the justice system in force, but also by the articulation of spaces and by the quality of the architecture. The contradiction of the prison is revealed by its need to respond to two opposing demands: punishment and reintegration. This paper investigates the possible design approaches aimed at designing a new jail typology, through an attempt to "break" the macro-themes that characterize the building of the prison and within these dichotomies work on the "boundary-line" between opposing realities: freedom—constriction; openness—closure; etc. If prison architecture were brought back into the debate regarding contemporary design culture, it could have a significant impact for society especially in terms of opportunities and cultural growth.

Keywords: penitentiary architecture, responsibility regime, prison typology, open prison architecture, behavioral rehabilitation

Most societies that today have adopted Criminal Law as an instrument for regulating the penal system in an egalitarian manner, despite the fact that they have adopted and consolidated the principles of re-education and social re-insertion of the detainees ¹ after serving their sentence, find

themselves searching for alternative answers to an unsolved issue which weighs heavily on all communities, both from the economic and social points of view.

When analysing the current situation of penitentiary systems in Western countries (Italy, Spain, the United States, etc.), the difficulties and incoherencies that continue to exist to this day regarding the role of prison in contemporary society, as well as the objectives it should pursue and the concrete results it should obtain, result quite evident.

Considering that the essence of the punishment as envisaged by the constitutions of democratic states (the limitation of the freedom of movement within a specific enclosed space) is not to be put into question here, it is however necessary to present a series of hypothesis for re-thinking the nature and features of the material and spatial structure in which the punishment is carried out. One example is the establishment of new conceptual principles of a typological nature and a new vision of the prison understood as an active component of civil society capable of interacting with the surrounding context and of generating relations and interchange with the outside world. This can help envisage an institution which, however anchored on some basic principles, can express the new vision and the new interpretation of the punishment. Although it is undeniable that there is a correlation between a certain philosophy of punishment and its materialisation in penitentiary institutions, it is also true that this materialisation is not necessarily aimed at transmitting, both from the inside and from the outside, the image of a closed, unsettling and isolated reality, lacking in any opportunities for renewal. ² In fact, it is precisely beginning from the appearance of the penitentiary building, that is of its architecture, that in synergy with other fields of study it is possible to attempt a general re-thinking of contemporary penitentiary structures, trying, however, to limit the recourse to detention in prison. For some time now prison has been defined as “an expensive way of making bad people worse,” ³ and for this reason, without wanting to debate on the functions and on the deep reasons for the existence of the prison as a correctional instrument in our society, it is worthwhile to imagine alternatives to the traditional way of conceiving it and to the role it plays in contemporary cities. Prison as we know it today ⁴ originated in the eighteenth century, when revolutionary movements and the ideas of the Enlightenment brought about a radical transformation of society, from the political as well as the social and economic points of view, drastically modifying the existing world-view, the economic organisation and the respect for human rights.

The origins of prison as a physical place for holding prisoners in fact predate the Enlightenment and have roots in the historical moment when reclusion starts to be considered as an essential tool for the correction of the offender. He is no longer considered as a social reject to be discarded (as it had been until then) but rather as the subject of a process intended to a transformation of social behaviour. The transformation of ideas

regarding punishment began to develop around the fifteenth century. Religious institutions were the first to conceive it as a possibility for rehabilitation rather than merely for affliction, through the establishment of Correctional Homes (which became widespread in Europe around the end of the sixteenth century). Before this time there was no clear division between the "trial" and the "punishment," and consequently no specialised architectural structures exclusive for the reclusion of the condemned. The Catholic Church was the first to build a It is attributed to the Catholic Church the first modern-type penitentiary structure, the prison of San Michele in Rome, designed by architect Carlo Fontana in 1704. This is the first example of a building which combined considerations regarding architectural form and treatment regime. The cultural process which led to the development of a modern idea of the prison is very complex and articulated, and was based on the fundamental contribution of some illustrious personalities who determined the evolution of the idea of the punishment and generated a new perspective regarding condemned criminals. In particular John Howard ⁵ who, through his work, helped reform the British penitentiary system and influenced the transformation of many other European penitentiary systems, and Cesare Beccaria who, with the publication of the treaty *On Crimes and Punishments (Dei delitti e delle pene)*, ⁶ defined criminality in secular terms ⁷ and opposed torture and the death penalty as instruments of the state.

There is no space in this text to adequately describe the long process that led to the formation of the idea of the punishment in contemporary society, but it is worth recalling Michel Foucault's groundbreaking essay *Surveiller et punir: Naissance de la prison* (1975) which describes both the origins of the prison and its role in contemporary society.

The in-depth reflection expressed in the essay regards the concept of the punishment and the role that is attributed to it in modern society in relation to the state, as well as the complex succession of cultural changes that have turned the prison into the main form of punishment in Western societies. In the essay, prison is analysed within a wider ideological context that includes other total institutions such as schools, army barracks and factories, and the mechanisms which regulate the existence of the said institutions in contemporary society. Foucault's thought has influenced many fields of study, which have further modified the concept of punishment and have contributed to modify and define contemporary thought regarding the function and execution of punishment in society today.

Before carrying out an in-depth analysis of the subject in question, it is necessary to define the limits of the field of study and to clarify the interpretation of some concepts. When looking at the various penal systems currently in force in Western countries (Europe and the United States specifically), it is evident that the general situation of penitentiary structures is critical and that the current punitive methods are often inefficient and produce meagre results in terms of social reinsertion. In

Europe, the penitentiary systems of many countries (among which Italy, Spain and England) present situations of overcrowding and degradation, as well as a chronic lack of economic and human resources; this renders the penitentiary treatment of detainees inefficient and costly. Analysing the detainee population in Europe, it can be seen how the majority of people who are in prison have been detained due to the commission of misdemeanours, generally of a non-violent nature (theft, bankruptcy fraud, use of illegal drugs, illegal immigration, etc.); despite this, the said detainees are subject to the same penitentiary regime as the prisoners who are in jail for the commission of more serious crimes.⁸ Analysing in depth the composition and current conditions of penitentiary structures in the main Western countries, it can be seen how, with a few exceptions, they are not adequately organised and differentiated into progressive levels of security, and are therefore not properly adjusted to the features and needs of the various segments of detainee population housed in them.

Considering the current composition of the detainee population it would be preferable for penitentiaries to be organised and differentiated according to the typologies of prisoners. In fact we believe that housing within the same structure detainees who belong to different typologies and with different needs in terms of security, control and rehabilitation treatments can present problems in terms of efficiency and the results of the envisaged penitentiary treatment. Instead, we propose the conception of penitentiary structures specifically designed for clearly defined profiles of detainees, rather than structures that are “good for all cases,” which indistinctly house people who need different types of attention and treatment. It is obviously not a question of penalising misdemeanours or eliminating prison sentences as punishment for non-violent crimes, but rather organising penitentiary structures into security circuits that are differentiated in accordance to the type of detainee and the level of security required. In this way the re-education treatment can be better focused and regulated to the specific needs of the detainees in each of the penitentiary circuits that the state considers as necessary in relation to the social conditions of each country. This could help avoid the homogenisation and standardisation of penitentiary treatment, which makes it inefficient, costly and untenable, as the data from the Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) demonstrate.

Additionally, when analysing the main penitentiary structures existing today, it is evident how the current conception of the prison and the interpretation of the sense of security has broken the link that prisons historically maintained with the city to which they belonged. We can trace this from the first examples of Correctional Houses in Northern Europe to nineteenth century penitentiaries, enclosed in themselves but firmly inserted in their urban context (for example, San Vittore in Milan and Pentonville in London). The most important penitentiaries today are located far away from urban centres, in isolated communities, or in the suburbs of large cities, thus at the margins (both physically and figuratively) of

society. In view of this, it is important that penitentiary structures should be differentiated not only in terms of treatment and prison regime, but also in terms of architectural features and appropriate location criteria, in relation to the various typologies of detainees and their specific reclusion, security and rehabilitation requirements.

It is also believed that, as affirmed by the General Assembly on Criminal Enforcement (Stati Generali sull'Esecuzione Penale), places of detention should once again involve the work of project architects, and no longer be an exclusive prerogative of institutional technical agencies. In this regard, focusing our attention on Europe, we can look at some interesting examples in which the architecture and the interior spatial organisation were capable of ascribing to the prison building an active role within the city and at the same time of offering a positive contribution to life in detention through a different typological model for the space used for everyday activities. The case studies presented below show, on the one hand, the awareness of the responsibilities of the architect, or project team, in the design of such an important building for both city and society, and on the other, a sensibility towards not only the more general aspects of prison design, but also to the details and ordinary elements which in the context of the prison assume a fundamental role, both for detainees and operators.

THE FUNDAMENTAL PRINCIPLES OF THE NEW PENITENTIARY ARCHITECTURE

Although prisons are very complex structures in which many factors take part in terms of performance and efficiency, and therefore the issues related to them need to be tackled through a multi-disciplinary approach, in this brief essay the attention will focus mostly on aspects that are inherent to the architecture of the prison, both at the urban scale and that of the building itself, with references as well to some issues which include management, organisational and social aspects within the penitentiary structure. Some penitentiary activities, in order to be carried out in accordance with the law or international regulations,⁹ need a specific spatial structure, which satisfies certain requirements and specific standards, especially in terms of size. All of this can be respected only if the prison is envisaged, both at the institutional and cultural levels, as a tool for rehabilitation and for providing opportunities, rather than only as a place of segregation and social exclusion.¹⁰ Translating these concepts into architectural terms, it could be said that if the prison continues to be envisaged only in terms of security and control, it will remain the institution that we know. On the contrary, if architects are given the opportunity to provide for aspects regarding the interior quality and comfort for the users of the structure, it will be possible — as the examples show — to ascribe an active role to the penitentiary, including a healthy relationship with society outside the prison, which can thus become an asset for society at large.

The hypothesis that is presented here derives from the assumption that the various types of detainees should be differentiated into structures that are designed based upon the different needs of the various segments of the prisoner population. This view is based upon the premise that architecture can, and must, contribute through appropriate projects to these varying types of custody requirements into which the penitentiary system can be subdivided. Although it would be preferable to rethink typological schemes and spatial organisation at all levels of security (from minimum to maximum), it is easier to begin by providing detailed indications regarding prisons belonging to the minimum-security circuit. Due to their lower levels of control, minimum-security institutions can more easily accept and adapt to new typological experimentation and to design solutions that are not as bound to the traditional rigid prison models which have been unimaginatively replicated throughout the territory.

As mentioned before, the themes included in the definition of a new architectural conception of the prison take into consideration aspects at the urban scale even before defining with precision the typological features of the building. Every State certainly has its own particularities and features, its traditions and customs, but if we pay attention exclusively to European nations, we can overlook the differences that characterise every social system and penitentiary model, and consider only those aspects that are essential and fundamental in all systems. This process of simplification is partly justified by the fact that the tradition on which the main penitentiary systems is based has a common origin, which has now been shared for decades through the adoption of international agreements and regulations, as well as by the fact that, at a general level, the respect for human rights and for the dignity of individuals is founded on universal tenets that are now shared worldwide.

In view of this, it is appropriate to make a clarification regarding the penitentiary system in the United States, which presents features that are very different from those adopted by the countries belonging to the European Union. This makes it difficult to carry out comparisons or to import or export solutions between the two contexts. In the United States the situation of prisons is generally tragic, as it can be seen in the last report published by the International Centre for Prison Studies at King's College in London,¹¹ which shows how detainee population has reached numbers of up to 2,200,000 people, with the second highest rate of detention in the world, 698.¹² The specific mechanisms through which penitentiary services are subcontracted to private entities, prefigures a situation that is very different from that of Europe, from the cultural, social and economic points of view. To this, it is added the fact that the death penalty is still practiced in some states of the American Union. These factors result in a fundamental ideological difference between Europe and the United States which, from its fundamental principles, has implications throughout all levels of the organisation and management of the penitentiary system. Thus, in order to seek new hypotheses for

the development and enhancement of the penitentiary system, it is more convenient to focus on the European context. In this way certain positive tendencies may be highlighted. These are often still in an experimental phase, yet begin to show their first positive results.

The countries which present more innovations regarding the adopted penitentiary model are Norway, Denmark, Spain and Austria. Each country expresses these innovations in different ways. Some, like Norway and Denmark, have designed very modern and expensive structures, innovative in terms both of the spaces —interior furnishing and decoration— and of the security and technological systems adopted, which collaborate with the proper carrying out of advanced penitentiary treatment methods. Other countries, such as Italy and Spain, have mostly aimed at the transformation of penitentiary models, only partially modifying the existing penitentiary structures. It is necessary, however, to bear in mind that Italy and Spain show a continuous presence of critical, and sometimes even emergency situations, whereas other countries, such as Norway, Austria and Denmark have consolidated good practices which have transformed them into ordinary practices for the design, management and organisation of penitentiary structures. The benefits of this approach are evident as it can be seen by comparing the data regarding the detention rate and the percentage of recidivism. In Italy the detention rate is close to 103, in Europe it is 128 and in the world 144,¹³ but there are remarkable exceptions, such as Norway, with a detention rate of 71, and Denmark with 61. The same disparity exists in the rate of recidivism:¹⁴ in Italy recidivism is higher than 67 %, whereas in Norway the percentage of recidivism is between 16 and 20 %. This same rate in the United States reaches a staggering 76.6 %.¹⁵

These numbers cannot be ascribed only to the bettering of the spaces and of the quality of services within the prison, but research carried out on the Norwegian penitentiary system show that the architecture and quality of the spaces does play a fundamental role in addressing the challenge of creating a penitentiary system that is both efficient and useful to society. The words of the Director of Bastøy prison are in this sense exemplary: “In the law, being sent to prison has nothing to do with putting you in a terrible prison to make you suffer. The punishment is that you lose your freedom. If we treat people like animals when they are in prison they are likely to behave like animals.”¹⁶

These figures show how a new organisation of the penitentiary system is needed, beginning from its material structure. The question, however, must be addressed at the cultural level. The transformation of the cultural stance is necessary in order to bring about an interpretation of the prison sentence as an opportunity for the renewal and rehabilitation of the detainees, which then becomes expressed by the resulting penitentiary models through concrete elements such as work, education, interchange with the outside world, and the organisation of individual and collective spaces.

The arguments regarding the new idea of the prison refer to models for minimum and medium security penitentiaries, but nothing excludes the possibility of extending the elements in question to all types of prisons, while limiting as much as possible the construction of maximum security institutions. The aspects that characterise the new way to conceive the prison regard:

- a) The location of penitentiary buildings in relation to the urban context and to the structures that intervene in the penitentiary system. The penitentiary building must be capable of establishing a relationship with its surrounding context and of generating interchange with the outside world so as not to become an impenetrable element, unresponsive to the stimuli coming from the city. The prison must no longer be conceived as a city within the city, as in the past, but rather assume the functions of an urban neighbourhood, and be placed in continuity with the surrounding urban fabric. This permits the creation, in precise and well-chosen points, of “moments of osmosis” between the inside and the outside, in a dialectical relationship with the active components of the surrounding social context.
- b) The penitentiary structure, even when articulated into several buildings, must however be based on a compact typology so it can be inserted without discontinuity into the urban fabric. It must be conceived as a complex structure with entrance and exit flows, and must offer its non-residential spaces, especially next to the entrance, to the outside community, so as to allow the prison to become a place for supporting urban collective culture, ascribing to it a role as linkage between the inside and outside worlds.
- c) The elimination of the impenetrable wall as a necessary condition for overcoming the “fortress” effect. The re-thinking of the external wall, the boundary, as we are used to imagine it today, must be abandoned in favour of a more permeable solution, both from the visual and the material point of view. The substitution of the wall with a porous, inhabited perimeter, could confer to the boundary a greater “thickness” that allows organising within it spaces for penitentiary functions that are not strictly related to detention, capable of hosting the external community and make it come into contact with the “enclosed” community living in the prison.
- d) The prison building must adopt spatial solutions which follow more open custody models in which the cell is no longer the central element of prison life. The prison must no longer be a nondescript container of cells and must become a well-articulated structure capable of satisfying the requirements of collective as well as of individual life. There must be alternation and variation between spaces. The dimensions and measurements of the environments must be proportionate to the periods of time the

spaces are occupied and to the number of users admitted to them simultaneously, as well as adequate for the specific functions to be carried out within them. The various sections of the structure must not be mono-functional, but rather tend to a multi-functionality, so as to alternate open spaces for social activities and closed spaces for the various activities envisaged by the rehabilitation treatment programmes. The dynamic succession of dense and rarefied spaces must be as close as possible to that of everyday urban normality.

- e) The cell must lose its role of central place in prison life, giving way to a model of the prison organised on the model of self-sufficient residential units (residential nuclei). Within each residential unit the detainees can self-manage their time and organise the distribution of the responsibilities regarding their common areas, abandoning the model of undifferentiated distribution of cells. Residential units must present an alternation between individual spaces, for the moments of privacy, and collective spaces for moments of social interaction. The atmosphere within the interior space must reproduce, at least partially, the familiar effect of collective structures,¹⁷ so that the organisation of space may play a role in the process of rehabilitation and help in fostering an attitude of social cooperation.
- f) The size of the spaces, beginning with the bedrooms, both in residential units and in other types of functional organisation, must respect the minimum dimensions established by national and international regulations of the C.P.T. and the European Court of Human Rights. The dimensional standards, as only regulatory tool, have been much criticised and doubt has been cast as to whether they provide an effective benefit to collective structures, either of a social or popular nature. Adopted in a deterministic manner, without additional criteria for choosing the minimum dimensions, they seem sterile and incapable of ensuring the levels of quality required by complex structures such as a prison. If the dimensional parameters are not determined in relation to the ways in which the spaces are used, and the duration of the usage, the resulting spaces will be inadequate for satisfying their purposes, to the point of becoming generators of anguish and depression. These parameters, however, can be kept as reference for penitentiary institutions, if they are then appropriately related to the ways in which the spaces are used.
- g) The new penitentiary structure must overcome the model of confinement of detainees within the detention section even if it belongs to the open cell typology, and envisage differentiated levels of autonomy of movement for every detainee. Some institutions already use technological systems that envisage the use by the detainees of magnetic cards which give them access to certain functional areas of the prison, based upon their duties and

treatment activities. This method of management of the internal flow, on the one hand can make the participation of detainees in therapeutic activities easier, thus helping them to fully express their personality, and on the other allow prison operators to better get to know the detainees inside the areas where they spend most of their time.

- h) In order for work and education to have an active role in the process of re-education, it is necessary to provide adequate spaces which can take on the symbolic value of spaces for cultural and social emancipation, fundamental elements for a positive reinsertion into society. The educational and work programmes have proven to be essential for the reinsertion of the detainees and have a direct effect on lowering the rate of recidivism (Jovanic, 2011). Some studies have proven that education, work and detention are closely related and that offering the detainees the opportunity to better their work capacity and cultural quality means offering them an enhanced possibility to reconstruct their life after prison.¹⁸ The classroom, as well as the workshop, must be conceived so as to favour learning and incentivize interaction and cooperation between detainees and operators, marking a distance —as much as possible— with the features of closure which characterise spaces of reclusion.
- i) Meals, such as lunch and dinner, must be held in common so that this activity assumes once again its usual and normal value as a moment of social interaction. For this reason, the appropriate spaces that respect regulations in terms both of hygiene and security must be made available. As we can read in the Final Document of the General Assembly on Criminal Enforcement,¹⁹ the preparation and consumption of meals is of the utmost importance since it represents “one of the few elements that recall the everyday life outside the walls, in addition to being one of the few activities that the detainees can carry out autonomously: it is a way for reaffirming individual identity and for maintaining links to one's own family, as well as for interacting socially with fellow inmates.” Instead of providing common dining-halls where the entire detainee population eats at the same time, smaller areas can be devised where small groups of detainees can autonomously administer, prepare and eat their meals.
- j) The interior furnishing and decoration and the treatment of surfaces, both horizontal and vertical, as well as various security systems in use today must be rethought in function of a lesser visual and material impact. The materials and the colours used must contribute to the creation of a welcoming and comfortable environment, with a good degree of way finding and with a lighting that is adequately related to the specific activities undertaken in each space.

The above described 10 elements have been deduced observing examples carried out in Europe and North America. They seem to represent the main elements on which to base the design of a new typology of penitentiary institution. A penitentiary model that is different from the preceding models not only in name, but rather a structure which is truly new in its very essence, and which expresses through its architectural configuration the aims of rehabilitation and social reinsertion. The described elements express the idea of a prison centred on the opportunities for rehabilitation of the individual, and no longer only on segregation and exclusion. The limitation of freedom becomes the only element of punishment that the Rule of Law inflicts on those who transgress certain rules, and this new penitentiary model clearly represents this stance. At the centre of the new detention model is the detainee himself, who is considered as an active participant in the process of re-education. This cultural threshold permits a society to express a detention model centred on individual responsibility and on the possibility of self-management of part of their everyday life by the detainees. This represents the “jump” which allows a society to establish a properly functional penitentiary apparatus. A penitentiary system which is capable of rehabilitation rather than correcting, of including rather than isolating, and of creating a community which, however enclosed as a result of having committed a mistake, is part of the social structure, and as such exists permanently, notwithstanding the social re-insertion of the individuals who belong to it.

CASE STUDIES

With the purpose of integrating and verifying the information obtained from the scientific literature and from official documents and reports (European Union, UN, C.P.T. ²⁰) the detailed examination of a series of case studies was undertaken. The chosen examples are significant regarding the topic at hand because they offer interesting starting points for further reflection and in-depth analysis on the subject of the design of minimum-security penitentiary institutions. The case studies were selected on the basis of certain specific parameters listed below, that were considered essential for evaluating the features and implemented design solutions. The buildings in question represent the expression of interesting and original spatial and architectural features, which make them stand out among the common current production of this typology of structures. These features concern mostly the morphology, functionality and organisation of interior and exterior spaces. The identified features are those that were deemed more significant for the definition of general design criteria.

The analysis of the case studies was carried out with the purpose of gathering —through the examination of plans and drawings— documents, information of a general nature (type of institution, dimension, location, etc.) and a series of empirical principles not yet codified by the scientific literature, but already widespread within the culture of the project.

The idea behind the analysis of the case studies is that of tracing an architectural typology and a reference model for the planning and design of future penitentiary structures. This is carried out by identifying, through the examination of the built examples, the characteristics of the configuration and organisation of spaces, as well as the variables and constants in the design of minimum-security prisons. The wish to trace the architectural typology does not stem from a desire to identify a "structural model" to replicate in future projects. Rather, it comes from a desire of setting down a series of principles, ideological motives, functional constants and types of spatial organisation that may constitute guidelines, on both cultural and symbolic level, for the design of minimum-security penitentiary structures. In order to ascribe theoretical value to this premise, it is perhaps useful to recall Quatremère de Quincy's definition of type:

"The word 'type' presents less the image of a thing to copy or imitate completely than the idea of an element which ought itself to serve as a rule for the model. [...]. The model, intended as the practical execution of art, is an object that must be repeated exactly as it is; the type, on the contrary, is an object upon which anyone can conceive works that have no resemblance to each other. Everything is precise and given in the model; everything is more or less vague in the type."²¹

Since the type is a concept that is construed a posteriori, that is after the observation of a series of concrete examples, one may attempt to identify among completed projects those typological constants which have reached an adequate level of stability over time, and may thus be considered as valid, precisely because they have been verified by historical experience. Through the experience of type one may "take advantage of the experience accumulated over time, especially considering the validity that those forms will continue to have in the future."²² The type is thus not a precise form,

but rather a general framework or a 'project of form' that prefigures possibilities and alternatives.

The parameters for deciding which case studies to choose were the following:

- morphology
- distributive features
- functional and spatial organisation
- management systems
- levels of security and control

From the preliminary considerations, the listed features seem to be those that contribute most to the definition of new typologies of penitentiary institutions and that are capable of characterising a penitentiary structure not only on the basis of its custody and isolation functions, but also upon functions related to housing and rehabilitation.

Halden Prison, Halden (Norway)

The Halden penitentiary complex, situated approximately 100 kms to the south-east of Oslo, was inaugurated in April, 2010, and is the feather in the cap of the Norwegian penitentiary system (Fig. 1). The project constitutes the most innovative example in the field of penitentiary architecture for the application of the responsibility regime, and the prison is configured as a detention facility for both the rehabilitation of inmates and behavioural research. Designed by the HLM arkitektur studio in collaboration with the Erik Møller arkitekter studio, Halden prison was built over a period of ten years and at a cost of approximately 200 million euro. The main objective for both the entity who commissioned the prison and for the architects who designed it was that of making the penitentiary institution resemble as much as possible the outside world, so as to establish a way of life based upon responsibility and self-determination. The 252 inmates are busy in work or study activities during the day and spend most of the time outside their detention rooms. The prison is organised into several separate pavilions immersed in the green of the garden, and within the pavilions the inmates are free to move and to organise their leisure activities together. The detention sections house 10 inmates each and include, in addition to the rooms for



Figure 1. Halden Prison, Halden (Norway). The entrance building.

sleeping (Fig. 2), a living-room (Fig. 3), a dining-room, a fully equipped kitchen and a multi-purpose room. The inmates can prepare and eat their meals together, as well as do their cleaning and manage their expenses in common. The entire area within the walls is laid out as a garden, with trees, benches and jogging lanes, and is visited on a daily basis by the inmates whenever they have any free time. In addition to the detention sections, the workshops and the school, the prison includes a recording studio, a common kitchen and guest quarters for relatives who come to visit the inmates. In addition to the responsibility regime, Halden prison is characterised by the architectural solutions used; the architects in fact strived — both regarding forms and the choice of materials — to limit the alienating effects caused by detention, and to imagine a structure that would recall the least possible a detention centre. The prison wall was also the object of intense research, and was partially camouflaged with the use on the one hand, of a curved layout and tall trees and, on the other, through a series of murals and graffiti of high aesthetic quality painted by contemporary artists. Another element in the Halden prison that attenuates the sense of constriction and alienation is the abolition of all the traditional internal security devices (bars on windows, fences, armoured doors, etc.), which are replaced by technologically advanced systems. All the elements above described contribute to the establishment of a penitentiary institution that is respectful of both human rights and the individual personalities of the inmates. Halden Prison is a highly innovative institution for the qualified treatment and behavioural rehabilitation of the detainees and it looks ahead to the future and attempts to overturn the old principles and belief in segregation and suffering as part of the penalty.



Figure 2. Halden Prison, View of a bedroom.



Figure 3. View of the living-room of the detention section.

New Justizzentrum, Leoben (Austria)

The building designed by the group of Austrian architects Hohensinn Architektur, inaugurated in 2004, is not only a minimum-security prison, but also a proper public structure at the service of the city. In the description of the project, the architects say that the objective was not to design a new courthouse for the small city of Leoben, but rather to build an open structure at the service of the population of the city.

The justice centre comprises two main sections: the first, with a glass facade looking towards the city (Fig. 4), is the courthouse itself, which includes all the offices of the courthouse and of the public prosecutor; the second, placed on the back of the building, houses the minimum security prison (Fig. 5). The prison can house 125 detainees subdivided into four separate sections. Each detainee has a single bedroom (Fig. 6), normally furnished, and has access to the common spaces present in the section in question: dining-room, kitchen (Fig. 7), living-room, garden and loggia. The prison also has a gym, a sports centre, covered gardens and terraces, in addition to the services and spaces for both recreational and rehabilitation activities. The inmates are free to move within their sections without the need of security agents, and can reach the areas for work and educational activities independently. The detention sections are designed as though they were shared apartments, with all the comforts found in a normal civilian residence. They are furnished with sofas, armchairs, tables, and flat-screen televisions. Through the quality of spaces, materials and



Figure 4. New Justizzentrum, Leoben (Austria). View of the facade as seen from the city of Leoben.



Figure 5. View of the garden and part of the facade of the detention building.



Figure 6. New Justizzentrum, Leoben. View of the inside of a bedroom.

furnishings, the living environment aims to generate positive sensations and stimulate social interaction among the detainees so as to render the detention period less traumatic and to produce a true transformation in the behaviour of the inmates. Special attention was placed on the design of the gardens and courtyards where the inmates spend their leisure time participating in sports and recreational activities.

The architects attempted to reduce to the minimum traditional security devices such as bars on windows and interior gates and fences in order to guarantee the ease of movement and reduce the sense of constriction.

A location was chosen for the new jail in the proximity of the urban centre of the small city of Leoben, so as to permit the new building to establish an interaction with the surrounding urban context.



Figure 7. Justizzentrum, Leoben. View of the dining-room and of the kitchen of the detention section.

Detention Centre, Vordernberg (Austria)

The Vordernberg Detention Centre, inaugurated in 2013, is not really a penitentiary structure, but rather a detention centre for illegal immigrants. This specific category of inmates (immigrants without a residence permit) is housed within the centre not due to a sentence passed by a court, but because it finds itself in a condition of illegality that must be resolved either through deportation or the granting of a residence permit. The structure is therefore designed to house, for brief periods of time, people who find themselves in this specific legal status. The structure of the detention centre is based upon the “comb” architectural model and is divided into two main areas: the administrative and management services (administration offices, immigration offices, consulate offices, etc.) are



Figure 8.
Detention Center,
Vordernberg.
View of the
residential/detention
zones placed
on the rear
of the building.



Figure 9.
View of the
residential garden.



Figure 10.
View of the living/
dining-room
area for the use
of the detainees.

placed on the side facing the street and the entrance; on the opposite side is the housing area for the residents (Fig. 8), that includes the sleeping quarters and all the spaces for everyday life (living-room, dining-room, kitchen, toilets and bathrooms, etc.). The building, composed of two floors above-ground, includes seven residential sections, each of which has a garden or a terrace (Fig. 9). Open spaces are free to be used by residents upon previous notice to the surveillance personnel (Fig. 10). The building constitutes an interesting example of integration between detention-type security measures (people detained within the structure cannot leave before receiving the necessary documents) and an everyday way of life. The project presentation says that the architects imagined the structure as a simple guesthouse, with ample spaces furnished with high-quality furniture, void of any physical-type security devices (bars on windows, fences, a security wall), capable of both respecting the dignity of the people detained and guaranteeing compliance with security regulations. The aim of the architects was constructing a building that did not evoke the traditional image of a prison (while, however, fulfilling an analogous function) and that respected the rights and needs of the people held within it, allowing them to organise and decide how to spend their time in the structure. The research for the project, developed through a continuous dialogue between the architects and the personnel of the Austrian penitentiary administration, resulted in spatial solutions that can be adopted in future minimum-security prisons as well, that guarantee both a degree of self-determination in the detainees and the respect for detention regime regulations.

CONCLUSIONS

The critical interpretation of the conceptual elements and of the design approaches regarding the topic of penitentiary architecture proposed above, tries to “mend” the relationship between the theoretical conception and the actual building practice of the prison. The interpretation is developed from the idea that the architectural project, when it materialises in a built structure, is always the material expression of an abstract idea and of a specific vision of the world which manifests itself through the architectural consistency of the building and of the built spaces. This affirmation is even more true when it is referred to the design of institutional architecture, which, in addition to its own function, is called to transfer to society at large a series of meanings and symbolic values, as in the case of courthouses, schools, hospitals and shelters. Among these typologies, the prison is the one which represents in a more evident manner the gap between theoretical thought and concrete results.

Over the past forty years, penitentiary disciplines have undergone radical theoretical changes which, on various occasions, have attempted to modify in society the meaning and the role of the punishment, and

consequently of the prison. The ideas, theoretical expression of the most recent regulations, had a marginal influence on the quality of the existing penitentiary structures. Therefore, the conception of the building focused on a severe incarceration regime and the refusal to accept the possibility of a more open prison remained mostly unvaried through time. The consequences of the disparity between the “theory of detention” and the “practice of incarceration” has resulted in the fact that Italian penitentiary structures are now so far behind that the European Court of Human Rights based in Strasbourg has condemned Italy for inhuman and debasing treatment of detainees.

In order to restore the rule of law in penitentiaries, institutions have determined different forms of intervention: some programmatic and others of a legislative or scientific and cultural nature. These interventions on the penitentiary building system are both of a quantitative and a qualitative nature. The first are aimed at the construction of additional structures, whereas the latter intervene on the articulation of the building system. The latter is developed according to new building typologies which respond to the new detention models, thus attempting to express the renewed cultural stance that interprets the prison as an element capable of being in synergy with other urban functions. The objectives set by the institutions, expressed through new theoretical developments, represent an ambitious and progressive project aimed at eradicating conservative and backward ideas regarding the role of prison architecture. It proposes a new disciplinary conception of the architectural project open to the academic and professional world in an attempt to solve and make effective the relationship between architectural design, building practices and management of the penitentiary structure. Today, the most difficult task faced by architectural culture is that of being more incisive and successful than before in putting into practice and making effective the theoretical principles that are the expression of the new idea of the prison.

Notes

1. In this text the terms “detainee” and “inmate” will be used as synonyms, without consideration of the differences which may derive from legal subtleties in certain languages. The same is true for the use of the terms “jail” and “prison,” which may also have subtle variations in meaning in different countries.
2. Cf. General Assembly on Criminal Enforcement, 2016.
3. Cf. Soering, 2004.
4. Understood as the place where the sentence is served which was determined by the conviction as a result of a criminal trial carried out in accordance with the law and aimed at safeguarding the rights of all parties involved in an equal and impartial manner.
5. John Howard's most important work, *The State of the Prison* (1st edition 1777), is an analysis of the conditions and practices carried out within the most important European prisons.
6. The text was published for the first time in 1764 and was widely diffused throughout Europe, thus contributing to set the foundations for the Enlightenment thought and for the new idea of the punishment.
7. Crime was defined by Cesare Beccaria as the violation of the social contract between

- the individual and society, and gradually lost its religious connotation related to sin.
8. In Italy, for example, approximately 45 % of the detainee population is serving a sentence of less than 5 years, whereas only a small percentage is serving sentences of more than 30 years to life (approximately 4 %) as a result of serious or very serious crimes (Istituto Nazionale di Statistica, 2015).
 9. European Committee for the Prevention of Torture, C.P.T., U.N.
 10. Prisons today play a triple role: they represent the punishment to be suffered as a consequence of the sentence in proportion of the gravity of the crime committed (retribution), they prevent the commission of crime through fear of the punishment and the certainty of jail (deterrence), and limit the commission of new crimes through re-education and social re-adaptation (recovery and rehabilitation).
 11. *World Prison Population List*, 11th edition, by Roy Walmsley, International Centre for Prison Studies, 2016.
 12. By rate of detention is understood the number of detainees for every 100,000 inhabitants.
 13. *Final Report of Statistical Survey 2015*, (Istituto Nazionale di Statistica).
 14. The percentage of recidivism refers to the number of detainees who return to prison within two years of being liberated.
 15. Sterbenz Christina, "Why Norway's Prison System Is So successful," *Business Insider UK*, 11 December 2014.
 16. Erwin James, "The Norwegian Prison Where Inmates Are Treated like People," *The Guardian*, 25 February 2013.
 17. The collective structures used for reference in this text are student housing, nursing homes and convents.
 18. See, among others, Parker, E. A., "The social-psychological impact of a college education on the prison inmate," *Journal of Correctional Education* 41(3) (1990):140-146.
 19. General Assembly on Criminal Enforcement, Op. Cit.
 20. European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment.
 21. Antonie C. Quatremère de Quincy, *Dizionario storico di architettura: le voci teoriche* (Venice, It.: Marsilio, 1985; or. ed.: Paris, 1788-1825, 1832).
 22. Giulio C. Argan, *Progetto e destino* (Milan: Il Saggiatore, 1965), 78.

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Architecture and Intermodality. Guidelines for the Architecture of the Intermodal Hub at the FVG Airport Ronchi dei Legionari

URBANISM

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ABSTRACT - The research addresses the topic of intermodality in terms of technical, typological, and architectural response of infrastructure systems, considering their relationship with the territory and the landscape. The study starts from the hypothesis of the development of a comprehensive intermodal hub in the Ronchi dei Legionari Airport (Friuli-Venezia Giulia, Trieste, Italy), integrated with the network of local public transport and railway infrastructure, considered in a scenario of sustainability over the medium term and updated with respect to the current economic situation. The first phase of the research focused on the definition of the guidelines for the design of the intermodal hub. Subsequently, the study verified the hypothesis by modeling some alternative scenarios, whose results led to the identification of a highly comprehensive set of data, consistent with the financial framework. Lastly, urban verification: the identified scenarios constitute a framework of alternative options corresponding to the minimum, optimal and critical conditions of the system as a whole. The possible alternatives prove the degree of versatility of the proposed layout which provides, as a whole, the possibility of opting for one of the proposed scenarios or for a more complex combination of the proposed solutions.

Keywords: intermodal hub, infrastructure, evolutionary scenarios, strategic planning, Friuli Venezia Giulia

The development of an “application” model of sustainable intermodality at different levels, local and regional. Complete and coherent under different profiles: architectural, urban and territorial, infrastructural,

economic, managerial and organizational. It is the final outcome of the operational research that has led, through a two-year commitment, to the definition of the guidelines necessary for the architectural configuration of the Intermodal Hub annexed to the FVG Ronchi dei Legionari Airport.

The research, the results of which have been widely recognized at the national and international level, has proved to be fundamental for the development of the final design of the Hub and therefore for the subsequent implementation phases. The term “operational,” in this experience, applies to the influence and the direct impact of a process of knowledge and formulation of the project, divided into analytical, interpretative and technical verification phases, avoiding any insistence and/or entrenchment in the definition of abstract models, or in self-serving logic.

The study of the material context and the territorial systems, with particular reference to urban, landscape, environmental, hydro geological and airfield statutory constraints was followed by analysis of the infrastructure system and the main connected networks. The study of flows and relations with the different territorial dynamics affected by the Intermodal Hub. The assessment of costs and benefits attributable to the more relevant modality model, the definition and comparison of alternative layouts. The dimensioning of a functional executive program in relation to policy orientations aimed at forecasting the development of the FVG Airport in terms of growth of flows and extension of the user base as well as the confirmation of the same in its role of strategic infrastructure for the regional context.

Hence, the technical and regulatory pre-dimensioning of areas, structures, roads, car parks, technological artifacts, open spaces and formal devices. The feasibility assessments and performance verifications related to the capacity and service level of the infrastructure and annexed elements.

The simulation, or simulations, related to the architectural configuration of the parts and the elements constituting the complex whole. A second phase concerned the updating of the analyses and the territorial frame of reference as well as the configuration of transformation scenarios, in the medium and long-term: *Reversible minimum scenario, Optimal scenario or Standard Service Level and Crisis Scenario with the identification of the maximum sustainability potential of the infrastructure.*

The definition of the guidelines, in essence the creation of the “rules of the game,” was not, as it might seem looking at the chronological listing of the various phases, an arid and exhausting crossing of data with a reductionist logic, but rather the attempt to address the complexity and the importance of a topic that is multifaceted and rich in implications such as an infrastructure, and more generally the theoretical and experimental steps concerning the architectural and landscape design connected to such infrastructure, by testing tools and techniques, disciplines and economies, fields of study, practices, and even testing



Figure 1. Macro area of the Intermodal hub adjacent to the Ronchi dei Legionari airport.

the authors, who are of different ages and have different skill sets, in a truly multi-disciplinary action.

An action that, with different technical approaches and expressions, leads to a synthesis of the study, reflection and exploration phases, and to a method that illustrates the entire scope of the project and that can be understood, interpreted and revisited. This value of general applicability represents a major academic achievement of this research, and it represents and constitutes a high expression of design capability.



Figure 2. Micro context of the Intermodal hub including the Ronchi dei Legionari airport.

Research Program

The research includes the examination of the intermodality topic in terms of technical, typological and architectural response of the infrastructure systems, considering their relationship with the territory and the landscape.

Specifically related to the operational dimension, the research starts from the acquisition of a model of international scope comparable to the size, traffic flow and complexity of the regional airport of Ronchi dei Legionari, considered together with the annexed area as an object of study and a privileged field for experimentation and synthesis.

Divided into steps, the research leads to the definition of guidelines useful for the design of the intermodal exchange centre and the airport complex, with a high conceptual and qualitative profile, and to the configuration of an appropriate economic and functional feasibility, also considering sustainability aspects and environmental balance implications.

Hypothesis of the Study

The research has started from the hypothesis of the development of an intermodal hub connected to the Ronchi dei Legionari airport and integrated with the local road and rail public transport infrastructure, with reflections at the international level. The whole project has been

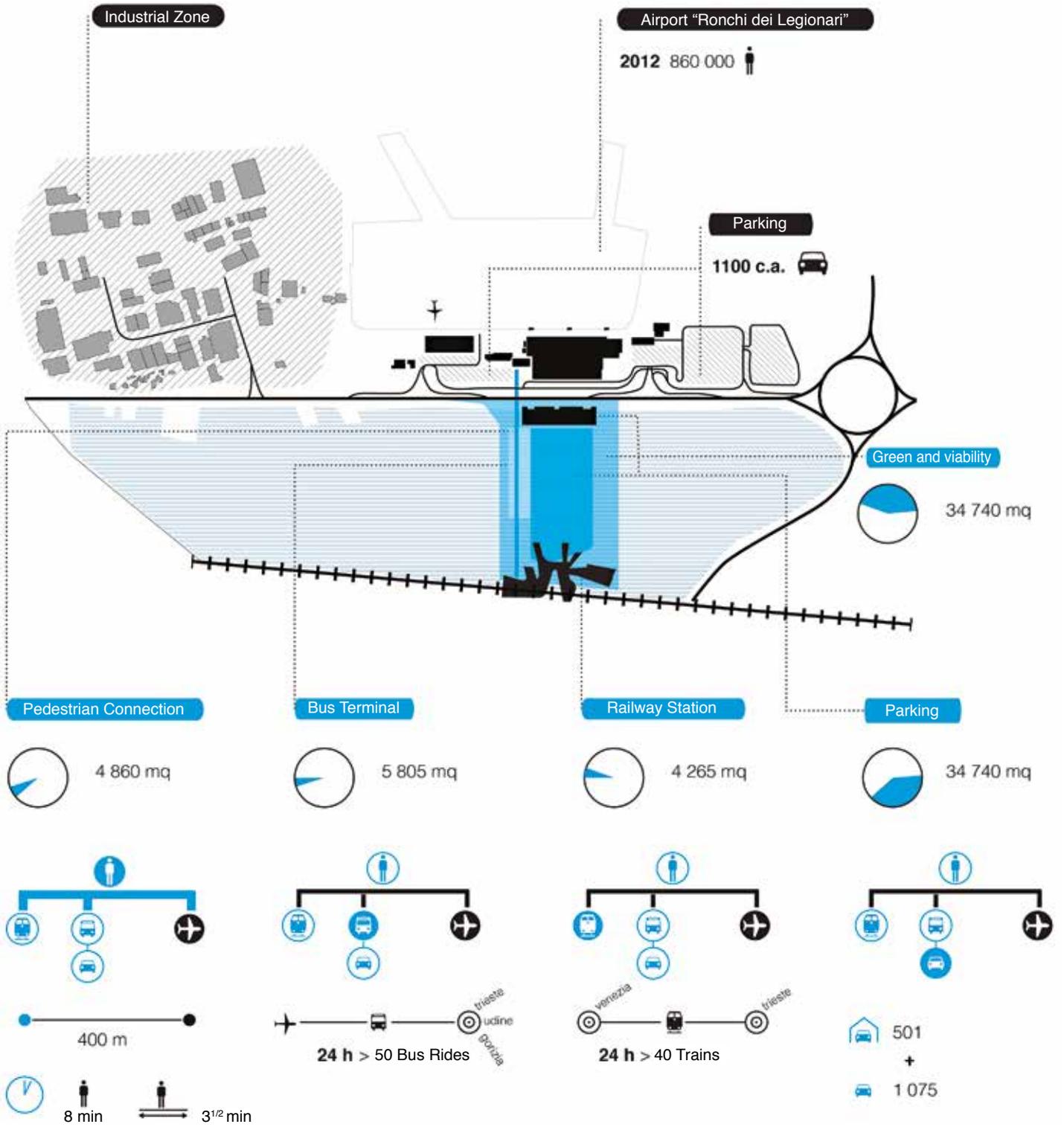


Figure 3. Master plan info-graphic.

considered within a broader sustainability framework of the interventions in the medium term, updated to the current economic situation. In particular, the intention has been to explore the study of the intermodal hub in depth starting from a given functional programme, as a defined architectural and infrastructural organism, subsequently broadening the investigation to the possible urban articulations of the connected surrounding areas.

The main connection axis was identified in the elevated canopy that is connected with the various functions of the Intermodal Hub, integrating certain functions of individual parts in order to decrease the number of functional elements, to optimize the necessary economic resources and strengthen the identity of the architectural setting. In particular, in the railway station the canopy becomes the overpass of the tracks and in the bus station it becomes the roofing of the lower space. In this way, only a few other elements are necessary for the definition of the spaces, with obvious scale benefits.

Methodology Used

The general methodology used to develop the project hypotheses provides for two distinct types of activities: The first is the analysis of the context, carried out based on the various aspects being considered relevant or distinctive; the second phase assumes that this analysis is then verified by constructing scenarios aimed at providing alternative solutions to the contextual framework previously defined. In the study, these alternative scenarios have been compared to each other in order to determine the optimal solution and define the guidelines for the object of the research.

In particular, this methodology has been applied at different levels, urban and architectural, in order to take into account both the overall arrangement of the hub and the most relevant and sensitive architectural solutions.

Analyses Conducted

Urban context: a screening of the existing planning instruments at the different territorial levels has been conducted in order to acquire an overall picture of the local and territorial planning concerning the object of the study, aimed at determining compatible scenarios.

Restrictions: The study has identified the restrictions in the area from different points of view, and in particular regarding infrastructure, environment and landscape, in order to determine the “invariant” aspects for the comparison of different scenarios.

Infrastructural context: also with regard to the planning framework, the infrastructural context of the study has been determined in order to create a coherent whole, aimed at the proper inclusion of new flows arising from the verification scenarios.

Economic context and financial planning: the identified scenarios have been verified with particular attention to the economic and financial aspects, in particular, the short-term feasibility of the Intermodal Hub facilities.

Verification

The verification of the hypotheses made by the study was carried out by modeling some alternative scenarios, at the urban and architectural level. The comparisons and verifications of different levels have led to different applications of the described study methodology.

Depending on the degree of detail reached, in particular regarding the architectural level and in relation to the Intermodal Hub, it has been possible to identify a more defined and detailed scenario, coherent with the data framework, in particular with financial data. This has allowed us to recognize, among the evaluated alternatives, a single proposal as the solution to be favored.

Subsequently, we proceeded with the urban verification; the overall scenarios identified at this level provide a set of alternative options, defined by the degree of compatibility with the Intermodal Hub solution described above and taken as the invariant element for this broader hypothesis.

Definition of Alternative Scenarios

For the Intermodal Hub, characterized by a unified functional program defined in agreement with the airport, the hypotheses produced by the study investigated the different spatial and infrastructural configurations that were compatible with the analysis frameworks and suited to minimize the impacts and costs of the works.

Consequently, the study defined different characterizations for the surrounding area that are compatible with three different regimes and intensity of use of the Hub: a minimal condition, an optimal condition and a crisis of the system as a whole.

Identification of the Optimal Solution

The optimal configuration of the Intermodal Hub has been first identified through an assessment of the various structures, using a parametric quantification of the interventions, then through a detailed analysis of the identified solution with particular reference to construction costs.

The surrounding urban structure was assessed in relation to the infrastructural capacity of the Hub, verifying the possibility of developing the surrounding areas with limited adaptations of the Hub itself and the bordering road networks.

To this end, the limit assumed was an infrastructural configuration of the Hub that would not require major works on the bordering national and provincial roads.

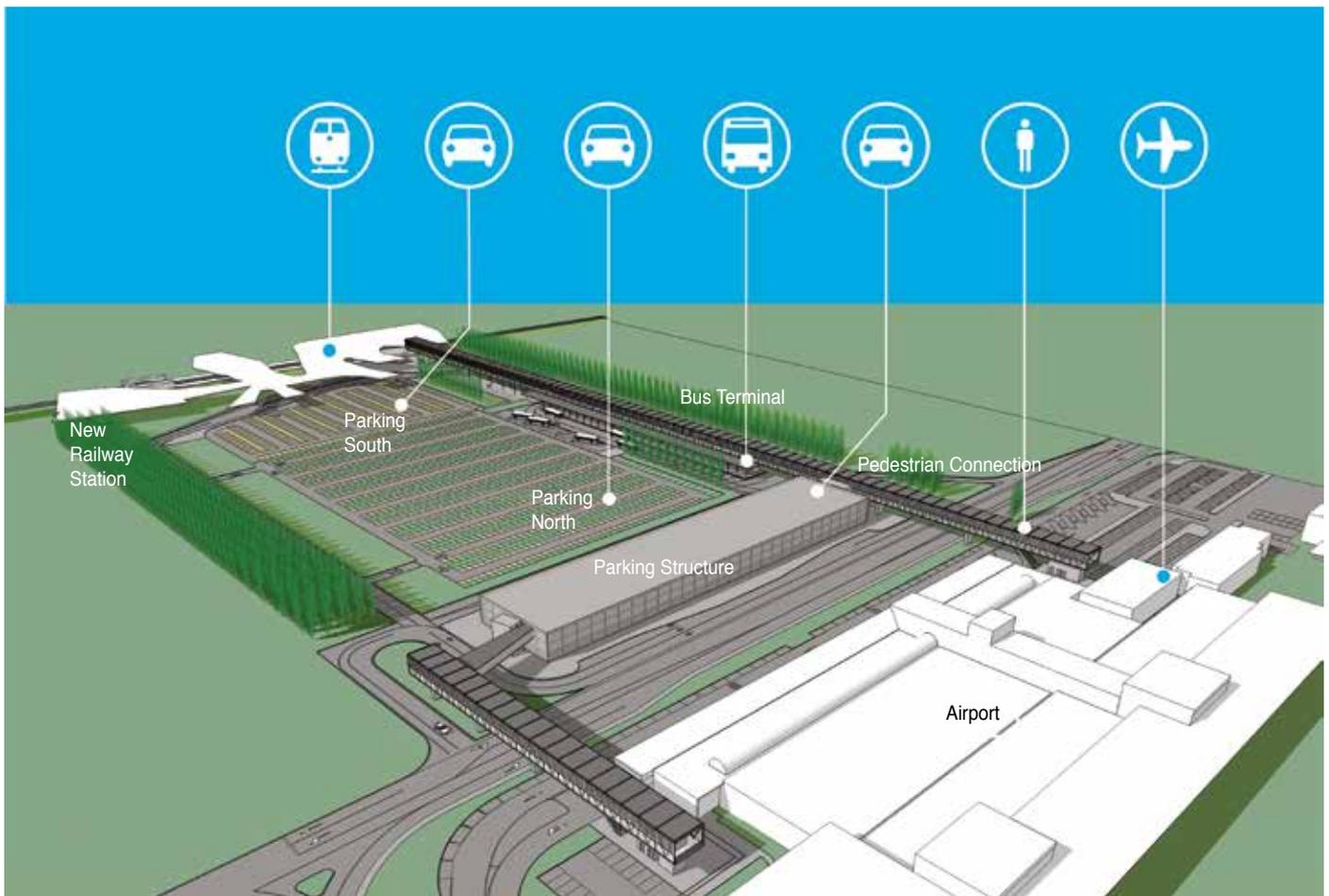


Figure 4. 3D view of the intermodal hub including new functions.

Achieved Results

The achieved results demonstrate the technical and economic feasibility of a first development phase of the Intermodal Hub in the short and medium term, compatible with the analytical frameworks evaluated.

Subsequent scenarios of urban development also confirm the possibility to build on this first element in a sustainable and effective way, without the need to intervene in the existing road system. The possible alternatives that have been identified also demonstrate the degree of versatility of the proposed configuration, which provides the possibility, as a whole and both in the medium and long-term, to opt for one of the proposed scenarios or for a more complex configuration resulting from a structured combination of the solutions offered.

1. MINIMUM REVERSIBLE SCENARIO

This hypothesis should be viewed considering the national geopolitical scenario, the regional economy and the local urban settlement. The

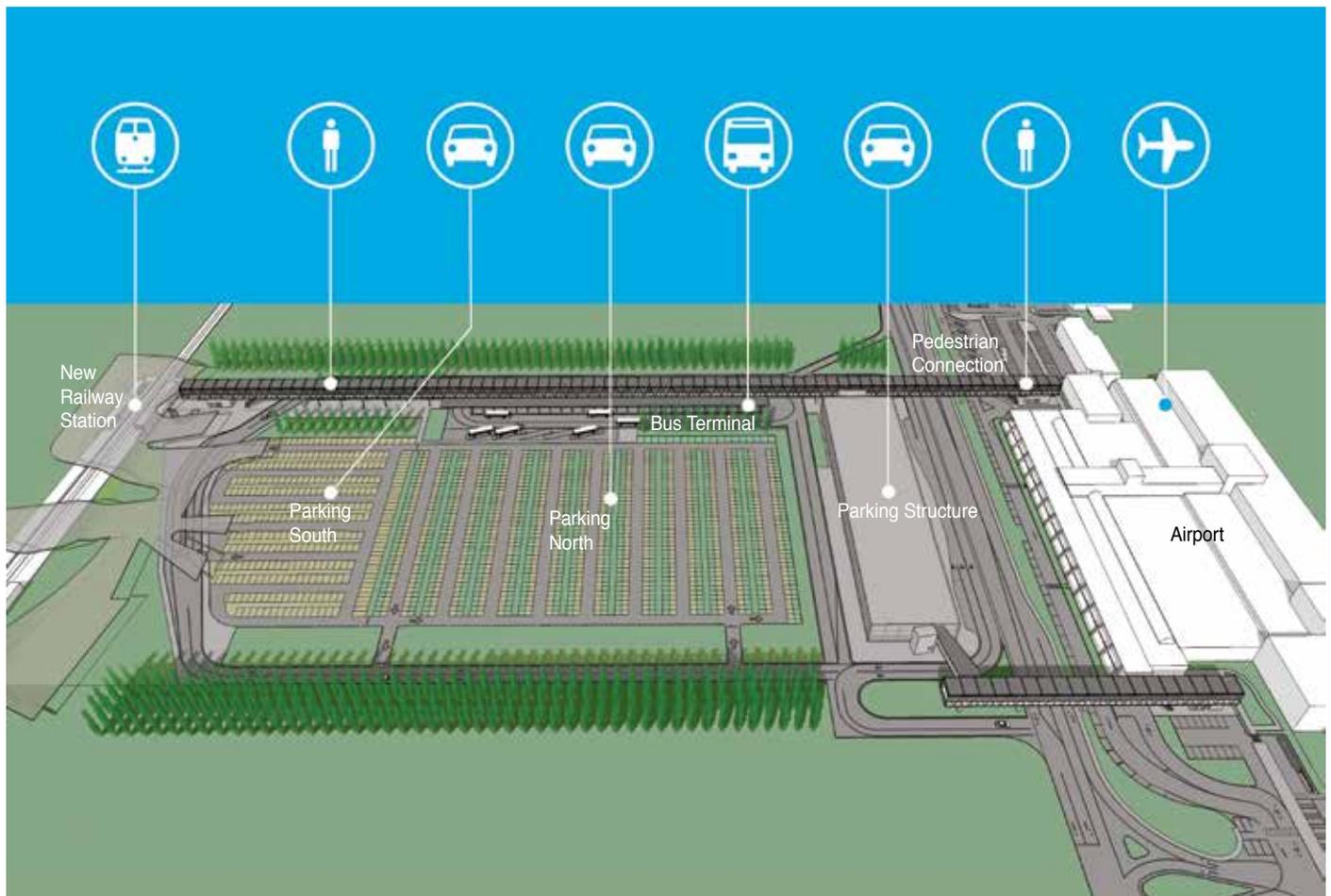


Figure 5. 3D view of the intermodal hub including new functions.

proposed layout provides for a minimal reorganization of the area with a different use of agricultural lands, characterized by a low environmental impact and reduced use of resources for infrastructural works. The agrarian vocation of the area is confirmed, with experimentations in specialized sectors such as intensive micro-agriculture, bio-agriculture or multifunctional agriculture (as called for by the recent feasibility study for the “Experimental Landscape Plan of the Province of Gorizia”), while waiting for a reversal of the declining trend of the regional economic scenario and the local production. The scenario explores a possible development of the East and West Sectors in line with the theory of “de-growth.”

All infrastructure and urbanization interventions have a reversible nature. The scenario provides for a road system with a backbone that makes use of the ring road of the Intermodal Hub.

The service level of the Sectors is guaranteed and integrated by the service level of the Intermodal Hub that, in relation to the trend of the flows related to the Airport and those planned from the new RFI stop and the CIMR bus line, offers a wide margin of functionality.

The scenario envisions an internal operation of the Sectors (urban and infrastructural) that exploits the time needed for the full operation of the Intermodal Hub (the estimate is at least 5 years). This, therefore, is a short-term scenario, but it does not necessarily constitute a preparatory phase for future transformations.

1.0.1. General Choices, Objectives, Strategies and Overall Vision

The scenario provides for a minimal reorganization of the area with the creation of a non-food agricultural system. The reorganization of existing lands has sought to minimize the changes to the existing situation, in order to streamline the implementation procedures, by identifying two Sectors, West and East, characterized by a reversible infrastructural system with a low environmental impact, which requires limited resources for its implementation.

Starting from an approach in line with the theory of “decrease” and requiring a limited land use, the identified scenario appears as a short-term option, capable of absorbing and facilitating the evolution towards other scenarios with a more intensive usage but not being necessarily only a preparatory phase for future transformations.

1.0.2. Settlement Model

When investigating the optimal settlement model, the analysis has taken into account various aspects related to the present situation and the future Intermodal Hub. First of all, the study has tried to maintain the current land situation as much as possible, identifying a distribution layout capable of providing maximum functionality and requiring minimum economic and bureaucratic efforts, so as to facilitate the implementation procedures; secondly, it has tried to minimize the impact of the main road system exploiting the existing or planned routes. Consequently, the creation of the East and West Sectors can be implemented with a significant reduction in costs and construction times.

1.0.3. Road System and Distribution

The distribution road system is identified with a precise layout and provides for changes of the road platform based on the scenarios that have been identified by the research. This, together with the re-use of almost 80% of the ring road of the Intermodal Hub, enables the containment of the implementation and development costs for the entire road system, which consists of several roads of various types linked by a precise hierarchy: a backbone that branches off from the ring of the Intermodal Hub, a ring that defines and surrounds the South Sector, a system of penetration roads and a bike path connected with the existing local cycle network.

The entire road system has been developed in parallel to a landscape

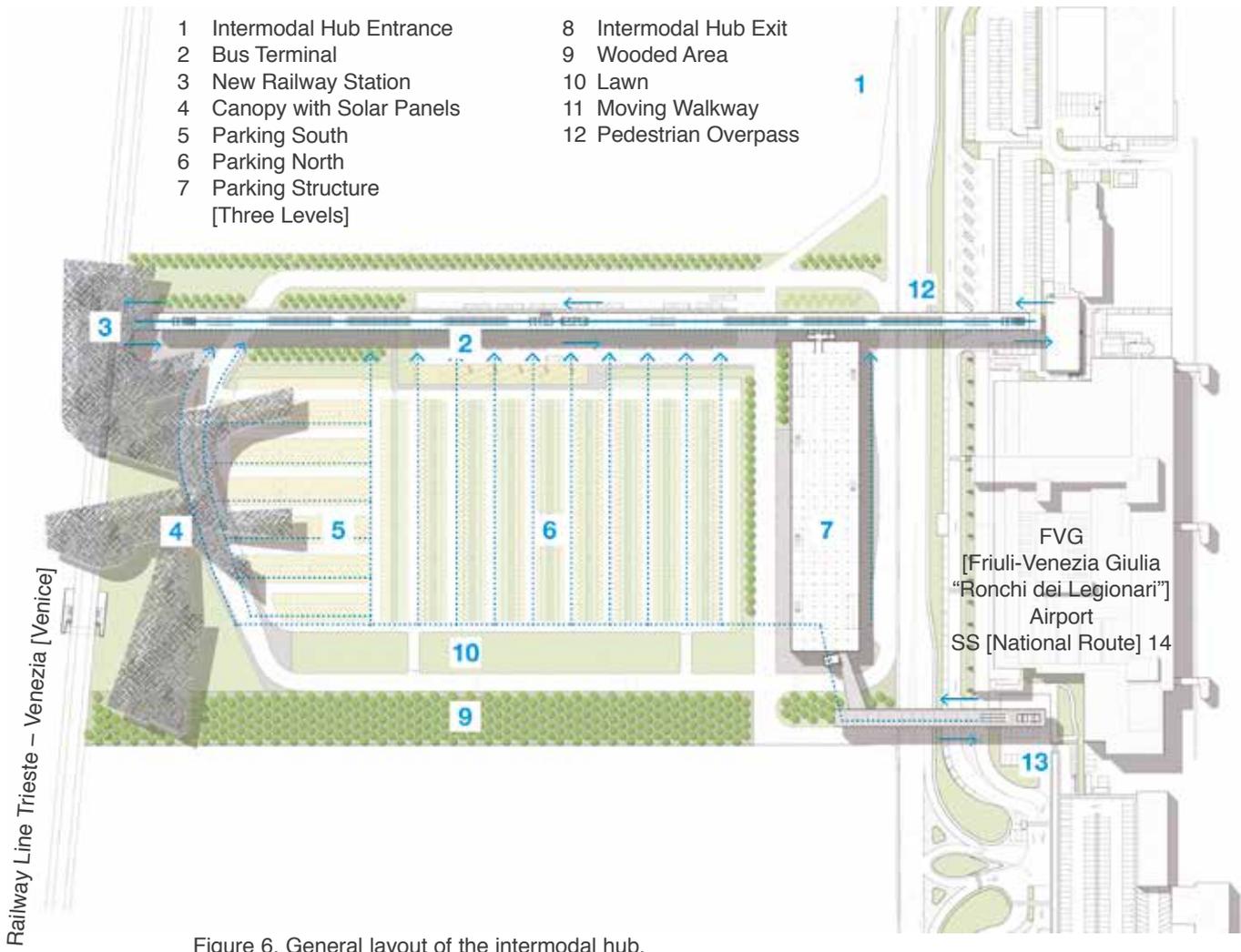


Figure 6. General layout of the intermodal hub.

project, having as its main elements rows of trees along the penetration roads, green buffer zones and a wooded diaphragm towards the railway.

1.1. Settlement Models

1.1.1. Main Functions, Induced Uses

The primary use that characterizes this scenario is of the non-food agricultural type. The non-food specification depends on the fact that the area is affected by the presence of exhaust gases from the airport that are incompatible with food crops.

The development of the agricultural activity in the area can be divided, as better explained in the following diagrams, into sub-scenarios, which involve the use of the area mainly for field cultivation, greenhouses, a mixed scenario and, finally, intensive exploitation.

In addition to the agricultural component, the Minimum Reversible

Scenario provides for the creation of a park/diaphragm close to the railway, a green buffer area and another area, located within the South Sector, for a possible expansion of the Intermodal Hub.

1.1.2. Levels of Flexibility and Possibility of Modification

The entire system identified, according to different phases and modulations, ensures a high degree of flexibility and the possibility of modification both with respect to the evolutions of the other scenarios, through the continuation of the settlement scheme and the maintenance of the road system design, and within the Minimum Reversible Scenario with the possibility of establishing and implementing agricultural activities with different types of land use.

1.1.3. Land Use, Density, Green Areas, Economical Convenience and Pragmatism

Land use has been minimized through the creation of a lean distribution system and adopting solutions with a low environmental impact. The green areas are used as buffer zones between the cultivation zones, the road to the terminal and the rail movement axis. The economic convenience of the design choices has already emerged from the identification of the guidelines of the settlement model with the motivations provided above.

1.2. *Urban Layout and Contextualization of the Scenario*

1.2.1. Relations with the Intermodal Hub

The relationship with the Intermodal Hub takes place through the interdependency with the distribution ring of the multi-modal system, the creation of an area for possible expansion in the West Sector and the development of a cycle system that, connecting with the existing dedicated networks, provides the possibility of implementing and further enhancing the interchange within the area affected by the general intervention.

1.2.2. Connections to the Context

The connections to the context occur through the integration with the existing infrastructure, with the Intermodal Hub and with the airport, while from a landscape point of view there are common and recognizable elements of the context in which the scenario in question is meant to operate.

1.3. *Conclusions*

The Minimum Reversible Scenario represents a very satisfactory answer to the current and future minimum requirements and larger potential. The hypothesis identified is configured as a serious and sustainable scenario from both an environmental and an economic standpoint, providing the

Figure 7. View from the parking lot.



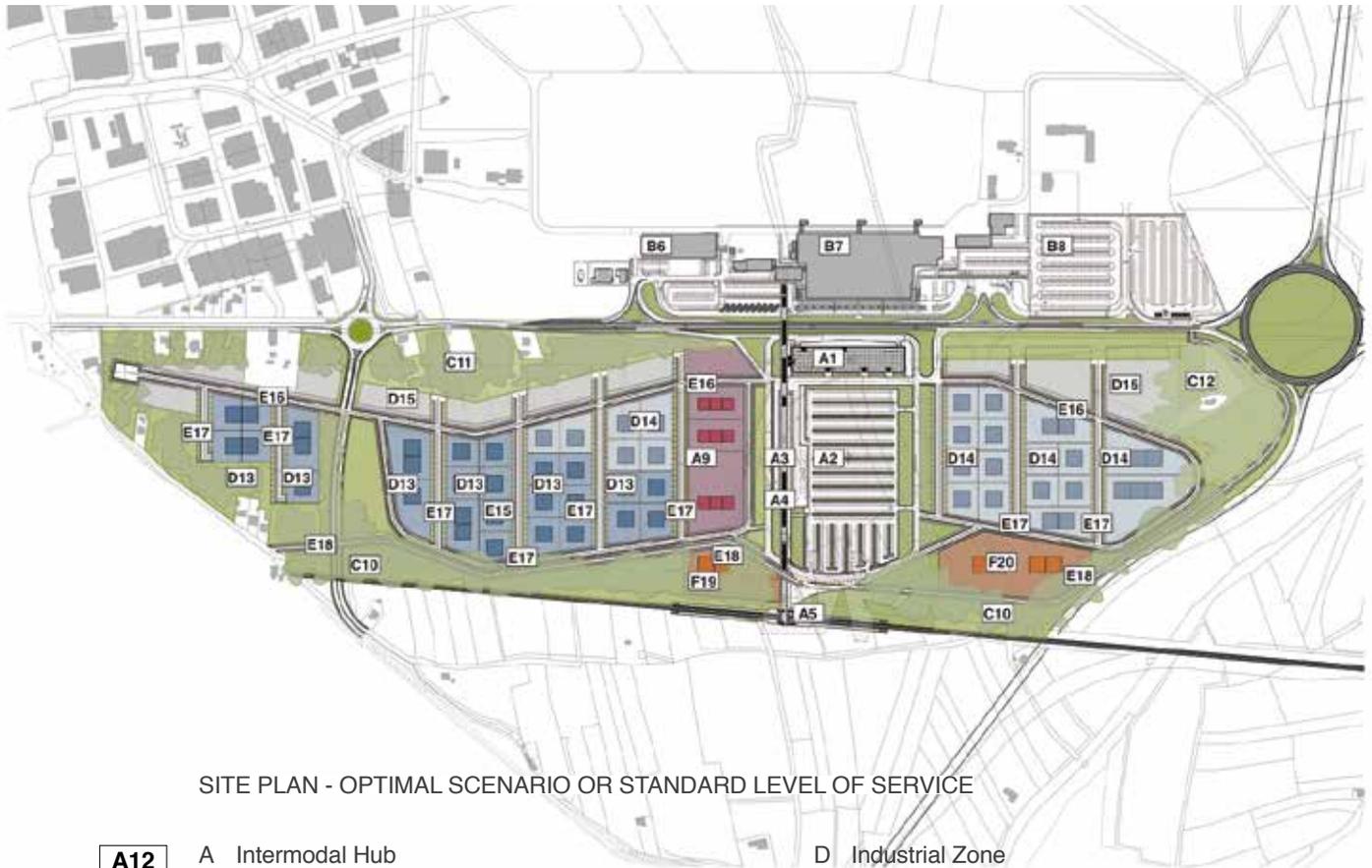
Figure 8. View of the footbridge.

possibility for further development towards optimal or crisis scenarios through moderate implementations of the settlement model.

2. OPTIMAL SCENARIO OR STANDARD SERVICE LEVEL

This hypothesis assumes a scenario of national and European geopolitical growth and a regional framework of rationalization of production activities

Figure 9. Optimal scenario, master plan.



SITE PLAN - OPTIMAL SCENARIO OR STANDARD LEVEL OF SERVICE

- | | |
|--|--|
| <p>A12</p> <ul style="list-style-type: none"> A Intermodal Hub B Airport C Green Areas | <ul style="list-style-type: none"> D Industrial Zone E Circulation F Public Amenities and Services |
| <p>A12</p> <ul style="list-style-type: none"> 1 Parking Structure 2 Parking 3 Bus Terminal 4 Pedestrian Overpass 5 Railway Station 6 Freight Station 7 Passenger Station 8 Existing Parking 9 Intermodal Hub Expansion Business District area D12 and D13 10 Park / Green Buffer next to the Railway 11 Agricultural Land next to SS [National Route] 14 | <ul style="list-style-type: none"> 12 Green Buffer next to the Roundabout 13 Industrial zone not subject to ENAC [Italian aviation agency] development restrictions 14 Industrial zone subject to ENAC [Italian aviation agency] development restrictions 15 Parking and circulation areas for the logistics of goods and vehicles serving areas D12 and D13 16 Main Circulation 17 Secondary Circulation 18 Bike-path 19 Cafeteria 20 Child-care |

and urban reorganization carried out by local administrations (provinces and municipalities). Regional Law 5/2007, as amended, provides for several administrative cooperation instruments, including the integrated management of municipal production areas with a perspective of land use optimization. Starting from these assumptions, the Sectors create a substantial, comprehensive and well-equipped manufacturing/production area, with a strong environmental character (APEA), fuelled by the new “regional environment exchange platform” in service of all municipalities in the District.

The hypothesis is based on the equalized transfer of “D” areas of the 9 municipalities of the District to Sectors adjacent to the Intermodal Hub, with the related transfer and compensation of expenses. In this way, the Sectors would be configured as a production district with a strong critical mass, a high level of specialization/experimentation and a wide range of spaces, infrastructure and equipment, and above all with access to major networks and logistics routes. The structural elements (invariants), in addition to the road system, will consist of the environmental system, which will characterize the ecologically equipped production area. The scenario offers an “ideal” level of service (TGM 2600/2800) as it leverages the full implementation of the Hub and increases its capacity with the addition of a dedicated ring on the side of the ring of the Intermodal Hub. The two Sectors will be structured in two rings connected to the middle one, enlarged, of the Intermodal Hub, and a widespread grid system, within the rings, which will organize the layout of the settlement model.

2.0.1. General Choices, Objectives, Strategies and Overall Vision

The Optimal Scenario of the study envisions the possibility of creating an inter-municipal manufacturing/production district compatible with the constraints of the area deriving from the presence of the airport. The implementation can be carried out directly or as an evolution of the Minimum Reversible Scenario and provides a wide modulation of the structure and volume requirements of the various production units that may be established. Considering the location of the area in relation to its surroundings, the district can be either an implementation of existing neighboring entities or as a consolidation and optimization of micro-districts existing in a larger surrounding area. In this way, a virtuous circle could be triggered that optimizes existing resources and potentials, simultaneously converting low-value manufacturing/production areas currently present in the surrounding municipalities. In this sense, the Optimal Scenario is proposed as a solution not only for the East and West Sectors, but also for a much larger area that have in the airport and in the future Intermodal Hub an important development factor.

2.0.2. Settlement Model

The settlement model of the Optimal Scenario follows what has been described in relation to the Minimum Reversible Scenario. Its implementation is based on the same assumptions, i.e. the optimization of resources using local assets as a design input in order to align the reduction of implementation costs and timeframes with the creation of a scenario able to provide optimal responses to present and future needs. The system can be accomplished either directly or as an evolution of the Minimum Reversible Scenario. In this case, it will be sufficient to re-modulate some roadways and create the necessary urban infrastructure for the settlement of the various manufacturing/production activities. The settlement model, finally, can evolve towards the requirements of the Crisis Scenario.



Figure 10. Detail of the mock-up zooming on the new footbridge.

2.0.3. Road System and Distribution

Maintaining the general principles of the road system for the Minimum Reversible Scenario, in this case the study provides for the creation of a hierarchical road system with roadways calibrated according to the specific needs arising from the presence of manufacturing and production units. The overall design identifies a main backbone complete with a circulation ring that defines the area destined to the future expansion of the Intermodal Hub, two rings for the circulation in the East and the West Sectors, a penetration road system along the a North-South axis and finally a cycle path that, developed in the South part of the area, connects with the existing cycle-pedestrian system. The road system is accompanied by a landscaping project that maintains the distinguishing features already present in the Minimum Reversible Scenario, like the tree-lined avenues along the North-South axis and the wooded diaphragms towards the rail and road systems that surround the area concerned by the study.

2.1. *Settlement Models*

2.1.1. Main Functions, Induced Uses

The activities that will be established will be connected to a manufacturing and production model. According to the identified sub-scenarios, there will be a different densification of the area and of the

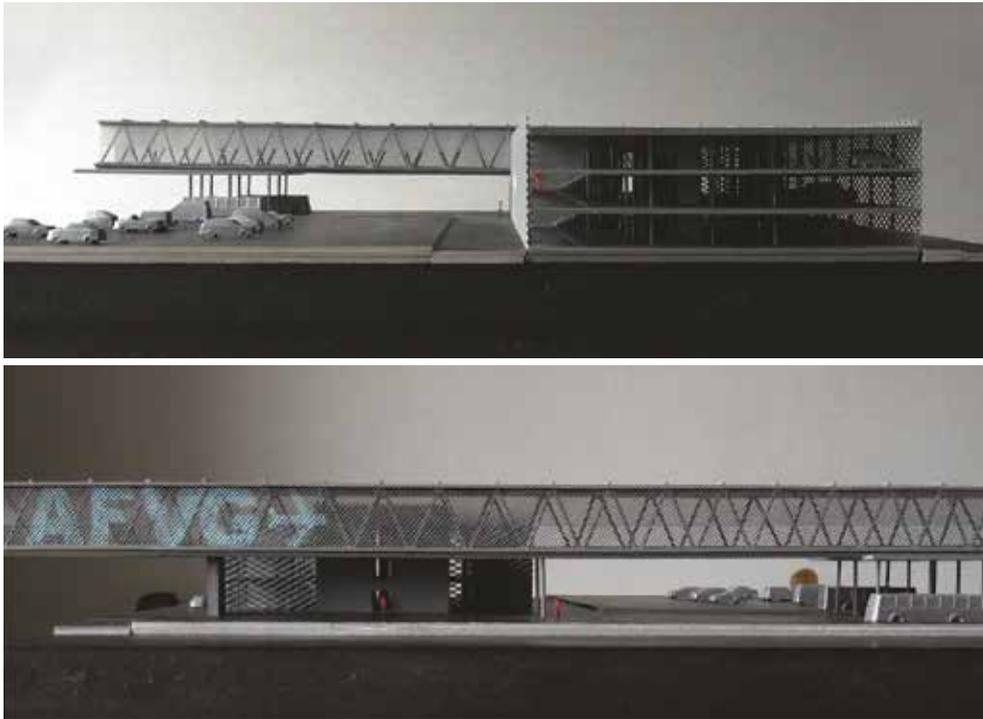


Figure 11. Views of the project mock-up.

cubic volume of the buildings. The smaller units will be 20x20m on a single lot, larger units may result from the merging of a number of minimum units plus a premium allotment. The north part of both Sectors will have large areas dedicated to parking lots and cargo handling. An area dedicated to the expansion of the Intermodal Hub will be identified inside the West Sector. While in the vicinity of the park/diaphragm near the railway the study envisions complementary functions such as a canteen and a kindergarten in order to increase the service level offered to all the workers within the area and its immediate vicinity, all in full compliance of Enac and rail constraints. In addition to the aforementioned green area, additional green areas will be identified as buffers towards the major arterial roads.

2.1.2. Levels of Flexibility and Possibility of Modification

The system identified, with the related land layout, provides the possibility to create highly flexible production areas, organized according to a mesh that determines minimum production units and a number of progressive variations, until reaching a sub-scenario of Maximum Cubic Volume. The manufacturing/production areas are divided into two sub-areas according to the need to comply with the ENAC constraint on a massive presence of people. The presence of parking and handling areas completes a service already made strategic by the presence of the Intermodal Hub.

2.2. *Urban Layout and Contextualization of the Scenario*

2.2.1. Stakeholders and Investors

This hypothesis assumes a scenario of national and European 2020 growth and a regional framework of rationalization of production activities and urban reorganization carried out by local administrations (provinces and municipalities). Regional Law 5/2007, as amended, provides for several administrative cooperation instruments, including the integrated management of municipal production areas with a perspective of land use optimization. Starting from these assumptions, the Sectors create a substantial, comprehensive and well equipped manufacturing/production area, with a strong environmental character (APEA), fuelled by the new “regional environment exchange platform” in service of all municipalities in the District, and therefore it will be attractive for both new activities and for activities coming from neighboring municipalities. This will happen thanks to the equalized transfer of “D” areas of the 9 municipalities of the District to Sectors adjacent to the Intermodal Hub, with the related transfer and compensation of expenses. In this way, the Sectors will constitute a production district with a strong critical mass, a high level of specialization/experimentation and a wide range of spaces, infrastructure and equipment, and above all access to major access to major networks and logistics routes.

2.2.2. Land Use, Density, Green Areas, Economical Convenience and Pragmatism

The overall system includes the optimization of the road system for a ratio between usable areas/available roads very much in favor of the first. In this way, it will be possible to rationalize the use of space and there is the possibility of achieving a densification of the built volumes, optimizing land use. The overall design identifies lots which are as regular as possible so as to avoid waste and concentrates parking and handling spaces in the perimeter areas, achieving a further rationalization of the flows and the use of the area.

2.2.3. Relations with the Intermodal Hub

The entire manufacturing/production area benefits from the presence of the Intermodal Hub thanks to which its offer is enriched by a unique exchange system and vehicular communication in the region, with obvious benefits in terms of logistics. This, together with the possibility of synergistic relationships between the activities that will be established in the area, makes the subject of the study particularly attractive and an ideal candidate as one of the leading sites for the future economic recovery of the entire region.

2.2.4. Connections to the Context

The connections to the context are made evident by the integration with the Intermodal Hub, with the airport and with the existing and planned road and rail systems. From a landscape point of view, the study has developed green areas that integrate the intervention and put it in relation to the characteristic elements of the surrounding landscape, the access to which is also facilitated by the presence of a bicycle path connected with the bicycle and pedestrian system already existing in the area.

2.3. *Conclusions*

The Optimal or Ideal Standard Scenario is a constructive and concrete answer, both in case of economic recovery of the entire area and in the hypothesis of optimization and incorporation of the various micro-districts currently present in the municipalities of the District, according to a sustainable approach from an environmental and economic standpoint. The proposed scenario can be configured as an evolution of the Minimum Sustainable Scenario or as a direct implementation. In turn, it provides the possibility of an evolution towards a Crisis Scenario through some modification to the layout of the premises, i.e. exclusively eliminating the penetration roads from the main system.

3. CRISIS SCENARIO AND IDENTIFICATION OF THE MAXIMUM SUSTAINABLE SERVICE LEVEL

3.0.1. General Choices, Objectives, Strategies and Overall Vision

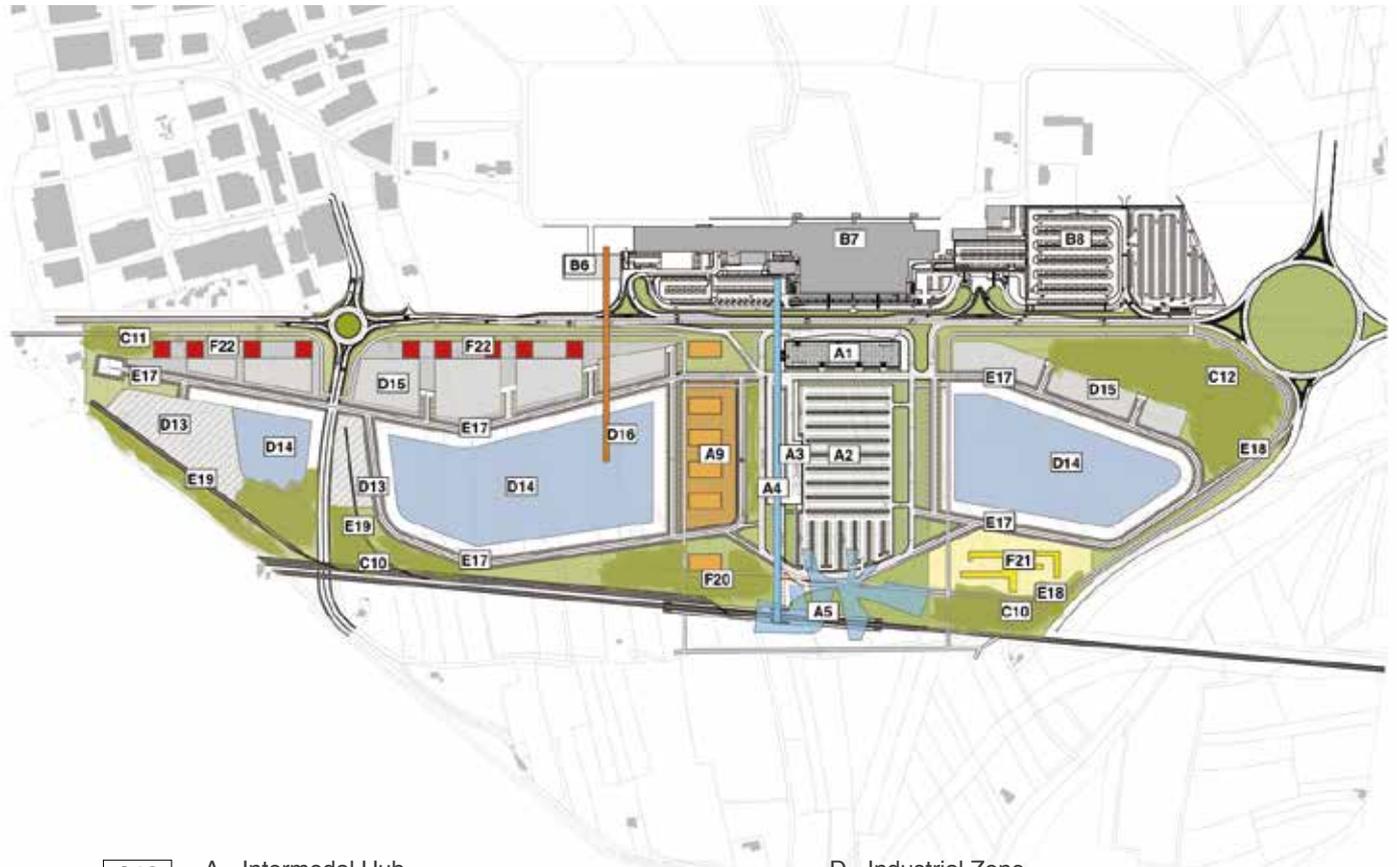
The scenario is set in a context of growth and economic recovery at various levels (regional and local).

The urban and infrastructural operation follows the “ideal standard” scenario, leveraging the Intermodal Hub as an entry/exit point of the system, and serves the Eastern and Western sectors with high-capacity one-way internal loops (3000/3200 TGM).

The hypothesis investigates the possibility of maximum saturation of the area up to the limit of the service level provided by the Intermodal Hub. To go beyond that, would require a total revision of the model and the layout of the roadway system constituted by the roundabout towards Grado, the airport section of the SS14 and the new roundabout on the SS14 in Begliano.

Through several traffic administration and rationalization instruments, it will be possible to use the road network at maximum capacity, in order to ensure maximum settlement density. Beyond that, the system would go into a crisis (congestion and blocking). The study provides for a mix of functions that integrate manufacturing/production activities, logistics and “differentiated logistics,” the City Port systems (servicing the District, but also Trieste and Gorizia) and Eco-Logistics, in addition to services and complementary activities supporting the main activities.

Figure 12. Crisis Scenario, master plan.



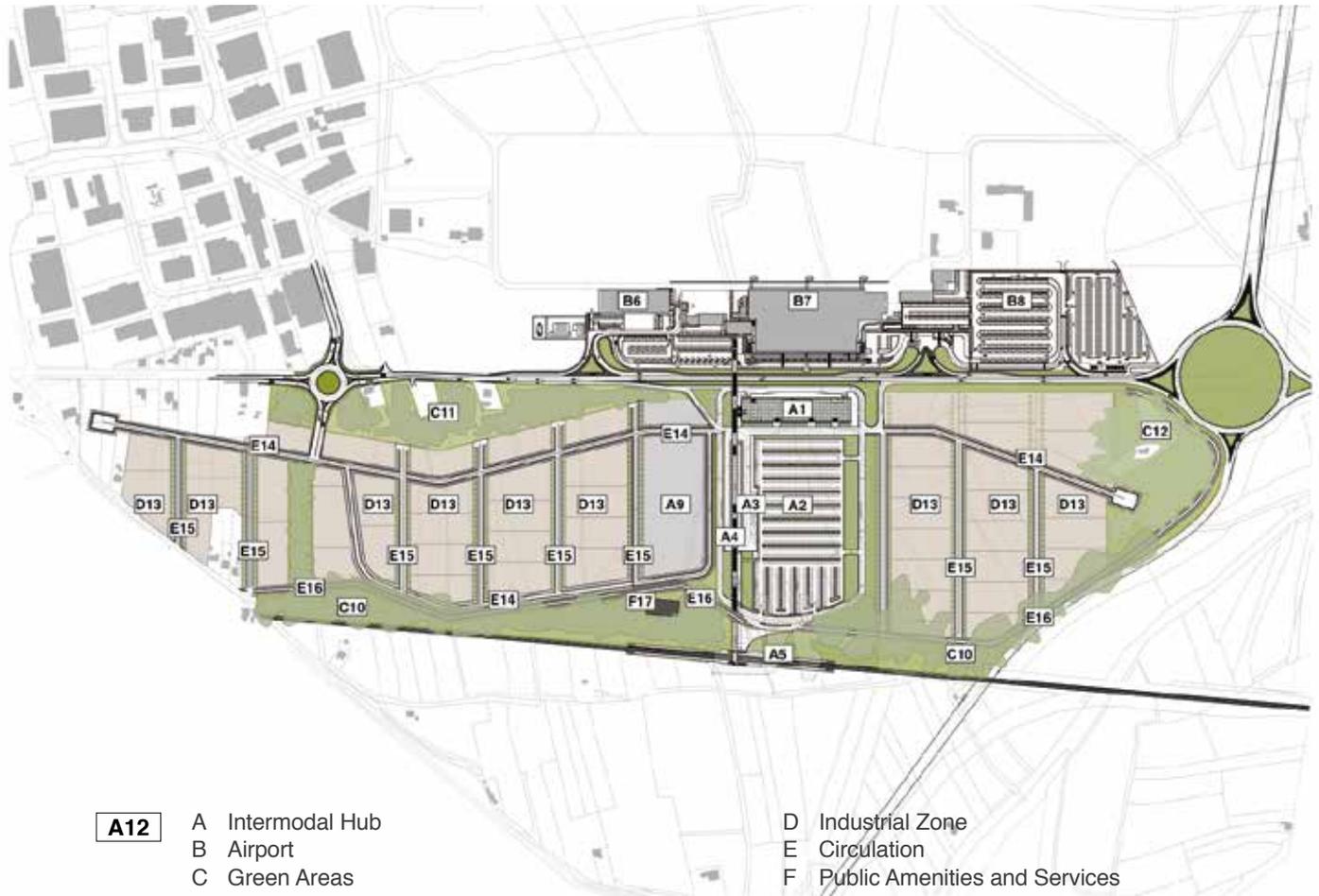
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|--|---|
| <p>A12</p> <ul style="list-style-type: none"> A Intermodal Hub B Airport C Green Areas | <ul style="list-style-type: none"> D Industrial Zone E Circulation F Public Amenities and Services |
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| <p>A12</p> <ul style="list-style-type: none"> 1 Parking Structure 2 Parking 3 Bus Terminal 4 Pedestrian Overpass 5 Railway Station 6 Freight Station 7 Passenger Station 8 Existing Parking 9 Intermodal Hub Expansion-Business District Area D13, D14 and D15 10 Park / Green Buffer next to the Railway 11 Agricultural Land next to SS [National Route] 14 | <ul style="list-style-type: none"> 12 Green buffer next to the Roundabout 13 Intermodal [rail-truck] Exchange Area 14 Mixed-use Logistical Area 15 Areas for Logistics and Storage 16 Conveyor belt [elevated or entrenched] connecting freight station and logistics zone 17 Main Circulation 18 Bike-path 19 Rail Tracks 20 Cafeteria 21 Child-care 22 Passenger Services |
|---|--|

3.0.2. Settlement Model

The general structure behind the Crisis Scenario represents the evolution of the Optimal Scenario, following the settlement model illustrated above, with the difference that the penetration roads are eliminated to allow further development of the built areas, with a greater volume capacity that can accommodate production and logistics functions requiring large operational volumes.

Figure 13. Minimum reversible scenario, master plan.



- | | |
|---|--|
| <p>A12 1 Parking Structure
 2 Parking
 3 Bus Terminal
 4 Pedestrian Overpass
 5 Railway Station
 6 Freight Station
 7 Passenger Station
 8 Existing Parking
 9 Intermodal Hub Expansion
 10 Park / Green Buffer next to the railway
 11 Agricultural Land next to SS [National Route] 14</p> | <p>12 Green buffer next to the Roundabout
 13 Intensive micro-agriculture
 [greenhouses and orchards]
 14 Main Circulation
 15 Secondary circulation
 16 Bike-path
 17 Cafeteria</p> |
|---|--|

3.0.3. Road System: Hierarchy and Types of Roads

The vehicular handling system reproduces the layout proposed for the other scenarios, with the elimination of the penetration roads both in the West and East Sectors. Based on the need for greater interchange of freight traffic, it will be possible to create dedicated rail lines and an automated surface or underground link between the cargo section of the airport and the logistics area. Also the bicycle-pedestrian link

follows the proposal made for the other scenarios, with a dedicated lane in the South of the area.

3.1. *Settlement Models*

3.1.1. Main Functions, Induced Uses

The Crisis Scenario is an evolution of the Optimal Scenario, therefore it starts from the same assumptions regarding the manufacturing/production functions, combined with a significant presence of the logistics sector, bringing the area towards a situation of saturation and functional stress that does not allow a broader implementation of the planned functions. This hypothesis is configured as a case of success, which will require further development outside the scope of this research.

3.1.2. Levels of Flexibility and Possibility of Modification

In this scenario, the flexibility of the area is brought to a limit in terms of saturation and further evolution. Within the operating limits described above, the Sectors provide considerable implementation flexibility, with the creation of functional aggregates of various sizes up to the construction of two main buildings containing several related activities or large industrial or logistical plants.

3.1.3. Land Use, Density, Green Areas, Economical Convenience and Pragmatism

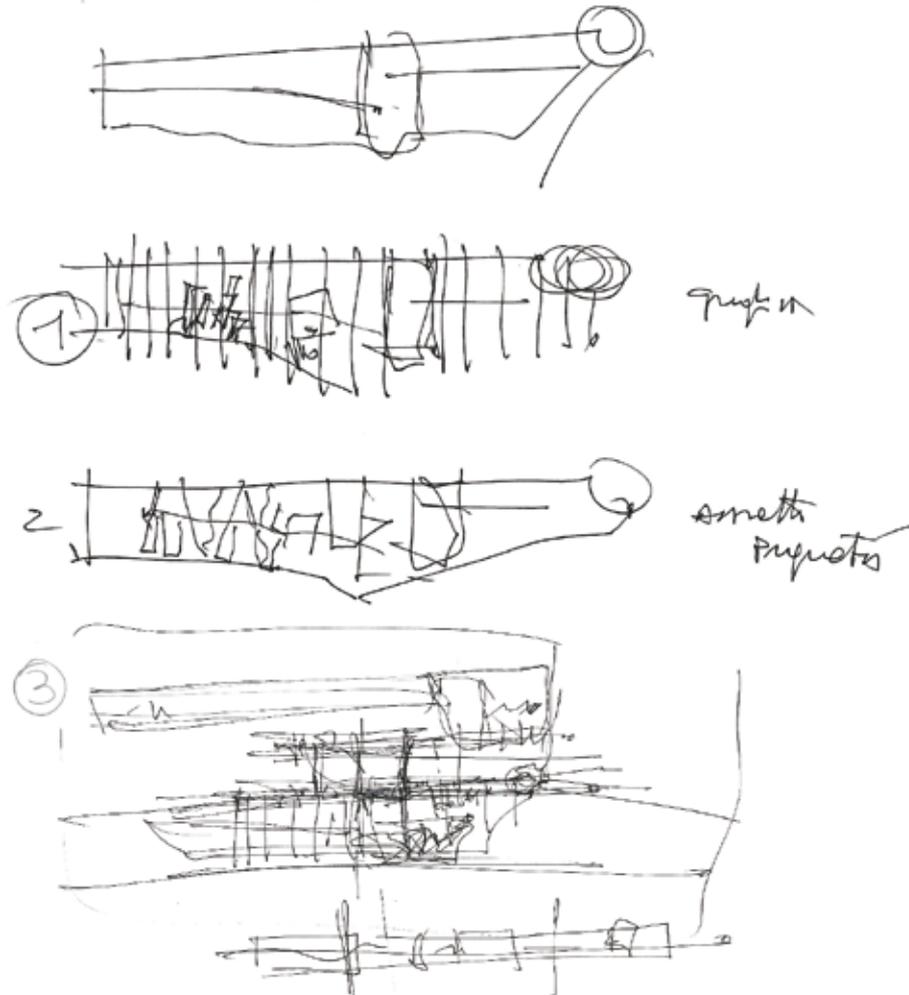
In this scenario, land use is brought to the maximum of its potential, while maintaining a distribution system capable of facilitating the densification of the built areas. The green areas, on the perimeter of the area, are confirmed. This in order to accommodate urban development standards in a concentrated number of locations, optimizing the design of the built areas, and to mitigate the impact of the production and logistics centre on the rest of the territory.

3.2. *Urban Layout and Contextualization of the Scenario*

3.2.1. Stakeholders and Investors

The main stakeholders of this scenario are entrepreneurs, both at the local and international level, able to harness the considerable potential offered by both the Intermodal Hub and the Friuli Venezia Giulia airport. The creation of a production and logistics system of such proportions could also offer the opportunity for the creation of an induced demand able to stimulate the creation of more companies operating in the production and service sectors.

Figure 14. Sketches for the different scenarios.



3.2.2. Relations with the Intermodal Hub

The Intermodal Hub is the backbone from which the road system of the two Sectors branches off, defining the building areas and their dedicated open spaces. Besides contributing to the formal definition and roadway layout of the production and logistics areas, the Intermodal Hub, integrated with an additional direct connection with the cargo section of the airport, is the engine of the logistics sector.

3.2.3. Connections to the Context

The connections to the surrounding area and the road system are mainly implemented through the ring of the Intermodal Hub. In addition to this primary link, there is a connection to the road system in the West of the area. To the South, the connection to the railway, which is strategic both in terms of passenger traffic related to the airport and commuter traffic to and from Trieste, plus a bicycle route connected to the local bicycle and pedestrian system, complete the whole infrastructure.

3.3. Conclusions

The Crisis Scenario represents the maximum sustainable development for the area concerned by the study. The production and logistics activities benefit from the opportunities offered by the simultaneous presence of the airport and the Intermodal Hub, with a saturation logic beyond which it would be necessary to expand the facilities beyond the limits of the investigation carried out so far.

4. GENERAL CONCLUSIONS

At the conclusion of the three simulations, the study has found some characteristics and functional vocations in certain areas within the Sectors that undoubtedly can be defined as the invariants of the project. These are constituted by the filter areas on the perimeters of the Sectors, along the SS14 and along the Trieste-Venice railway line; the public green areas that structure the urban layout and the different settlement hypotheses; the main road system with “tangent rings” around the main ring of the Intermodal Hub; the general urban layout that identifies the Intermodal Hub as the centre of gravity of all possible solutions for development of the East and West Sectors. By contrast, it is possible to identify the system variables, mainly constituted by the areas that constitute the “heart” of the use foreseen for each scenario. It is believed that this aspect is important for the “success” of the proposed urban configurations, since it provides a considerable degree of freedom to the business initiatives and needs envisaged for each Sector. This high level of customization of the settlement model and the technical and productive organization will potentially boost the demand for settlement in the Sectors, if accompanied by incentives related to interventions that focus on rational land use, environmental quality and landscape qualification.

Awards

This essay was awarded Honorable Mention at the 2015 THE PLAN Best Paper Award contest. – Ed.

Note

The project of the Intermodal Hub of Ronchi dei Legionari was chosen as a finalist for the GLOBAL AIR RAIL AWARDS in Oslo in 2014 and in Toronto in 2015. Selected by an international panel of qualified experts in the field, it was one of the finalists for two of the nine categories of the event: Concept of the Year and Project of the Year, obtaining the second place in the final ranking. The Global Air Rail Awards reward the design and implementation of the best airport intermodal facilities in the world. The jury expressed its appreciation for the medium and long-term vision of the entire project, thanks to which “it will be possible to achieve positive results, both from the logistical and the environmental. Standpoints. Exploring in depth the strategic vision of the intervention, the project has highlighted its landscape characteristics and the definition of evolutionary scenarios that, offering a broad spectrum of potential uses of the adjacent sectors, will be able to adapt to different future economic conditions.”

Acknowledgment

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Architectural Insertions in a Remote Landscape: Projecting Landscape Architecture for an Extreme Territory

CROSS-DISCIPLINARY STUDIES

Elisa Izquierdo Garcés

ABSTRACT - The development of a landscape architecture project that contains a scientific research and tourism station is being considered in an extreme territory – dynamic, isolated, hard to access - in Exploradores, western Aysén, southern Chile. The territorial characteristics, lack of infrastructure, and limited information about the place to be intervened into mean that its landscape – the subject of this work- is hard to define. This situation leads the research into the development of a first part – analytical, descriptive, and speculative - which will define the remote landscapes of Exploradores, which are not observed physiologically in the territory. The first part will be complemented by the landscape architecture project, which proposes, by architectural insertions, to interpret and express the situation that has been recognized. Supported by a methodology that studies the territory with a four-scale approach, representative aspects of the local landscape will be determined that seek to function as an operative tool guiding decisions for the project.

Keywords: landscape architecture, extreme territory, remote landscape, architectural insertion, western Aysén

The Region of Aysén is located in the midst of the far southern territory of Chile, between 43° and 49° South latitudes. There are diverse physical landscapes in that part of the country. On the coast there is an infinite number of islands and islets that form intricate archipelagos in fragmented conti-

nuity of the Coastal Mountain Range (Fig. 2). The intermediate depression, which takes the form of fertile valleys in the rest of the country, disappears here to give way to the Moraleda Canal. The Andes Mountains are also different from their structure in the rest of Chile, as they lose altitude significantly and have been modeled by glacier activity, containing large ice fields. The region has a wide diversity of ecosystems and contains more than five million hectares of national parks, but the extreme location of this territory has meant that its economic and social development has been slower than in other regions of the country.

IN BETWEEN ARCHITECTURE, TERRITORY, AND LANDSCAPE

According to the Interministerial Committee for the Development of Extreme and Special Zones (CIDEZE),¹ a territory may be considered extreme because of such factors as critical isolation, small and disperse population, poor accessibility, deficient presence of public administration, and low level of socioeconomic development, or because it suffers from a deficit in road, port, airport and telecommunications infrastructure. All of those characteristics are present in Aysén. One can see, however, that they are the result of a bigger reason that encompasses a large part of the territory of the region, mainly on its western side, which is the dynamism

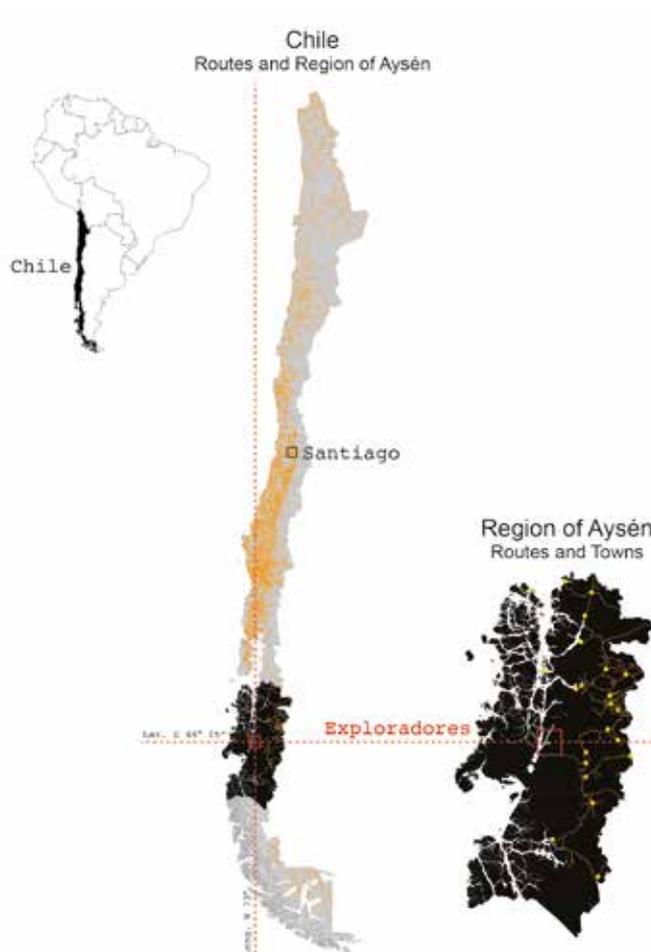


Figure 1.
The region of Aysén within the territory of Chile.

of the territory, climatically, geomorphologically, and environmentally, which makes it a fragile and unstable territory for human habitation. On the other hand, the roads and populated centers are currently grouped mostly on the eastern side of the region, as a result of the disjointed geography of the western side, which is largely unoccupied, with difficult access to the interior and large surfaces that remain free of intervention.

This research arose from the commission to develop a landscape architecture project as part of the program of a scientific research and tourism station in the sector of Exploradores, a valley that culminates in a bay in western Aysén.² The territorial characteristics, lack of infrastructure, and limited information about the place to be intervened make its landscape – the subject of the work – hard to define.³ This situation leads the research to develop a first part – analytical, descriptive, and speculative–, which will define the "remote landscapes" of Exploradores, which cannot be easily observed physiologically in the territory.

The analysis and conclusion of the first part will guide the development of the architecture project, influencing its implementation and, therefore, its form and the way it is located in the place. Thus, the categorization of "extreme territory" does not only suggest that it is difficult for man to live in those territories as a result of their determining physical, geographic and

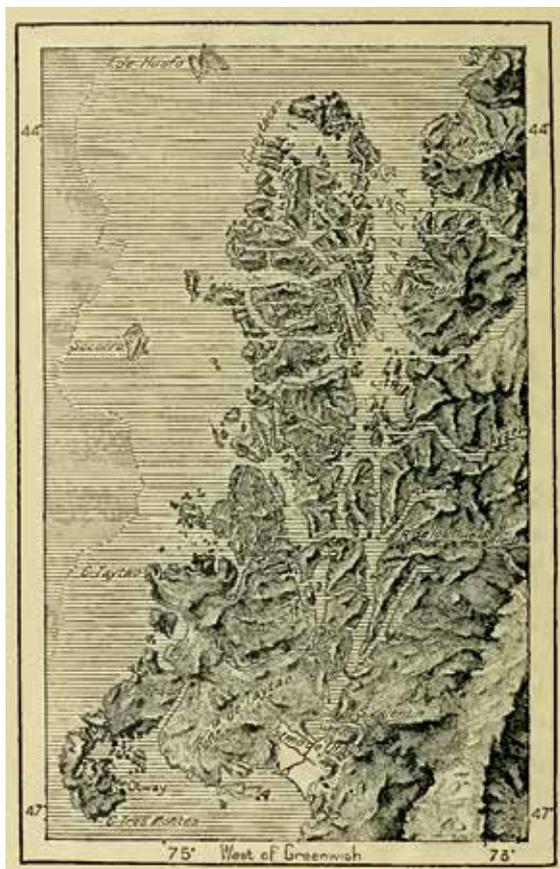


Figure 2.
Chonos Archipelago,
West Aysén. Elisée
Reclus, 1879-94.

social conditions, but it should also promulgate an interest in new forms of settlement in those territories that arise from the differentiated development of those spaces and their inhabitants.⁴

Architecture in Extreme Territories: Differentiation of Two Kinds of Settlement Based on the Landscape

Although it is interesting in architecture the way human beings have settled in extreme territories, a new differentiation arises among these kinds of settlement. There are some kinds of settlement where their form and placement only answer to practical territorial facts for inhabiting and maintaining a program, and some that answer, as well, to a landscape that is dominated by its architectural form and its location.

Agustin Berque, in his search to recognize indications that mark the birth of the landscape, adopts six criteria that, in his opinion determine whether a culture has integrated "thinking through landscape."⁵ One of these criteria is "architecture planned to enjoy beautiful views."⁶ Based on that criterion, he makes a distinction between constructions of different cultures, some that materialize a view of the outdoors, like the *asqqif*⁷ of the Alto Atlas in the Seksawa valley (Morocco), and others that make the view



Figure 3a.
Patagonian *estancia*
in Magallanes.



Figure 3b.
Settler's house
in Aysén.

converge on an interior courtyard, like Roman villas or Arab houses. Likewise, returning to the territory being studied, one can see constructions in Patagonia that aim their view at the landscape, where this is the subject of a project, and others that concentrate their view inwards, defensively, ignoring the landscape (Fig. 3).

This orientation for the landscape from architecture is seen less frequently in Aysén than in other regions and provinces of Patagonia, like Magallanes, with a recognized architecture of estancias,⁸ where galleries look outwards, as a result of the implementation of European architectural models.⁹ Based on local contemporary architecture in Aysén, on the other hand, we can see that the landscape is undervalued as a natural resource of the territory, but not the material resources that can be extracted from it, as expressed in the woodwork used in its architecture.

In addition to undervaluing the landscape in the region, this is an "extreme territory", a characteristic that especially affects its western side and consists of difficult accessibility to the interior, producing an absence of visual landscape in an important percentage of the surface area. This factual condition of the physical space leads us to wonder how to reveal the landscapes of a territory that cannot be seen by human beings in order to make it serve a productive use in the sciences and tourism.

Landscape: Vision and Representation

Two dominant forces have been identified in the practice of landscape architecture that, paradoxically, are not closely related to the case being studied: the first is the intention to "re-naturalize" places that have been drastically intervened into through transformation of their ecology, and the second is the revaluing of the cultural heritage of places, as interpreters of history and human interventions in the territory.

Here we are dealing with the opposite of what has traditionally been undertaken by the discipline, considering that in this context considerable extensions of territory have been preserved. Thus, the problem facing this landscape project is related to the intention to intervene in an unaltered place, preserving its original ecology, but giving a productive use to its landscapes, which starts by making it part of a cultural notion.

The first condition that is necessary for there to be a landscape and for it to be available to humans, is the possibility of seeing it. As we know, the term landscape in the West comes from the Latin word *pagus*, which refers to an occupied territory: countryside, district or town.

Nevertheless, although landscape can be understood as a concrete medium that can be described and manipulated, it is also pertinent to consider its subjective character, "that which is not found in the object, but in the look; (...) and requires prior cultural training as a conditioning basis."¹⁰

This "prior cultural training" is based on the knowledge or imagery we have about a territory, which is the reality, or actual truth – and therefore subjective – that will orient the relationship we establish with each place.

Even geography begins by dealing with the visible aspects of those relationships, as a discipline that examines relationships between forms of human occupation and either natural or created spaces, but then, in the framework of cultural geography, landscape has evolved from being "a reference to the tangible, a measurable set of material forms in a specific geographic area," to "a representation of those forms in varied media," to becoming "the desired, remembered and somatic spaces of the imagination and the senses."¹¹ The concept may be applied, therefore, to those three situations: what is measured, represented and imagined, and each situation shaping it.

We could then include the definition of the term in this description from Michel Collot:

"Landscape is a junction where elements come together from nature and culture, geography and history, the interior and the exterior, the individual and the collectivity, the real and the symbolic."¹²

Remote Landscapes

By "remote landscape" we shall understand the image – mental or graphic, individual or collective – representative of unforeseen physical spaces corresponding to extreme or little known territories.

The unforeseeable – that which cannot be foreseen – may be associated with the dynamic conditions of territories and the difficulty in accessing them and, therefore, seeing them. This is reflected in the fact that those landscapes evoke territories that are recognized as distant, unfamiliar, unexplored, and about which there is little information. In those cases, the image of a place is not formed mainly by a sense of vision but by conjectures and deductions.

In general, working with landscapes involves dealing with the unforeseeable, because of the multiple layers that overlap and are in constant change. However, "remote landscape" refers to landscapes whose territorial complexity means they are also hard to see, where their collective knowledge has been constructed by the description of a few people.

Art and the sciences are some disciplines that have contributed to shaping remote landscapes and their cultural valuation.¹³ By an aesthetically or scientific work, they have conquered those distant, unknown landscapes, like the mountains, the coast, and the forests for the rest of society, participating in the social appropriation of the territory, creating admiration for scenery, or revealing – or suggesting – some mysteries.

Thus, although a "remote landscape" may not have anthropic interventions that denote a culture typical of that territory, through representations or accounts that have been provided of those places we can recognize a cultural view that may provide the basis for a landscape.

That is what happened in a large part of the far southern territory of Chile, which was colonized late, but there are records of explorations that relate the way the landscapes started to be shaped by the different eyes that described the territory. Colonizing expeditions told how hard it was to settle those territories; expeditions to establish borders reported on navigable routes and landfalls; missionary expeditions addressed the history of the aborigines and the way of life in those extreme territories; scientific expeditions charted the geography and the environment that characterized them.

The territory of Patagonia was seen through non-native eyes for the first time in 1501 by the expedition led by Amerigo Vespucci. Successive explorations followed. The first representations of those far southern territories date from the first half of the fifteenth century, and until the mid-nineteenth century the cartography combined empirical geographic notions with symbolic drawings that portrayed the cultural context of the moment, or the author, and gave ideas of the place subject to the observer's experience (Figs. 4, 5).

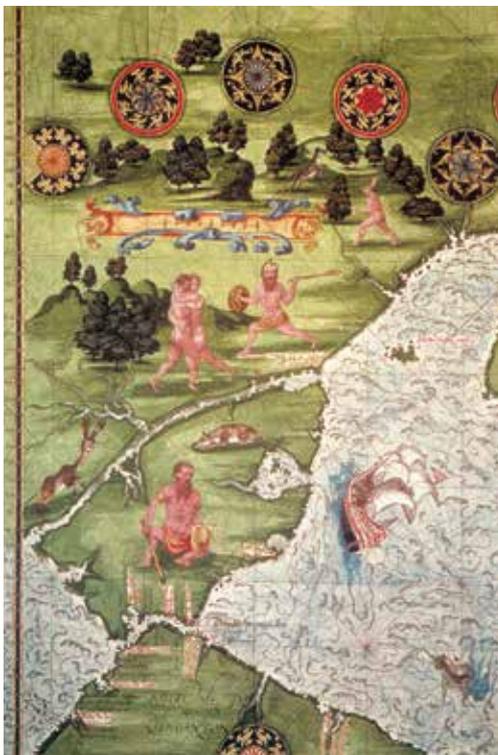


Figure 4. Royaume de Ginganton -Terre Australe, Guillaume Le Testu, 1555.

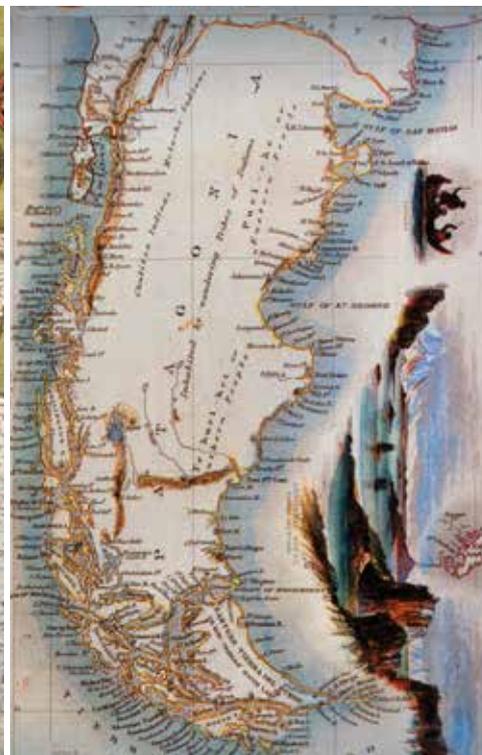


Figure 5. Falkland and Patagonia, John Rapkin, 1851.

Compiling that information enables us to distinguish how those landscapes were shaped on the basis of the languages of each culture, empirical data, legends, and experiences, which were then used and complemented by the following expeditions. Thus, it is clear that shaping a remote landscape also takes place sequentially, with each approach shedding light on the next one, until those lands can be comprehended, controlled, and visited.

Today, with the opening of roads and construction of infrastructure some of those landscapes have already been revealed as "visual landscapes," while others still remain "remote landscapes."

FORMING THE EXPLORERS' LANDSCAPE

We have understood the logic of the sequence in the creation of a remote landscape, as this occurs from the ecological perspective. When studying the ecology of landscapes and regions, Richard T.T. Forman refers to the principle of space-time, which implies that a phenomenon at broad scale is more persistent and stable than those at fine scale. On the contrary, fine-scale phenomena should be more variable in time and space.¹⁴ Those observations encourage us to analyze the territory of Exploradores at different scales of approach: the regional, the valley, the bay, and the marsh (the latter will be the site of the architectural program), where each one is representative of dynamics with different rhythms and effects, but they are affected by the ones that precede them. This methodology is also applied considering that it would be difficult to establish a single limit on the analysis of the territory of Exploradores as its processes are related at different scales. Thus, an attempt is made to form the landscape of Exploradores on the basis of a system of landscapes at different scales (Fig. 6).

Scale 1: Region of Aysén: Landscape of Contrasts

With the information that has been collected, representative of the regional scale, we see a landscape that is understood and measured on the basis of its contrasts, clearly marked between the eastern and western sides. The problem in moving around the region and accessing its visual landscapes lies in the fact that its roads run north-south. The roads that cross it are few, and they run almost exclusively to the eastern side of the region.

This observation shows the importance of opening up new roads that cross the region from east to west, which would make the eloquence of the landscape that much greater. We are encouraged to propose routes that, besides serving their primary function as connectors, would operate as scientific and scenic transects; in other words, their paths would cross the territory in a way that would help to understand its diversity of forms and components, highlighting its contrasts.

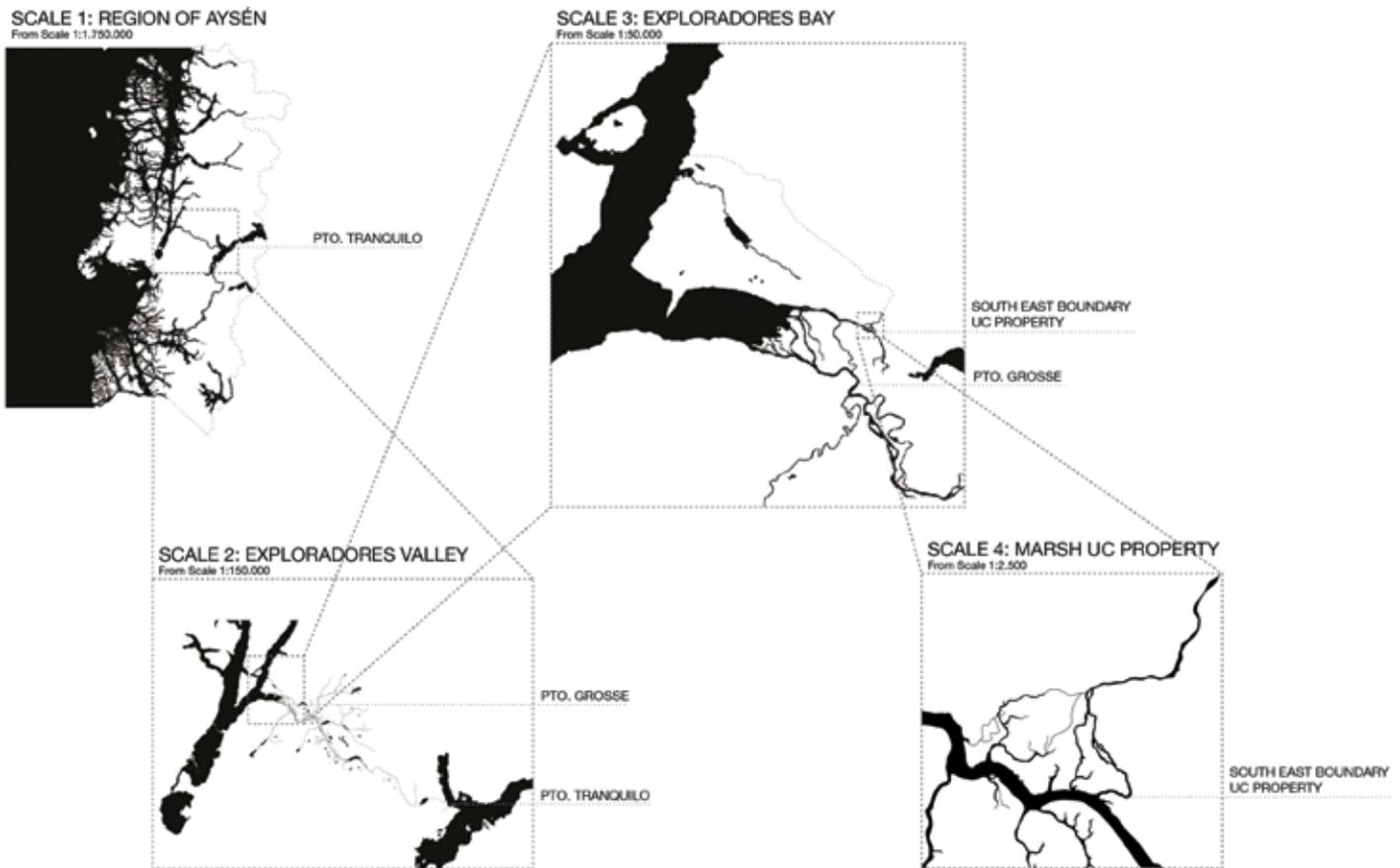


Figure 6. Four scales of approach to the territory.

Scale 2: Exploradores Valley: Crossing Landscape

The Exploradores Valley runs east-west across the region, at the 46th parallel south latitude, bordering Campo de Hielo Norte. Besides crossing the region east to west, as a periglacial valley, it uncovers a number of phenomena that make it very valuable both scenically and scientifically. Those discoveries have been made because of the construction of a road over 15 years ago, which is currently being finished. The road itself becomes, therefore, not only a connecting infrastructure, but also, as Careri proposes, its route becomes a form of expression of the place, and the act of crossing becomes an instrument of knowledge and symbolic interpretation of the territory.¹⁵

To study the variability and scenic value of the valley, the route is studied as a transect that crosses the region from east to west, and reveals, during the crossing, a landscape that acquires consistency by combining the scenic view with scientific understanding (Fig. 7).

The transect is a methodological resource of observation that consists of a line drawn over a territory where transitions are distinguished, where the

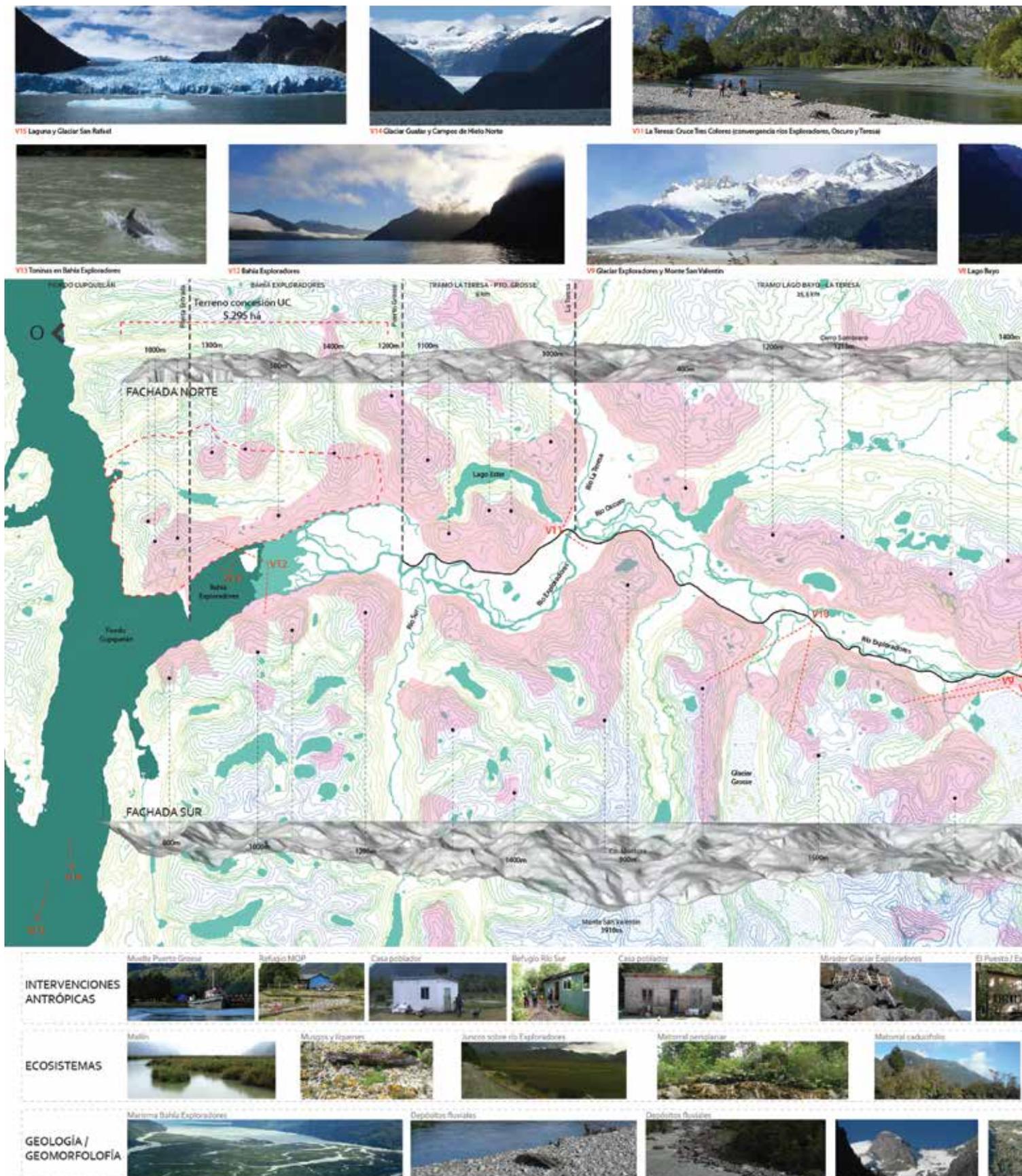
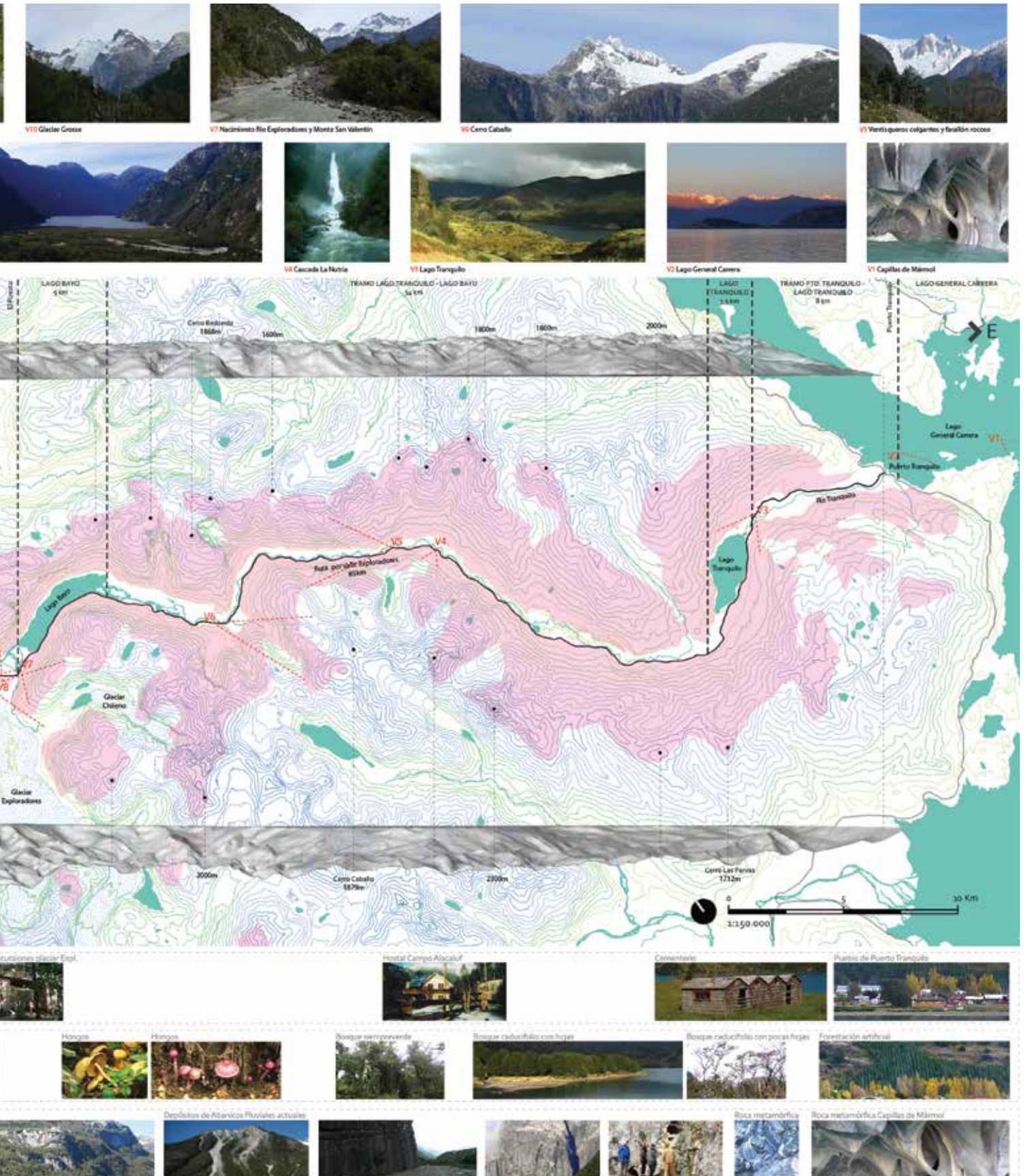


Figure 7. Crossing the Exploradores Valley.



area that is being crossed is recorded. These ecological models enable us to interpret the territory and realize that, if we are going to affect that part of the territory, repercussions will be felt on other parts of the system.

Scale 3: Exploradores Bay: Border Landscape

Bahía Exploradores is located on the western side of the region of Aysén, which is characterized by a predominant marsh composed of fjords and canals. Here, the dense vegetation, steep geography, and undulating bodies of water are some of the factors that have made it hard to penetrate overland to the interior of the fragmented territory. A large percentage of the land has not been transformed at all and lies beyond human view.

In light of the limitations on human view, close and distant views are differentiated, and dynamic processes are identified in each one at different scales of space and time. In close views, in proximity to the territory, daily change in tides and an intertidal area with intense activity involving exchange and biological adjustment can be seen. In distant views, on the other hand, by moving away from the territory, the main mountain peaks and the topography are recognized as well as changes in vegetative structure according to the altitude, types of soil, and erosion.

This situation has determined that the area's visual landscapes are limited to what can be seen from the waters surrounding them, which function as a form of transportation infrastructure that people can travel on by boat. The landscape, framed within those limitations, appears as a landscape of borders that can be seen according to how near or far one is from the perimeter that extends to the sea.

Scale 4: Marsh: Transition Landscape

A marsh is an ecosystem where there is an exchange of fresh water and salt water, which flood periodically because of changes in the condition of the water, affected by tides, melt water or excessive precipitation. Varied ecological transitions take place in marshes that have an effect on changes in the physical and vegetative structure of the territory. This quality of the marsh enables us to identify a landscape in continuous change, which requires an architecture that adapts to the typical conditions of a transition landscape.

The study at that scale of approach was focused on defining the most favorable areas for the main programs of the Research Station, and on defining areas of interest for future study, which would reinforce its scenic value. It is interesting to identify different types of transition in the land, and then to explore them with an architecture that enables us to get closer to them. The project is formulated as means of exploration that investigates the potential of landscape architecture as a medium of expression of remote landscapes: dynamic, little known, hard to access.

FROM REMOTE LANDSCAPES TO THE ARCHITECTURAL PROJECT

After configuring those remote landscapes, we will be able to work on them with the intent to unify, between the empirically existing space, the imagined space – the result of deductions and speculations – and the desired space, which would materialize with the project.

With the analysis of those four scales of approach to the territory, the landscape of Exploradores is characterized as a landscape of contrasts, crossing, borders, and transitions (Fig. 8).

In order for the landscape architecture project to establish an account of the general landscape of Exploradores, which ranges from the regional scale to the scale of an ecotone in an inter-tidal space, the project is developed maintaining these characteristics:

- 1) Highlight contrasts: the contrasts that are present in the forms and processes of the land and the ones that will be created between construction and nature, differentiating an area that shelters human activity and an area in the open air that exposes the rigors of this extreme territory.

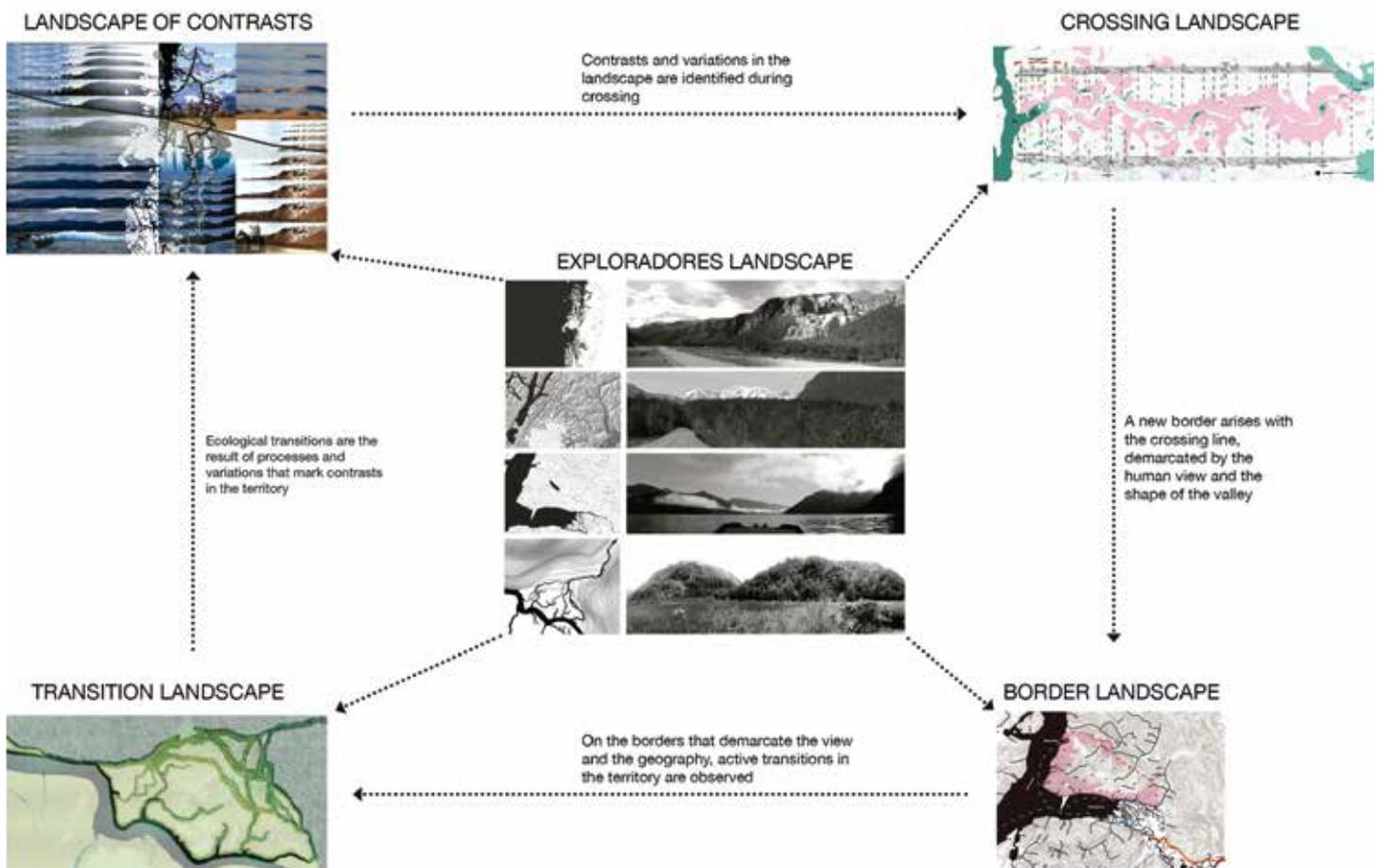


Figure 8. Exploradores landscape diagram.

- 2) Cross the territory and move around it to show a representative section of a variable and dynamic landscape in those lines of penetration.
- 3) Generate new borders of approach to landscapes, demarcated by the viewing area permitted by the position of the project before the landscape.
- 4) Place the project on the borders of ecological transition so that an account can be established on its route and crossings, on a close scale, about the general landscape of Exploradores. (Figs. 9-11).

Architectural Insertions

We have referred to the landscape in relation to vision and representation, making a distinction between "visual landscapes" – the ones that can be seen, involving one’s own experience – and "remote landscapes" – the ones that are visualized in the imagination, generated on the basis of representations, descriptions or accounts of a few people. That distinction

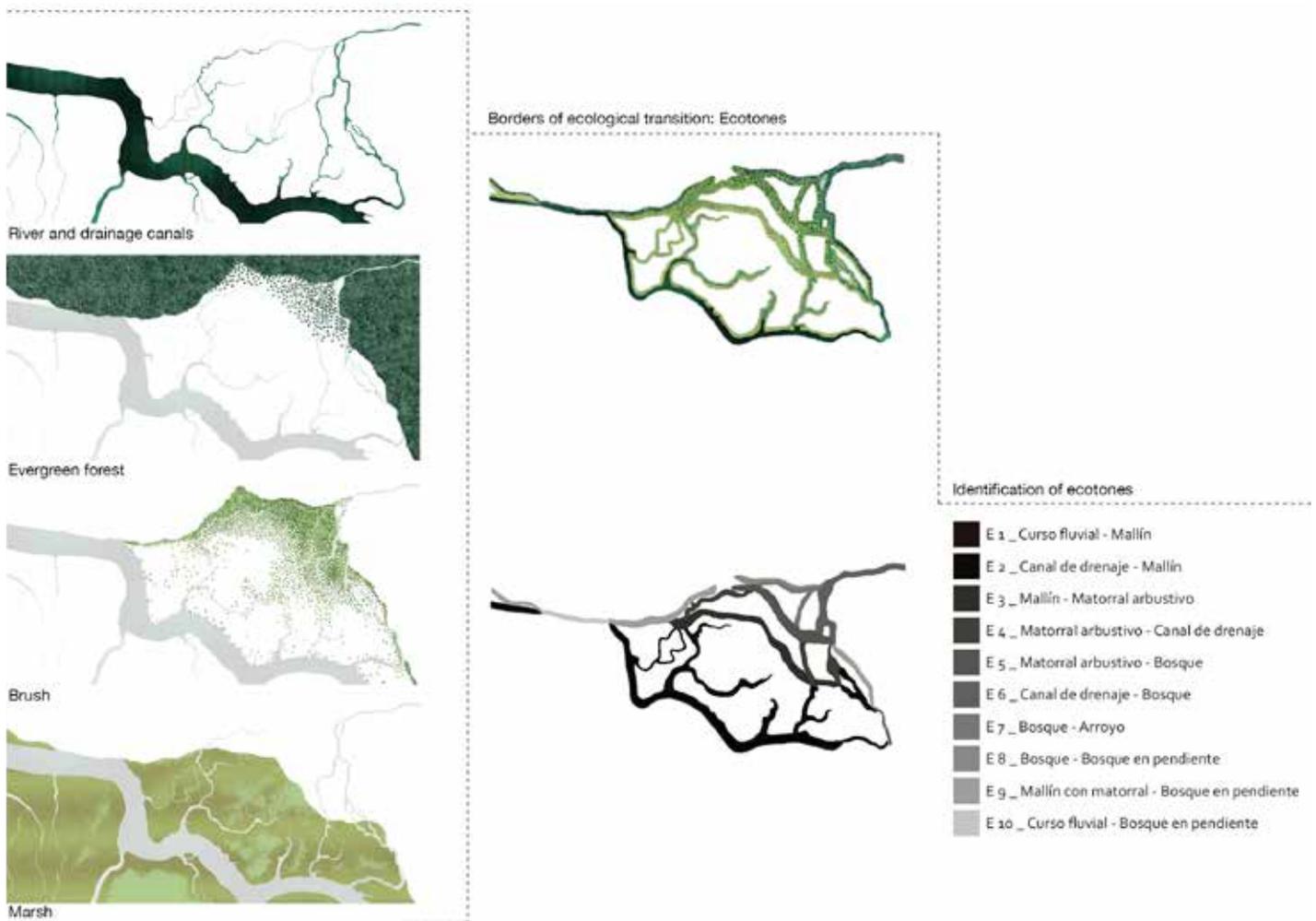


Figure 9. Breakdown of main marsh ecosystems.

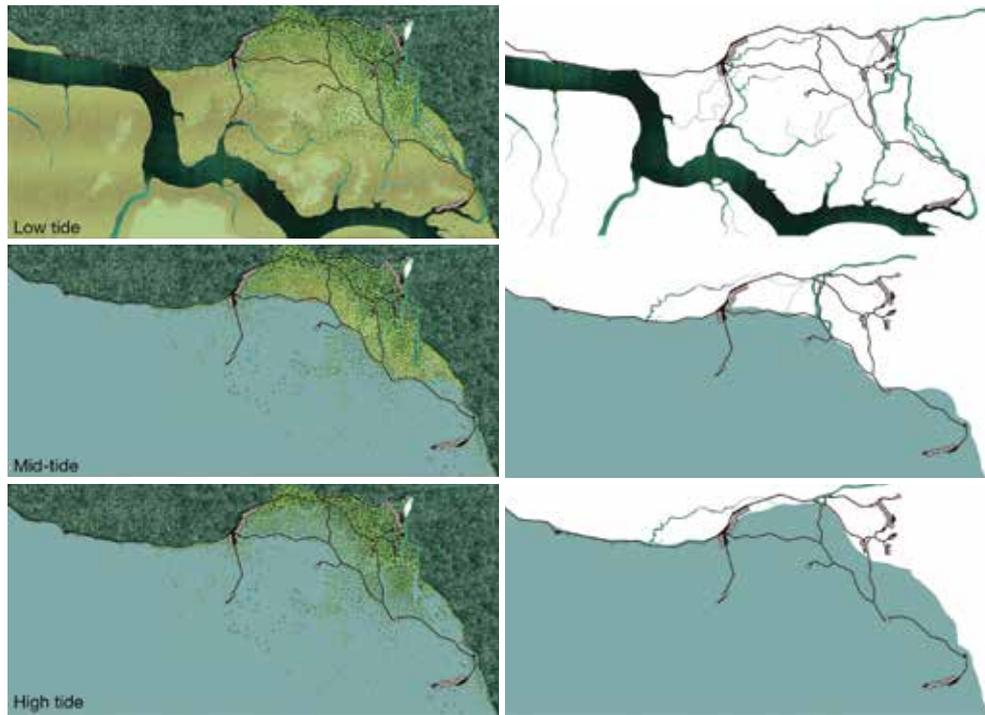


Figure 10. Location of the project with different marsh conditions.

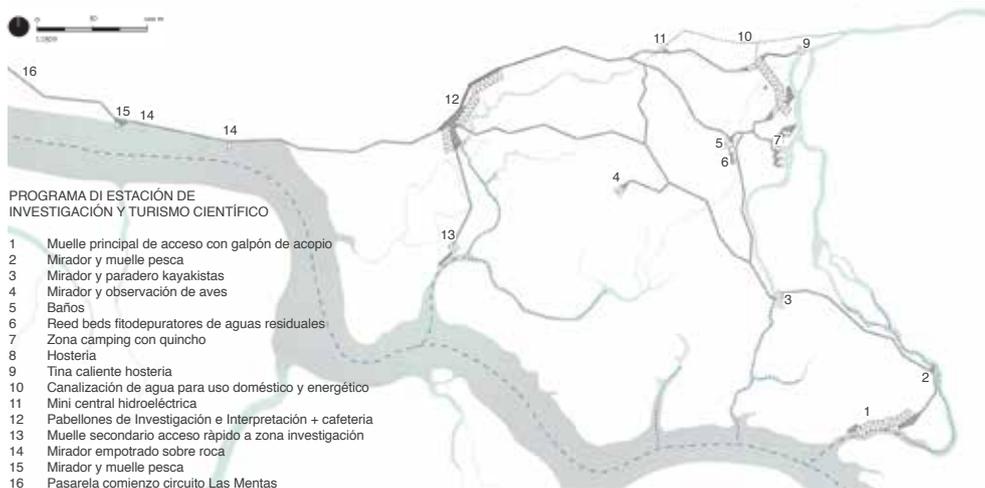


Figure 11. Location and program for scientific research and tourist station.

appears when we wonder how to access remote landscapes visually, which have been recognized as having an implicit value since they exist as a cultural notion.

In response to that problem, the concept of "architectural insertion" arises, which suggests a dialogue between remote and existential landscapes, establishing itself as a mediator between the two. It is referred to as insertion, because from its condition unconnected to natural physical space it attempts to work on landscapes – what is seen and its significance – rather than on the territory, so the latter conserves the typical characteristics that confer value on its landscapes (Fig. 12).

An architectural insertion is understood as a new layer of anthropic use that is set in a place and takes a position in it, attempting not to interrupt natural processes by adapting to them. It takes the form of an infrastructure that permits the entry and permanence of humans in extreme territories that otherwise would not permit it.

The role played by a landscape architect, like an artist that represents those landscapes, is that the architect has the choice of working with strategies that reinforce the original character of the landscape with a personal, but comprehensive, view of the territory to be intervened into, recognizing that the proposed project has the potential of becoming one more element in shaping the landscape.

Design Principles

Thus, the project will include the following principles, in relation to the vision and limits of the view; in relation to the need for a surface area that faces us with something that is not accessible; and in relation to the incorporation of time and movement in the experience of the space:

1) The architecture will enable and frame views of the landscape, operating like a viewer, which directs the eye like the *asqqif* of the Seksawa, but where the spectator with his own experience, knowledge, and interests is the party who will determine the landscape that he is looking at. And nature itself will place limits on the vision, with views that are more closed and others that are more open, but understanding that both views can be equally broad, although they are on opposite scales (Fig. 13).

2) The project for this extreme territory shall include an easy-to-assemble platform system, with prefabricated components, that generate stable soil and absorb the different conditions of each site to which access is sought. This system of platforms will raise constructions off the surface of the natural soil. The project will be formulated as an insertion, a new layer that is placed on top of the territory and makes it possible to access its landscapes without blocking its processes (Figs. 14, 15).

3) The platforms will be attached to pedestrian walkways that make it possible to walk around the territory, adapting to its processes in order to experience its landscapes, discovering a dynamic territory. The route of these walkways should not be random, it should be illustrative of the place to be worked on and reflect a reading of territorial gestures (Figs. 16, 17). Through the operation of working with "architectural insertions" in the territory, a kind of symbiosis between the natural and artificial will occur, as the project alone, without the environment, would not work, and the landscape, without the project, would be relegated to its remote condition. Thus, both the proposed project and the ecology of the landscape should be differentiated as systems that are distinct but constitutive of one another (Figs. 18-21).

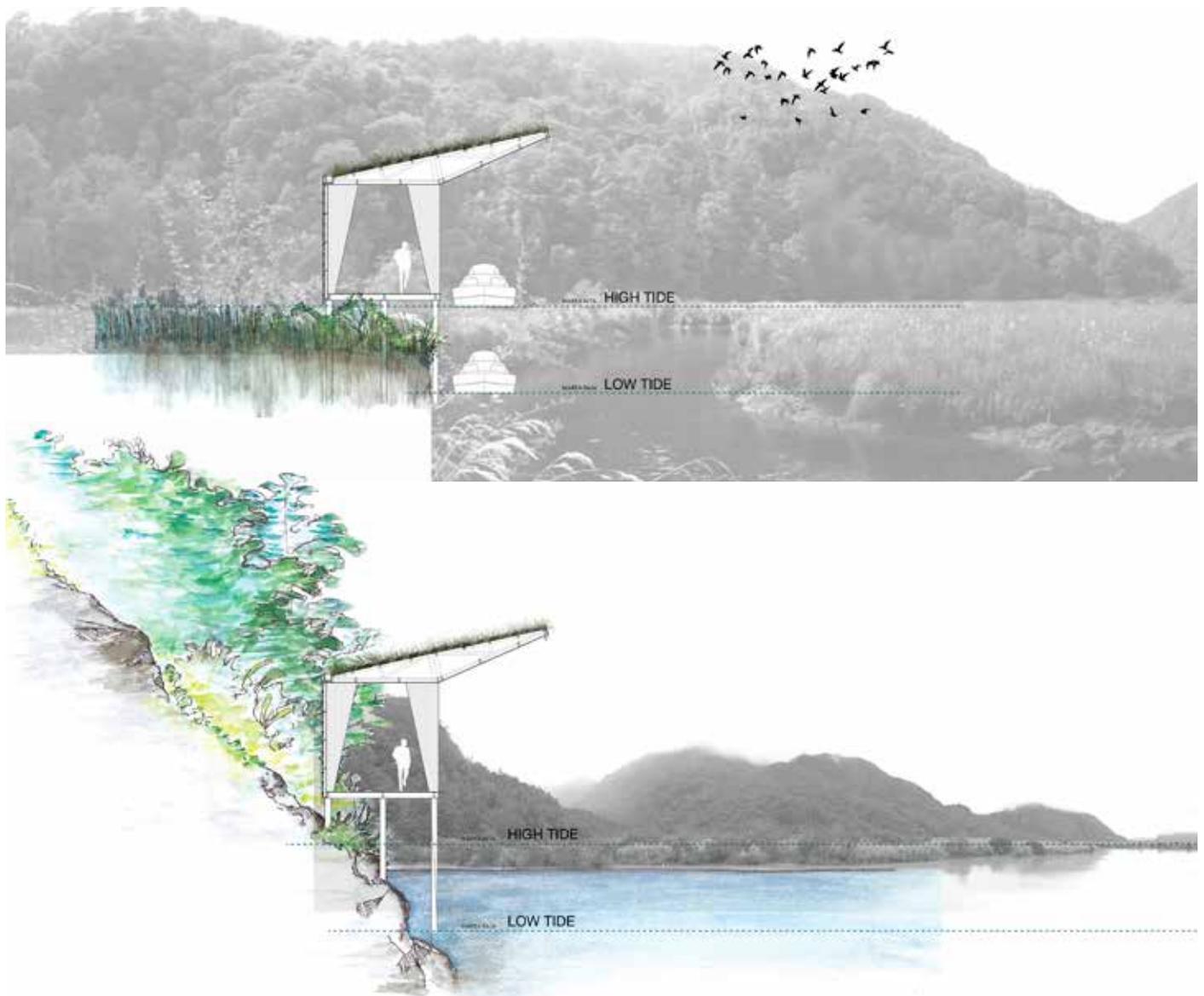


Figure 12. Cross section of modules.

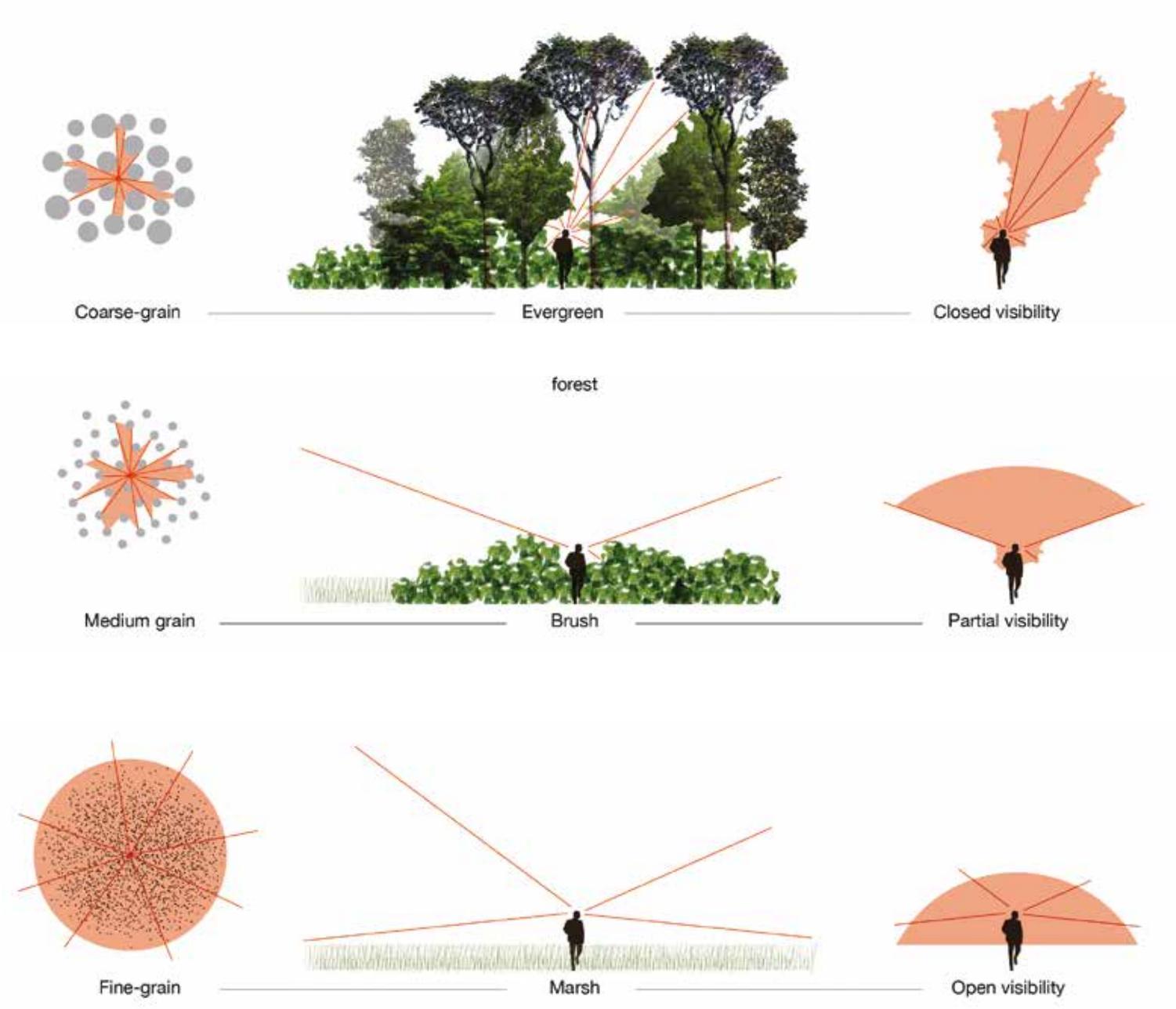


Figure 13a. Visibility study (a).

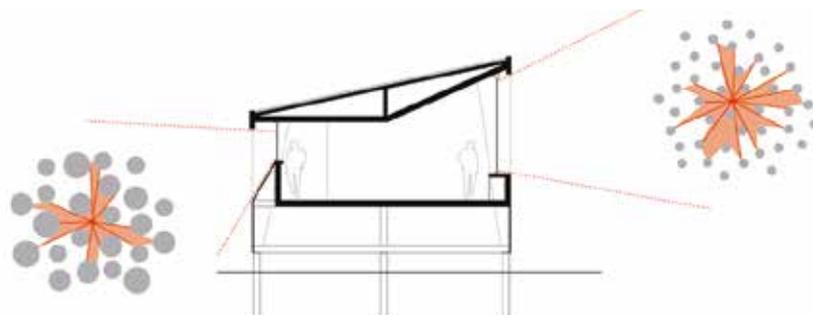
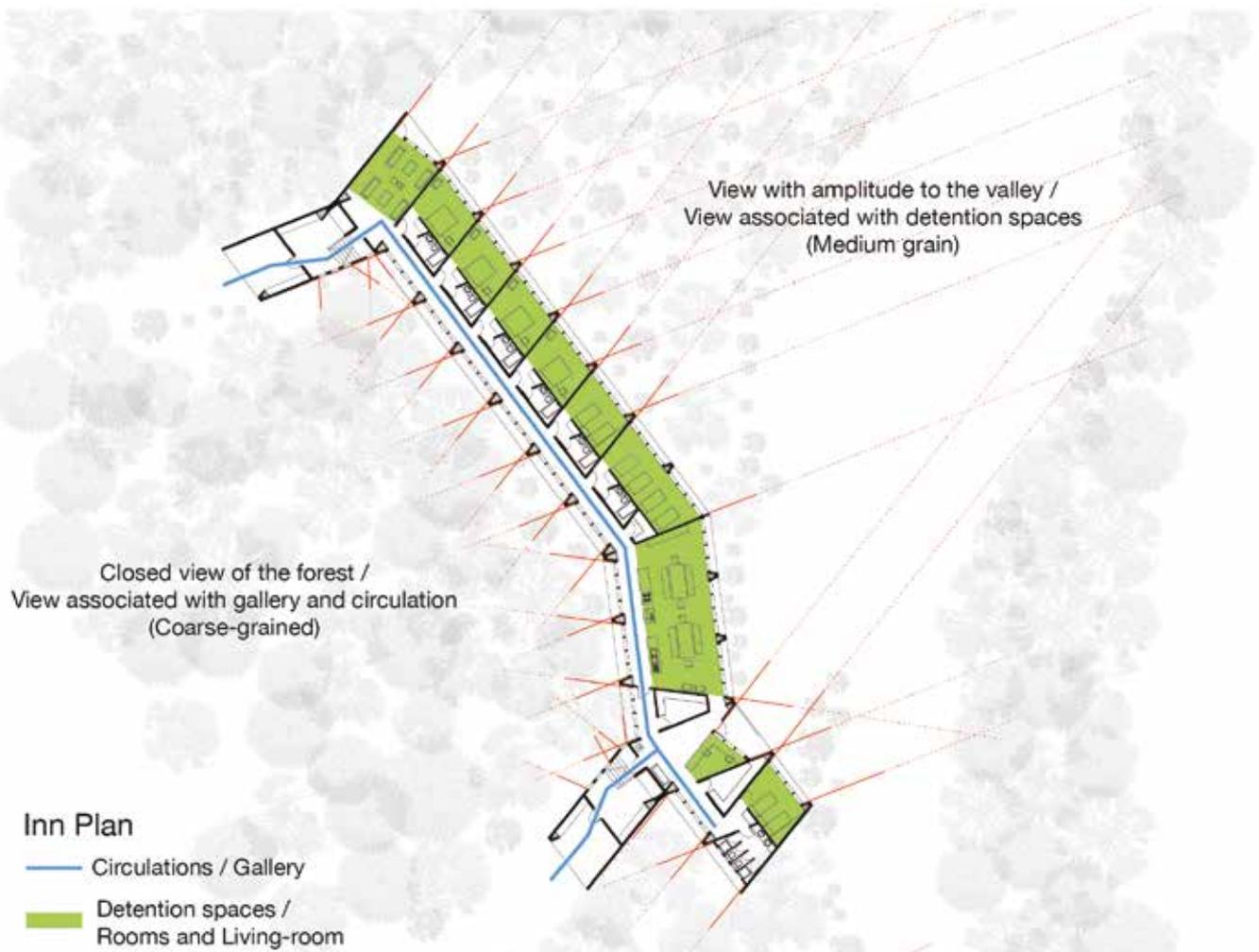
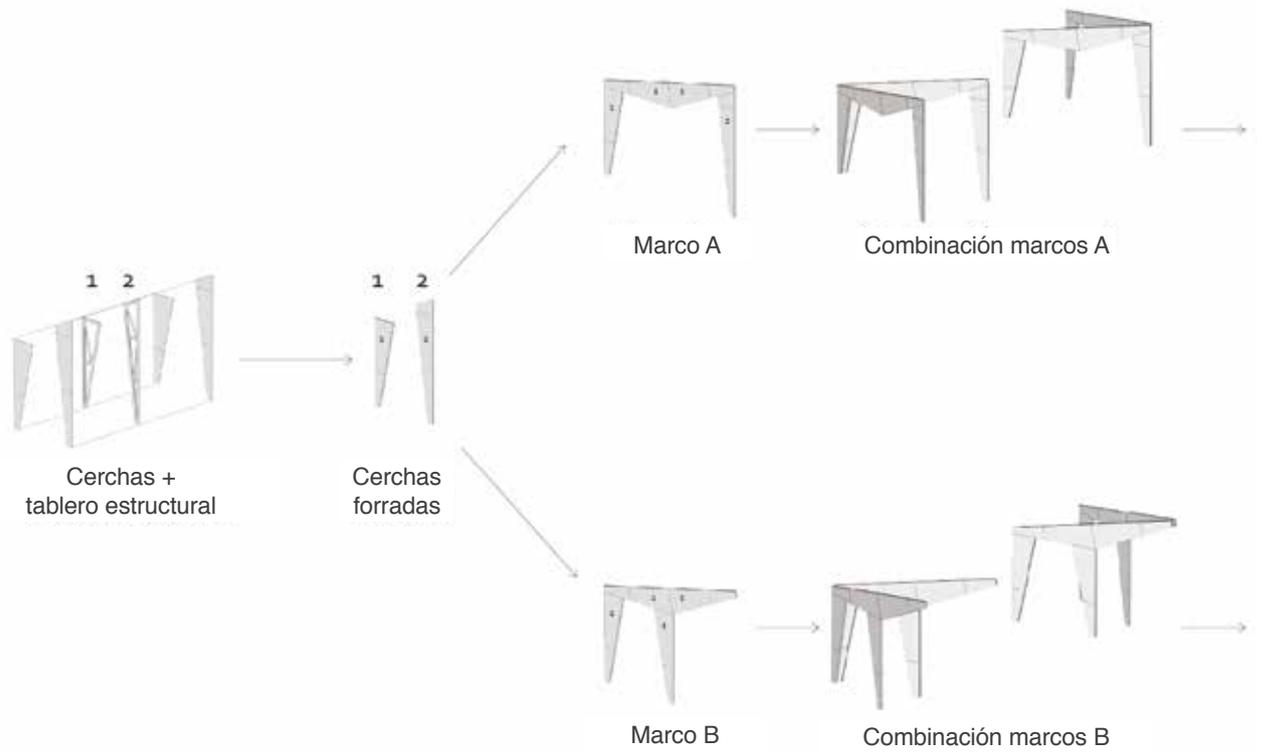


Figure 13b. Visibility study (b).

COMPOSITION OF TRUSSES -----> FRAMES -----> MODULAR ROOFS



UNION OF ROOF MODULES + PLATFORMS

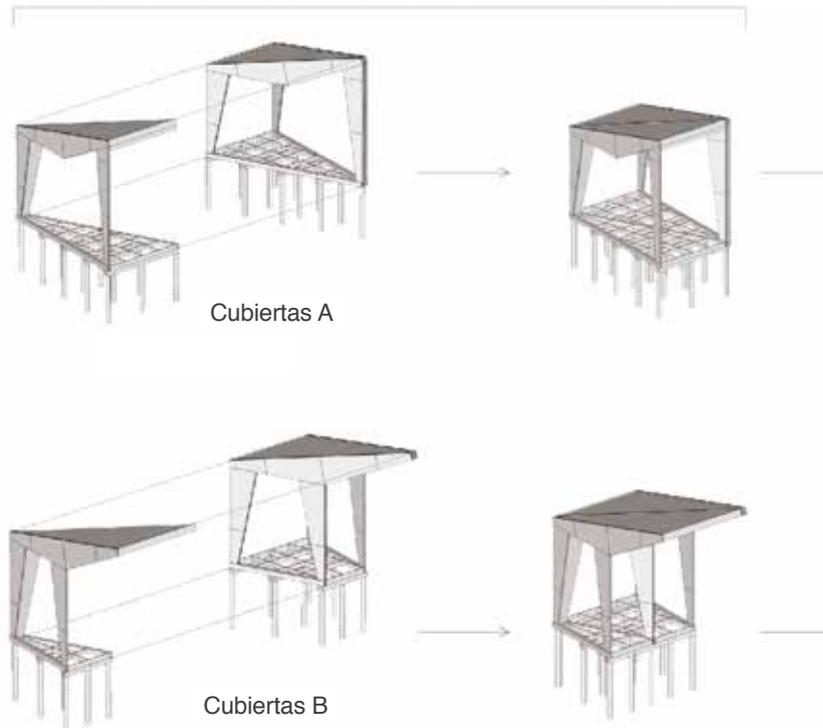


Figure 14a. Components of structural modules (a).



Figure 14b. Components of structural modules (b).

EXPLOITED AXONOMETRIC OF ROOFS AND WALKWAY

Revestimiento con tablero estructural

Planchas terciado estructural 18 mm

Estructura secundaria

Vigas, costaneras y cadenetras de pino
Impregnado + conectores metálicos para uniones

Marcos estructurales

Cerchas forradas en terciado estructural + pletinas
y conectores metálicos para uniones

Envidado plataformas

Vigas maestras y secundarias de pino
radiata impregnado 2"x8"

Pilotes

Rollizos de pino impregnado 8" de diámetro

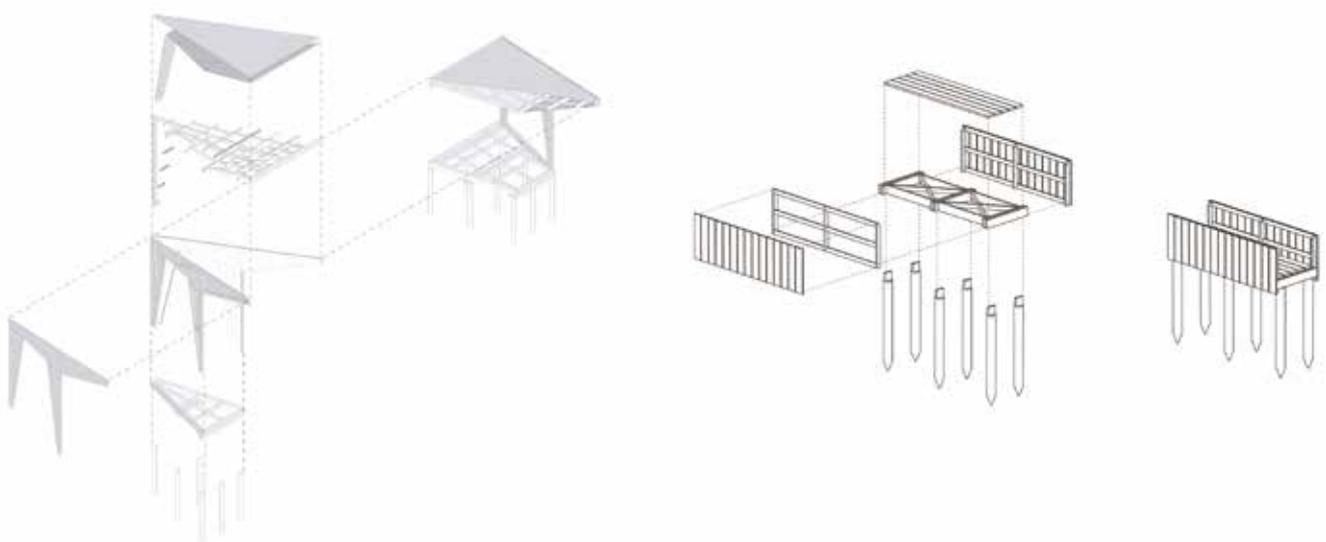
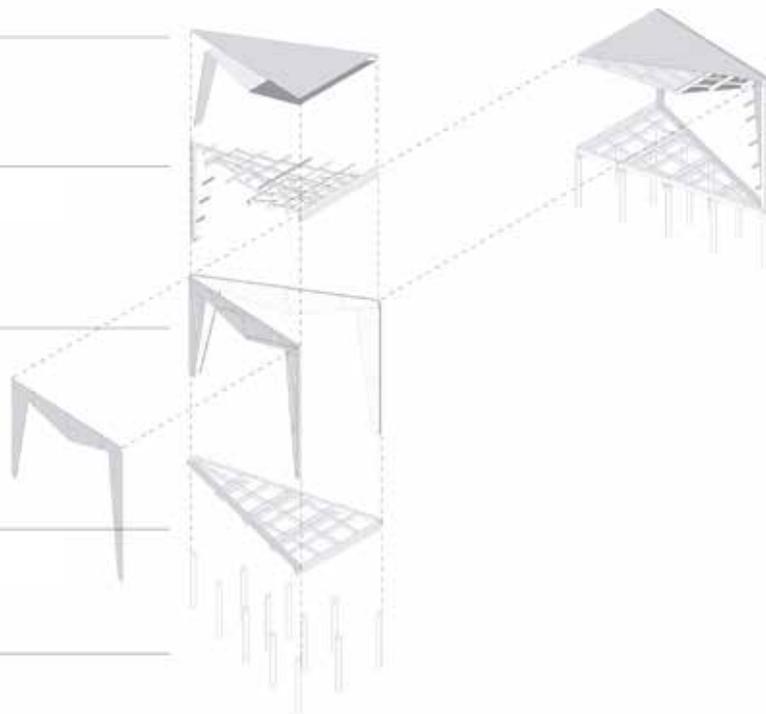


Figure 14c. Components of structural modules (c).

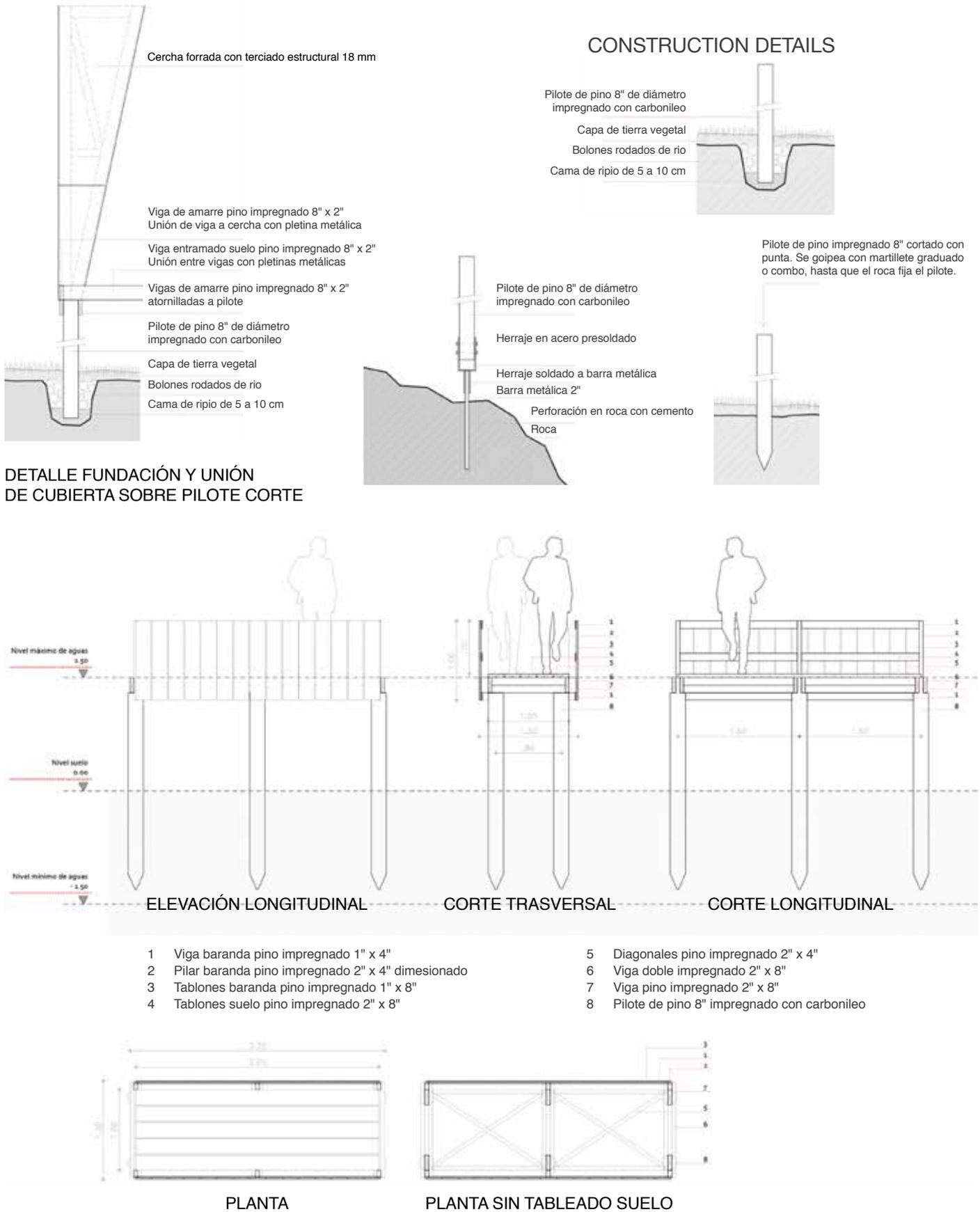


Figure 14d. Components of structural modules (d).

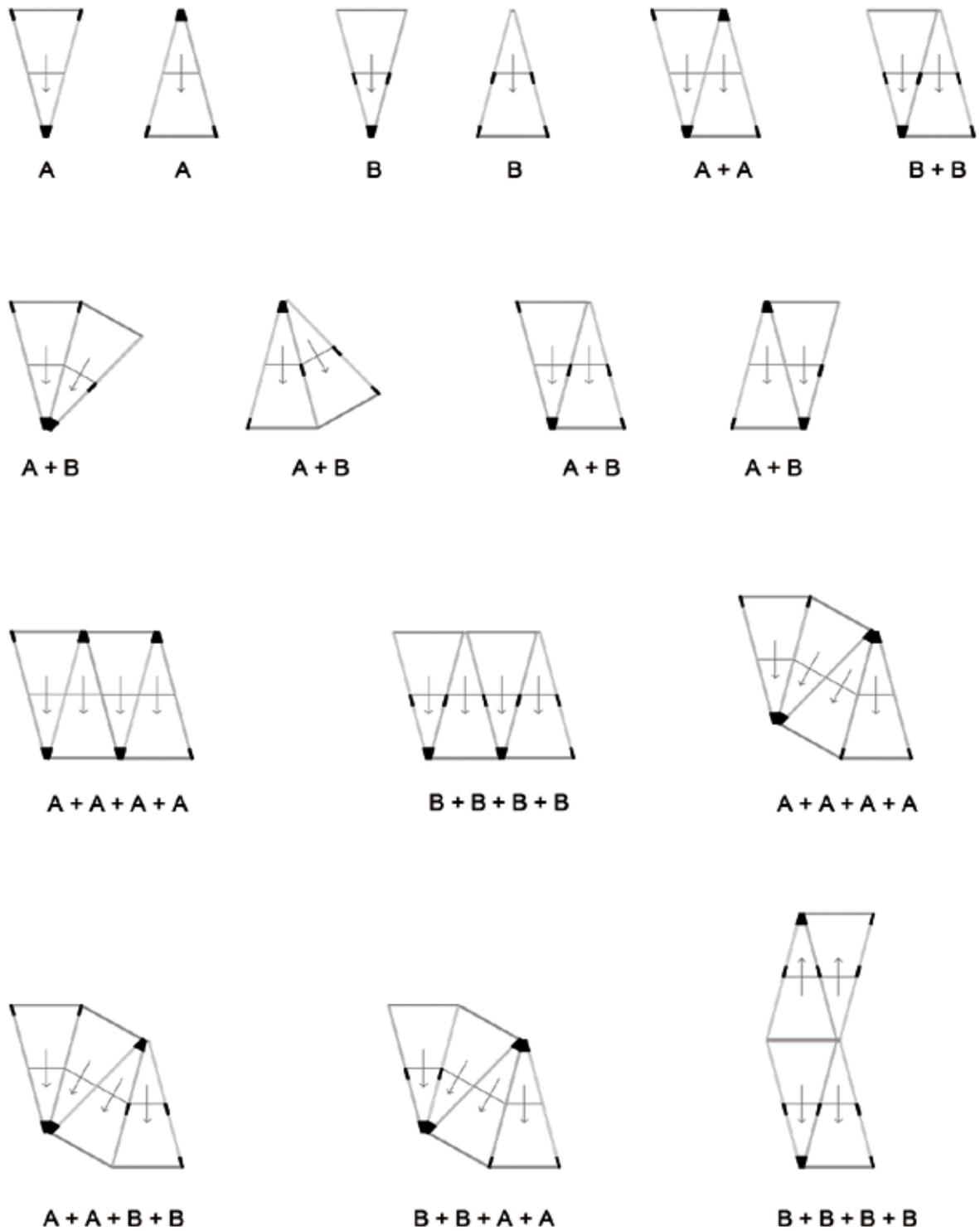


Figure 15a. Modular roofs combinations (a).

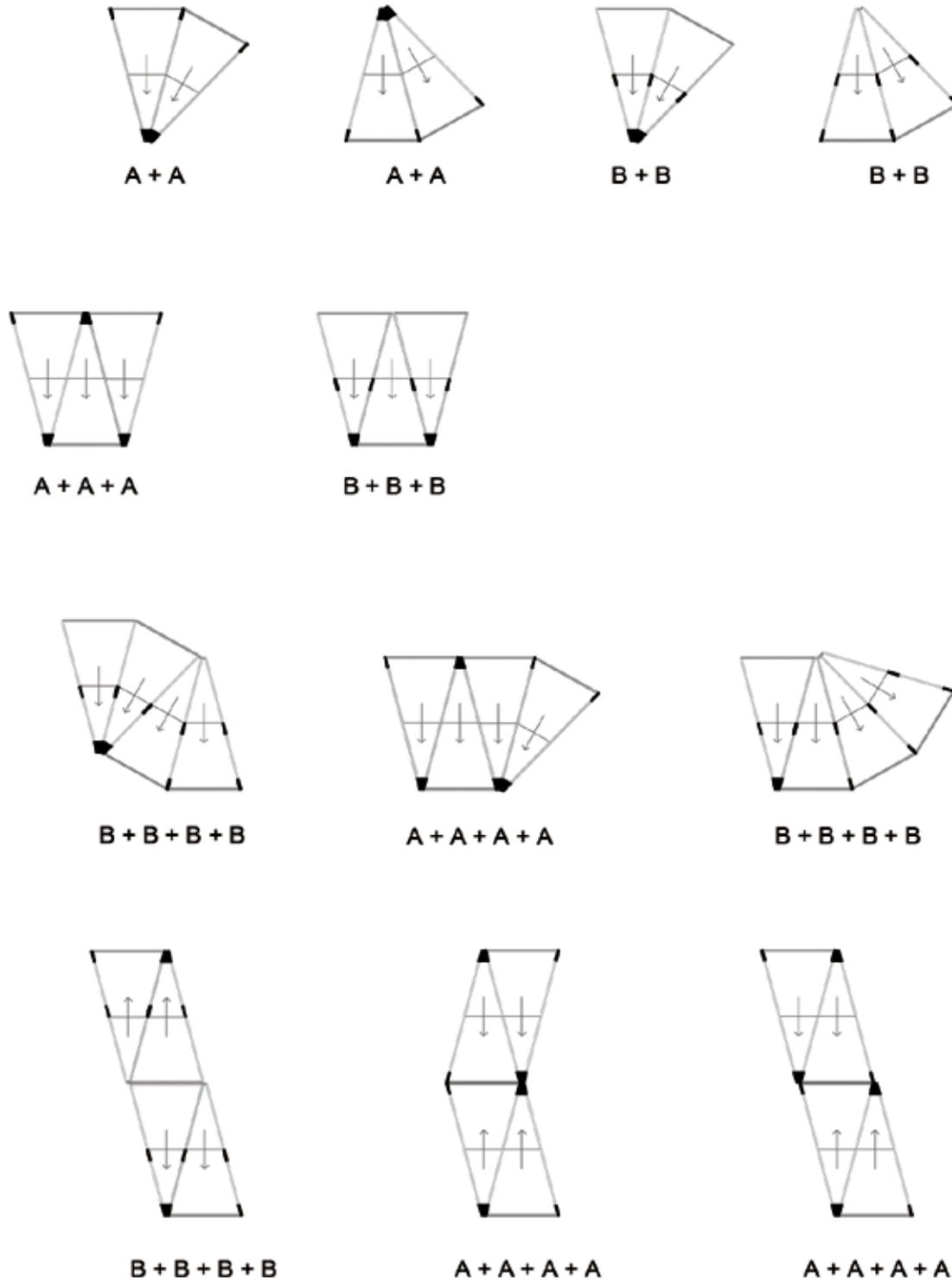


Figure 15b. Modular roofs combinations (b).

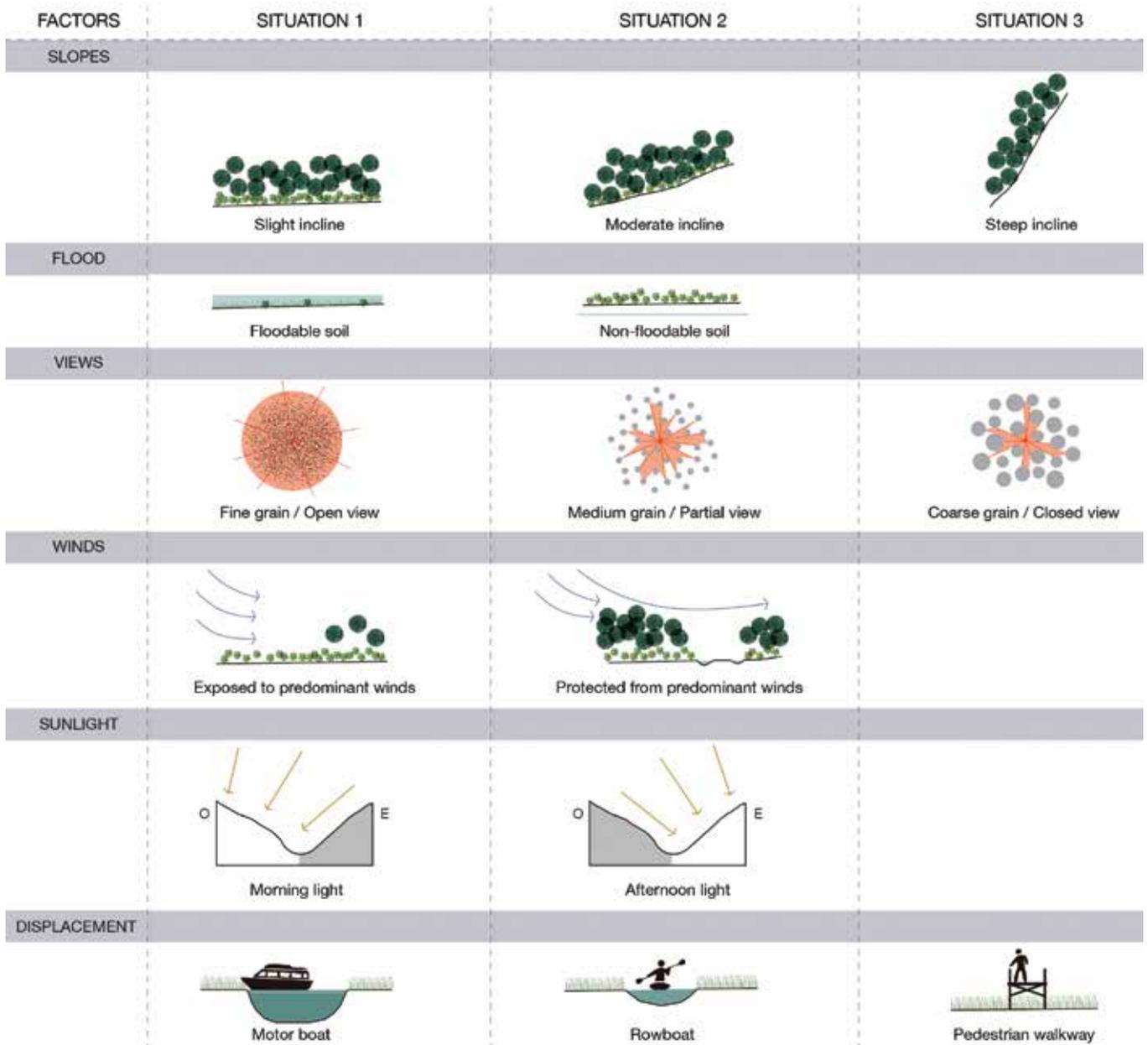


Figure 16. Site conditions.

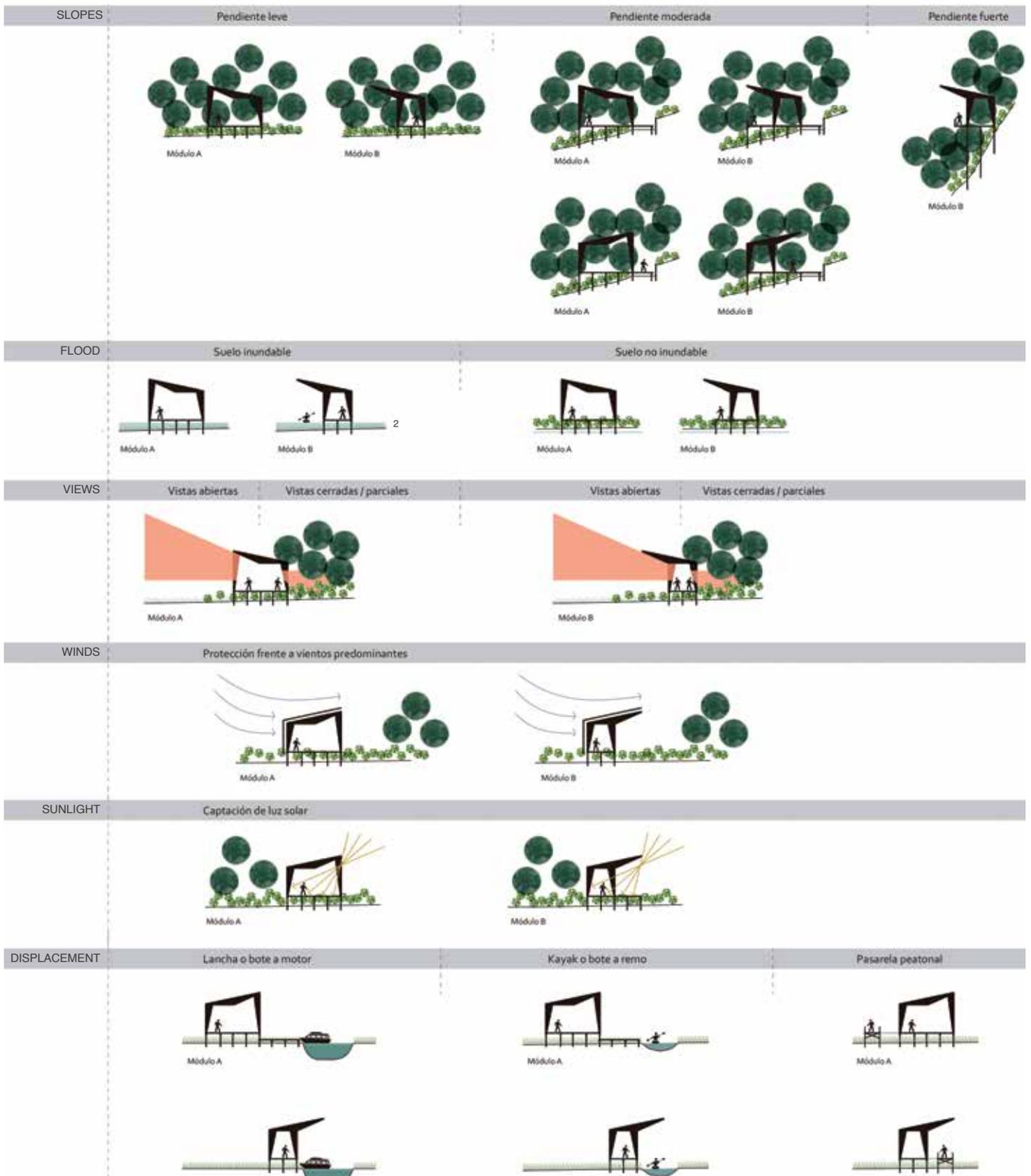


Figure 17. Modules in different site conditions.

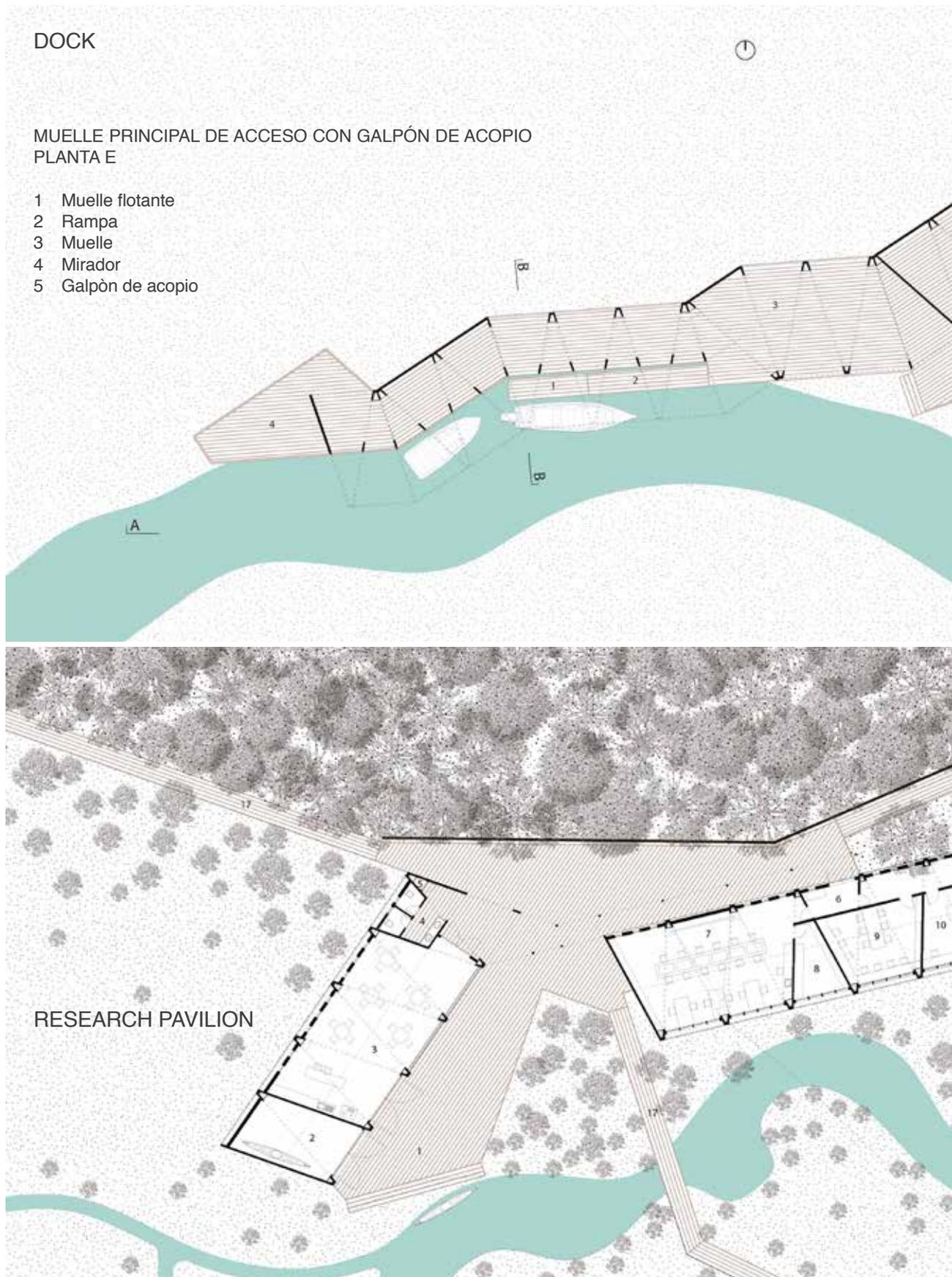
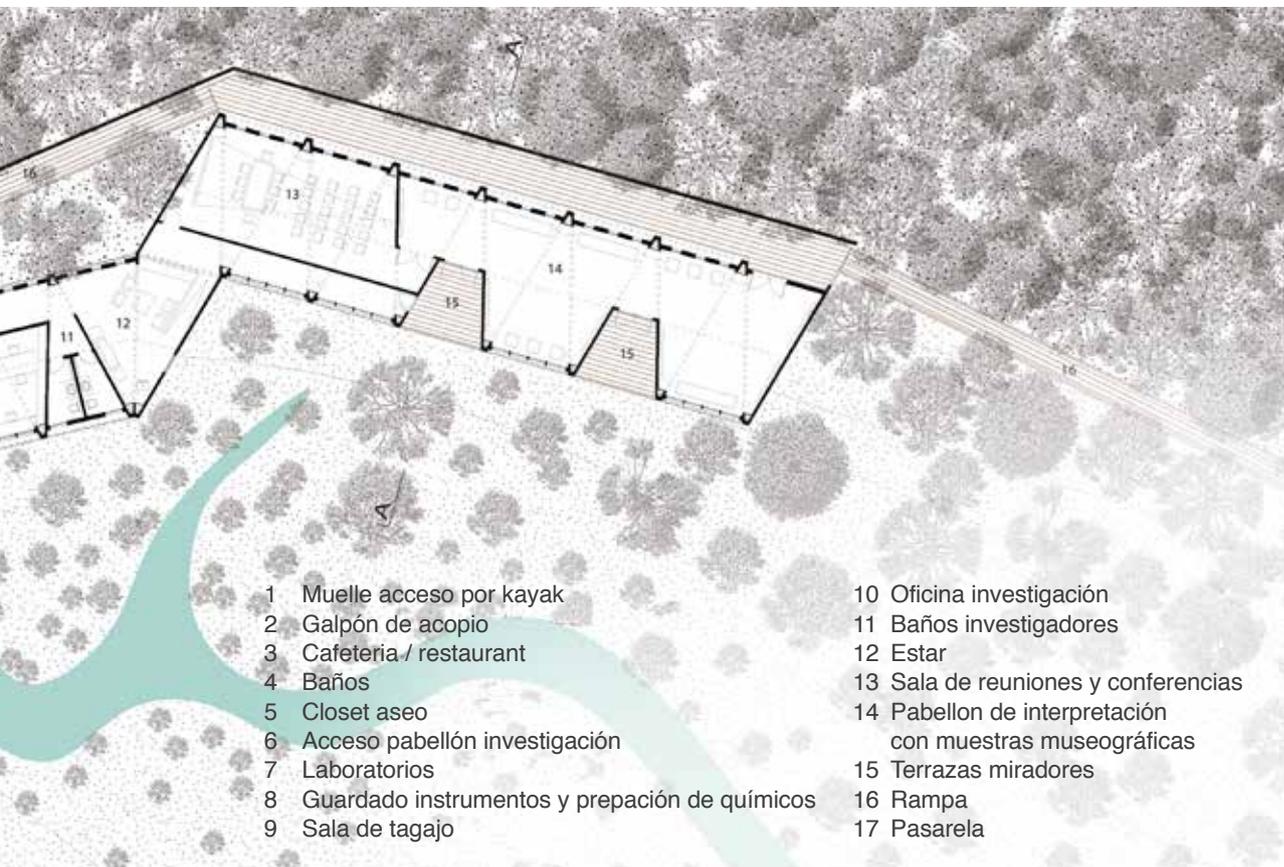
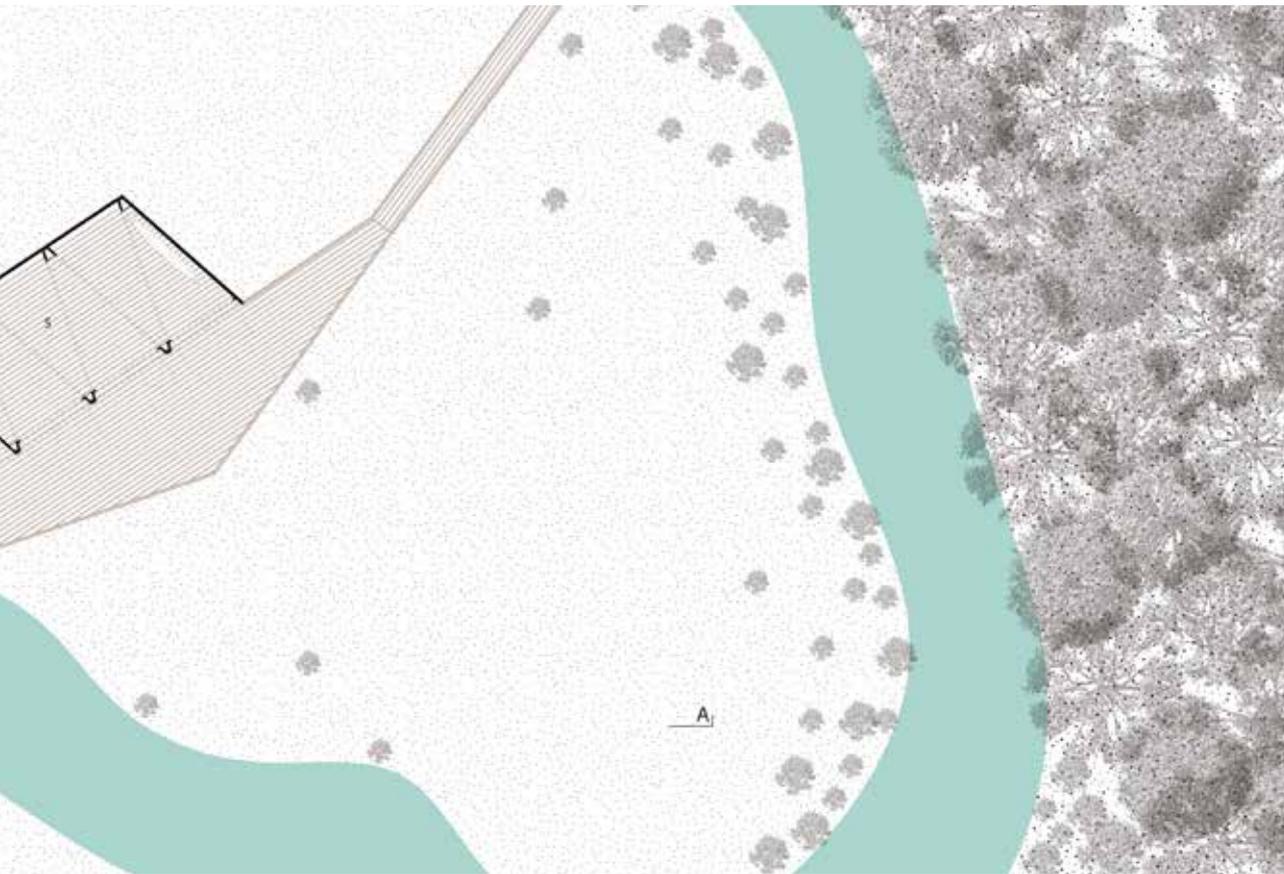


Figure 18a. Major program plans (a): the Dock and the Research Pavilion.



INN

- | | |
|---|---------------------------------|
| 1 Acceso mojado | 9 Clóset |
| 2 Chiflonera / deposito ropa mojada / deposito leña | 10 Galería |
| 3 Acceso seco y recepción | 11 Dormitorio grande compartido |
| 4 Bodega administracion | 12 Dormitorio |
| 5 Baños personal administracion y logística | 13 Baños |
| 6 Dormitorio personal administracion y logística | 14 Estar |
| 7 Despensa | 15 Terraza |
| 8 Cocina y comedores | 16 Terraza con fogón |

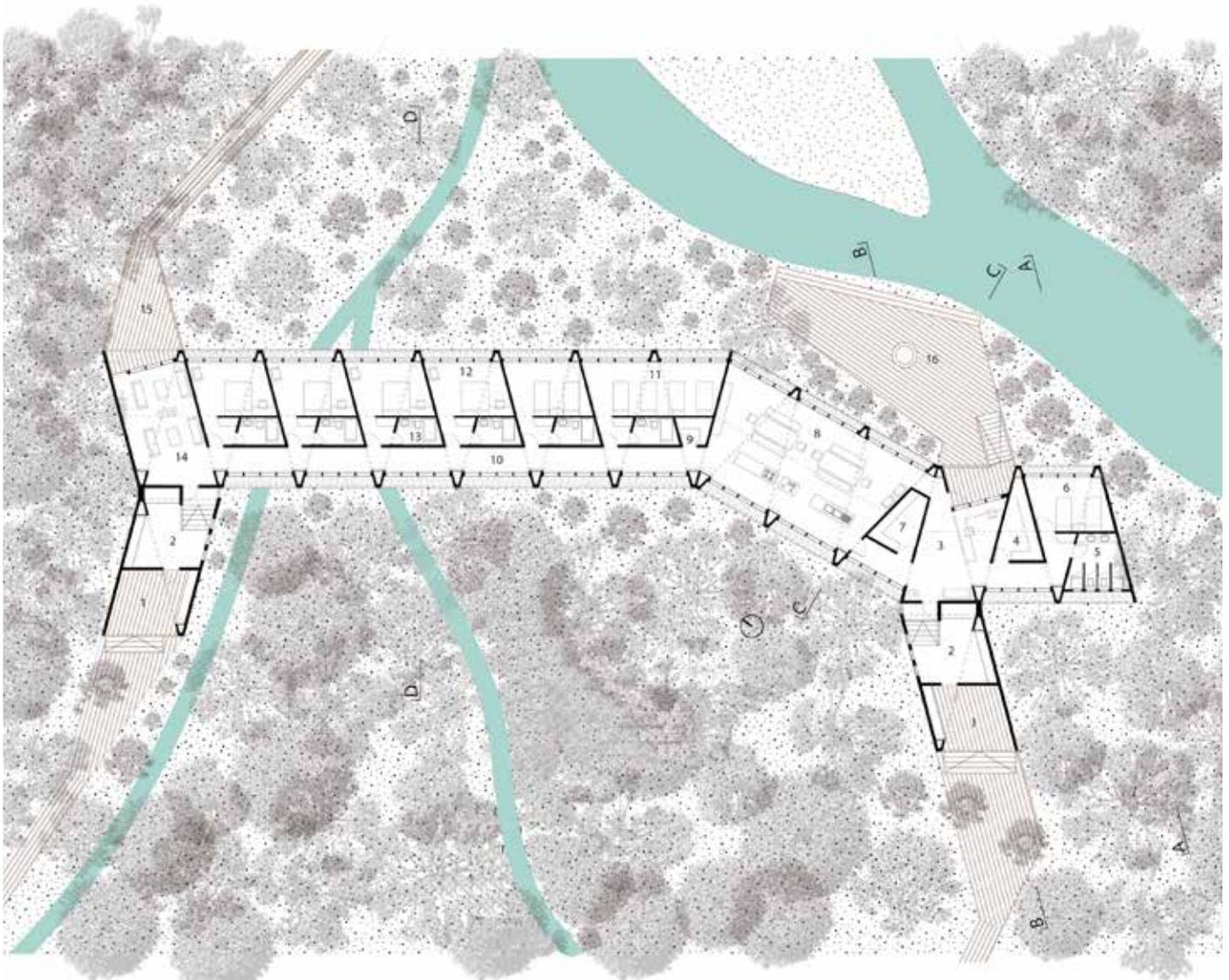


Figure 18b. Major program plans (b): the Inn.



Figure 19. Dock sections.



Figure 20. Inn sections.

Figure 21. Research Pavilion section.



Notes

1. The CIDEZE is part of the Undersecretariat of Regional and Administrative Development of Chile (SUBDERE). It was created in 1994 to deal with the problems in the provinces and regions considered Extreme Zones and to seek the reinsertion of those zones in the country's economic development.
2. This Station is a project of the Pontificia Universidad Católica de Chile on a site acquired in concession for scientific research. The site was chosen jointly with a team from the Instituto de Geografía of the university. The project of this research is part of an academic work, which has not yet taken place.
3. At the beginning of this research there was no detailed cartography or satellite images with good resolution of the site to be intervened, and the road to Bahía Exploradores had not been finished yet.
4. This idea was set forth in the course entitled "Urban Project in Extreme Territories," given by Professor Eugenio Garcés, Pontificia Universidad Católica de Chile, Architecture School, 2012.
5. To Berque, landscape thought (subject) is a thought whose subject is the landscape. It implies reflection about the landscape. In order for that to exist, he establishes, the landscape must be capable of representing itself so that it can be made a subject of thought. Source: Augustin Berque, *El pensamiento paisajero* (Madrid: Biblioteca Nueva, 2009), 20.
6. *Ibid.*, 60.
7. The *asqif* is, "as applicable, a sort of loggia (a semi-covered terrace (...)) or a sitting room with an open space or a corridor." It is a space that is generated to permit supervision of the fields. Source: *Ibid.*, 67.
8. In Patagonia the estancias came into being as part of a process related to control of the territory. Source: Liliana Lolich, *Patagonia, arquitectura de estancias* (Buenos Aires: Cedodal, 2003), 87-89.
9. The neocolonial economic system implanted during colonization of the territory permitted the expansion of techniques and designs throughout Patagonia, imposing industrial prefabrication in a pioneering stage. Source: *Ibid.*, 62.
10. Cristina Felsenhardt, "El Paisaje: en búsqueda de definiciones, argumentos y esclarecimientos," PhD. diss., Pontificia Universidad Católica de Chile, 2011.
11. Denis Cosgrove, "Observando la naturaleza: el paisaje y el sentido europeo de la vista," *A.G.E.* 34 (2002): 64.
12. Michel Collot, "Les enjeux du paysage," in Antonio Costa, *Il cinema e le arti visive* Antonio Costa, (Turin, It.: Einaudi, 2002), 340.
13. Osvaldo Moreno, "Arquitectura del paisaje, una disciplina transversal e integradora," *Revista CA* 147 (2011): 14-19 (16).
14. Richard Forman, *Land Mosaics, The Ecology of Landscapes and Regions* (Cambridge, UK: Cambridge University Press, 1995), 9.
15. Francesco Careri, *Walkscapes. El andar como práctica estética* (Barcelona: Gustavo Gili, 2002).

Acknowledgments

This essay arose from the thesis entitled “Inserciones Arquitectónicas en un Paisaje Remoto: Estación Científica en Bahía Exploradores,” written as part of the master's program in Landscape Architecture at the Pontificia Universidad Católica de Chile (PUC), and in collaboration with: Estación Patagonia PUC, Pontificia Universidad Católica de Chile, Observatorio Hombre-Medio Internacional (OHM-I) Bahía Exploradores, LabEx DRIIHM, Instituto Nacional de Estadísticas (INE) of Chile, Centre national de la recherche scientifique (CNRS) of France.

I would like to thank the following people who participated in this research: especially the thesis advisor, PhD. Architect Eugenio Garcés, who provided interesting reflections on extreme territories and their habitability; my co-tutor, professor Pablo Osses, of the Institute of Geography at the PUC and the institute at large for the information it provided and the expeditions we made to Exploradores; the CEDEUS (Centro de Desarrollo Urbano Sustentable, PUC) for its support.

Credits

Figures 1 and 6-21: graphic works by Elisa Izquierdo Garcés, 2012-2013.

Figure 3a. © N. Piwonka.

Figure 3b. © S. Correa.

Translation from Spanish by Caroline Escher.

Elisa Izquierdo graduated from the Architecture School of the Pontificia Universidad Católica de Chile, where she received a master's degree in Landscape Architecture (2013). Since that time she has maintained her relationship with the school as Associate Professor. She has also participated in projects at different scales, ranging from urban parks to schoolyards. Since 2015 she has worked as Coordinator of the Architecture and Landscape Area of the Fundación Patio Vivo in Santiago, Chile.

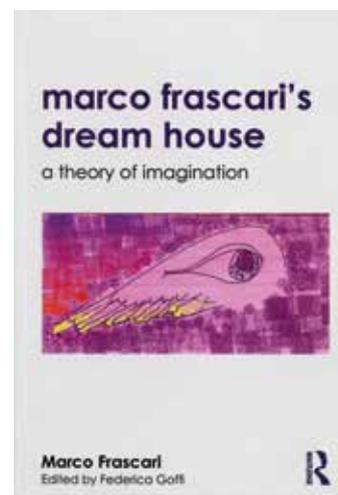
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Marco Frascari's Dream House. A Theory of Imagination

BOOK REVIEW / THEORY

Franco Pisani

**Marco Frascari's Dream House
A Theory of Imagination**
By Marco Frascari
Edited by Federica Goffi
Routledge, 2017
238 pages
\$157.92 (hardcover)



A REMEDY AGAINST MASSIVE EXPOSURE TO TRIVIALITY.
POSOLOGY

I eagerly consumed the six dishes and the sweet conclusion of the meal cooked by Marco Frascari in his book on April 7th, 2017, during a trip with my students to visit the Salone del Mobile in Milan. I read half of the book on the train to Milan and the remaining half on the way back to Florence. We all know how dangerous a day in the “seductive” and “glamorous” realm of Milanese “trivial” design can be. Using Frascari’s words:

“This is the unforgiving business-like environment in which professional architects must move today. In their search for aesthetic, anti-aesthetic or hyper aesthetic outcomes, architects design buildings that often generate discomfort or tension in the user.”¹

The book turned out as a treatment to prevent and cure that discomfort – first, a prophylaxis to prevent the disease and then a therapy. Pages flew by as bites of a delightful meal, as drops of a salvific medicine. It was like taking a “deep breath” (*largo respiro*) of fresh air in the “mephitic” atmosphere of glossy make-up. The book has managed to promote my physical and mental health on the one hand and efficiency on the other by triggering daydreaming and imagination. Addressed to both educators and professional architects, these pages offer powerful insights into a future where traditional and modern tools, digital and analogic media will serve as tools once again instead of being the goals of design. Powerful optimistic suggestions to envision a future where design (*il progetto*) will return to its exclusive role: to envision inspiring spaces that help us realize *vita beata*.

FOR THE NEXT MILLENNIUM. INDICATIONS

A sense of optimistic forecasting can be smelled throughout the book. The same is true of the presence of Venice, the “*illusion*” and the filigree of its image reflected in water, where *décor* becomes structure and lightness becomes substance.

The core of the book (six chapters and a conclusion, plus a portfolio) is forwarded by an inspiring essay by Federica Goffi and closed by an interview with Claudio Sgarbi.

Although this is a recent publication (as architects and readers we must be forever grateful to Federica Goffi for her precise and meticulous editing and, more importantly, for sharing these delightful pages with us), the main body of the book was first written by Marco Frascari in 1992 and edited for more than twenty years. It consists of a commentary (or, at least, such is the underlying pretext) on the project of a house-tower. The project was developed to answer questions posed by guest curator Daniel Friedman (currently, Dean of the School of Architecture, at the University of Hawai‘i at Mānoa – Ed.) in the competition brief titled “The Architect’s Dream: Houses for the Next Millennium.”

The title of both the competition and the design entry clearly echoes Italo Calvino’s influential *Six Memos for the Next Millennium*. Published posthumously by Harvard University Press in 1988, Calvino’s memos were still fresh and resonating in 1992.

In these pages Frascari masters the Calvinian art of subtracting weight. He is able to remove mass and monumentality from the complex plot

(*intreccio*) of stories, names, figures, relationships and signs, even if his language is far from any kind of adjective-less, neutral and referential minimalism. Overall light and smooth, Frascari's prose strikes the reader as tasty in the mouth and persistently resonates in the brain.

Can a book conceived in 1992 be still up-to-date? Is Frascari's lesson still valid and timely? In my dual role as professional architect and architectural educator, I am totally convinced that Frascari's work is today more meaningful to us than ever. In fact, it is more up-to-date than most architectural speculations put forth in the last decade. With the far-sightedness that is peculiar to a genius and with the "mantic" capabilities of a tarot reader, as early as 1993 *Maestro* Frascari foresaw the crisis of architectural imagination that we are witnessing today. He wants to free us from all kind of imaginative slavery and design addiction. To comment on his claim for freedom and its actuality I will use two *loci* (i.e., two "places" or tropes) of Frascarian imagery largely described in this book: "non-trivial drawings" and "pneumatic spaces."

"*Non-trivial drawings*," as opposed to drawings that promote an explanation of architectural events under the aegis of verisimilitude, are drawings that elicit wonder and "construe the architect's poetic understanding of human dwelling." Today's main means of architectural representation (photo-realistic renderings and B.I.M. software) cannot embody "dreams of possible constructed worlds." Writing has been reduced to calligraphy, and the mirror has been confused with the reflected image. Imagery has been replaced with static, artificially sugarcoated images. And, as we all know, sugar and sweetening agents are addictive. They create addiction and slavery. I am speaking of addiction to virtual reality and slavery to software and hardware brands. Renderings have lost their original sense of wonder. As a consequence, students start being bored of pinning up "bad smelling" drawings.

"Pneumatic spaces," instead, are spaces with a *spiritus*, rooms which "smell good."

"...by the term pneumatic - Frascari says - I do not mean inflatable architecture, but a space where a *pneuma*, or *élan*, resides. The building then becomes either a deity or a machine, a pneumatic machine, a construction with an aura".²

Today, the only scenario that allows people to pair these two words ("pneumatic" and "building") is the so-called Blower Door Test, a test performed to achieve high standards in the efficiency of an inhabitable space. This test, by the way, must be performed to get a building certified by the main certification institutes, such as LEED, Itaca and Casaclima. It consists in the creation of a "pneumatic" emptiness in a

room to assess potential air leakages and, consequently, the level of proofing and sealing. Not only a building must be sealed to make it possible for it to house a soul that would otherwise escape, but it also needs mechanical ventilation to provide acceptable indoor air quality. In other words, it is slave to a machine that keeps it alive and makes the habitation “not-so-*commodious*” and more expensive.

Architectural imagination is chained to the building industry and to real estate investments. Frascari’s imagery provides a potential escape through words and drawings.

A QUARRY OF FERTILE WORDS FOR IMAGERY. ACTIVE INGREDIENTS

Frascari adorns his scholarly prose with archaic words (Italian, Latin and Greek), quoting classics as well as authors and books that, in most cases, cannot be found on social networks or the Internet. In fact, sometimes those sources cannot be found even in the Biblioteca Marciana (an ancient library in Venice, Italy, endowed with a wealth of ancient manuscripts – Ed.).

The word “theory” (*teoria* in Italian, from the Greek θεωρέω *theoréo* “to look at, to observe”, combining θέα *thèa*, “show, performance,” and ὁράω *horào*, “I see”) usually refers to an idea derived from an hypothesis or from a speculation, mixing abstraction and reality.

However, if we look more carefully to the etymology of this word (and Frascari is a master in this art) we discover that the origin of *teoria* (Θεωρία) lies in ancient Greece. At that time, it meant the procession of a group of *teori* (Θεωρός) entrusted with a special religious mission, for they participated in a ceremony or consulted an oracle.

In the procession enacted – so to speak – by the pages of this book, the oracle is using narrative techniques to envision possibilities for the future of architecture. Fictional and non-fictional elements are mixed in an extremely engaging plot. It is incredible how Frascari’s Calvinian lightness succeeds at articulating these scholarly essays, notwithstanding their being adorned with potentially heavy rhetorical and conceptual figures.

A primer for the initiation, or the definitive guide to Frascari’s imagery, this book stands out as the synopsis of a life of theoretical production and meaningful speculations. Frascarian vocabulary, just as the author’s imagery, is rich and tasty: “*numinous*,” “*mantic*,” “*pneumatic*,” “*non-trivial*,” “*macaronic*,” “*loose way*,” “*divination*,” “*constructing and construing*,” and other such peculiar and meaningful words, dense like gems, punctuate the dissertation.

Words and drawings are used here as gates. They serve as passages to places for further speculations, open doors to fertile soils to grow proper food for imagination.

The different lines of dissection in the body of Frascari's lesson are clearly developed and distributed in the six chapters of the book. Their sole goal is stimulating an appetite for design in both young minds and educated professionals.

The drawings offered in the portfolio of the book are another vein in this rich quarry. Exercises in the art of architectural drawing, they are visual thoughts, at once both simple and sophisticated. A hundred pages of fantastic samples of non-trivial architectural drawings, where the different media and the multiple tools available for the well-tempered architect are constantly blended. Ingenuous and ingenious at the same time, Frascari's drawings are whimsical tales where fiction and reality, matter and spirit, digital and analogic, *recto* and *verso*, cross paths, thus opening possibilities and emanating energies.

DROOLING. COLLATERAL EFFECTS

We think visually and we draw ideally. Frascari teaches us that there is no difference between drawing and thinking if we keep hands and brain consciously connected.

For an architect, to draw and to think visually should be a vital necessity and an extremely compelling experience. *Nulla dies sine linea* is the Latin quote reported by Frascari in a drawing from 2007 titled *The Science Without a Name*, which is reproduced in the introduction by Federica Goffi. Literally, the motto means: "No day without a line." We find this well-known quote in Pliny the Elder (*Historia Naturalis*, Bk. 35), where it is attributed to Apelles. This ancient painter was said not to spend a single day without drawing a line and, in so doing, contributing to the research for perfection and truth.

By the end of the book, at the end of the trip, approaching the Santa Maria Novella train station in Florence, I started feeling a growing need to grab a pen and begin sketching, developing forms, tracing circles, lines, axes for potential compositions, designing a dream house. Useless sketches and innocent doodles, some might say. Architectural dreaming, I would argue.

I was drooling over drawing as a hungry person aches for food after reading the recipe of a tasty dish. A book that can trigger the need for drawing, that makes you hungry for visual thinking and craving for architecture, is indeed a great book of architecture.

Notes

1. Marco Frascari, *Marco Frascari's Dream House. A Theory of Imagination*, Federica Goffi ed. (Abingdon, Oxon, UK, and New York: Routledge, 2017), 101.
2. *Ibid.*, 85.

Franco Pisani, strongly tempted by the expanded opportunities offered by the “contamination” of apparently distant themes and disciplines, includes within the profession of architecture research activities and educational experiences. He lives and works in Florence (Italy), where he runs his own professional office FRANCOPISANIARCHITETTO, practicing design at all scales, “from the spoon to the city,” and for public and private clients. He has both taught as a Visiting Professor and lectured as an invited speaker at various universities in Italy and abroad. He holds a professional degree in architecture from the Università degli Studi di Firenze, Florence (Italy).

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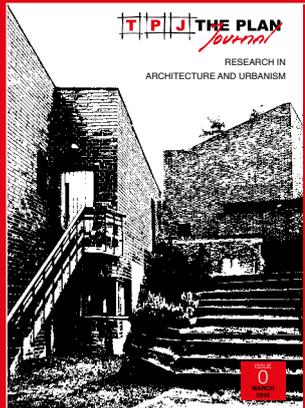
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Narration: An inspiring journey through memory, place and culture (Alsop).
Theory: Imagination and invention as vehicles for a “critical architecture” (Mihalache); through Clifford Geertz’ lens of “thick description,” the complexity of meanings, procedures and protocols of measured drawings (Akboy-Ilk), and a book review through the theoretical images of the “new humanism” of *Marco Frscari’s Dream House* (Pisani). **Typology:** A re-assessment of the current knowledge on the “architecture of detention” (Vessella). **Urbanism:** A multi-scalar approach to transport infrastructure as an integrated hub for regional development (Fraziano, Meninno et al.). **Cross-Disciplinary Studies:** A landscape design for an “extreme territory” (Izquierdo Garcés)