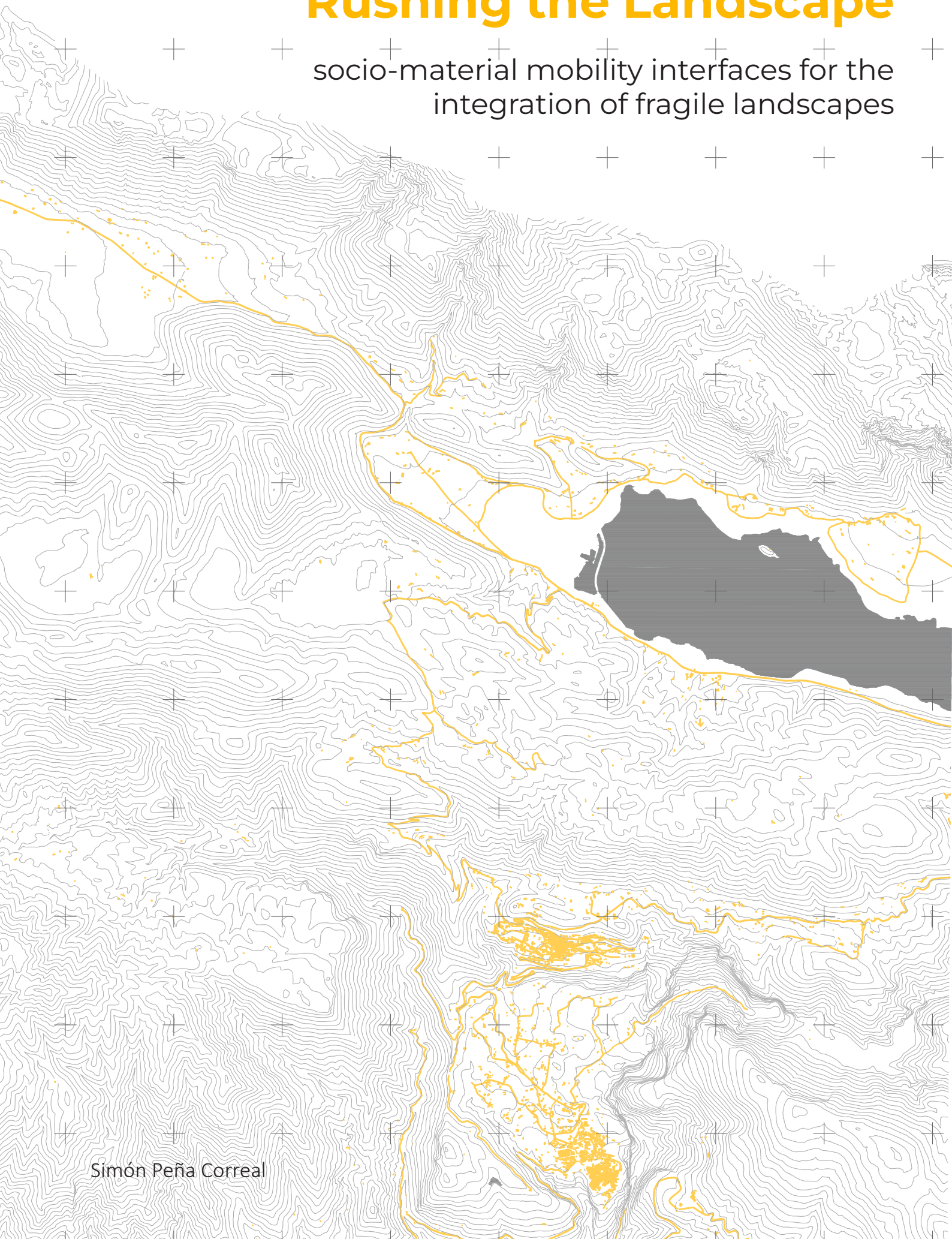
Rushing the Landscape

socio-material mobility interfaces for the integration of fragile landscapes



Simón Peña Correal

Rushing the landscape

socio-material mobility interfaces for the integration of fragile landscapes.

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“We dwell not in nature but in the relation to nature. We do not inhabit the earth but inhabit the excess of the earth”.

Robert Harrison, 1992.

A todas las personas que me acompañaron hasta acá; dese el colegio, pasando por la universidad, y recordando cualquier otro espacio que me haya hecho conocer gente. Aunque los nombres son muchos para mencionar, quiero destacar seis: agradezco a Marisol, a Mauricio y a Salvador, por ser mi núcleo y mi día a día. A mi abuelo Alfredo, el arquitecto que me formó, y a mi abuela Julita, quien me recuerda siempre cómo vivir con entereza de alma. Y a María José, por acompañarme en esta gran experiencia que ha sido Torino. Me aseguraré personalmente de hacer llegar mi agradecimiento a mi familia, amigos y profesores que me han formado, pero que no he podido nombrar acá.

Abstract

English

This thesis focuses on the problems of depopulation and socio-spatial disengagement in Italy's *aree interne*, using landscape fragility as a conceptual starting point. The analysis focuses specifically on the mountainous region of Matese —Campania and Molise— and the relationship between Piedimonte Matese and Castello del Matese. In contrast to the transportation system proposed at the Villard 27 seminar —funicular and cable car—, this research confronts the technocratic perspective that fails to account for the fragility of the karst landscape.

To challenge this invasive perspective, the research conceives of the landscape as a living infrastructure through theoretical and architectural references to topographic integration and vertical mobility. From a methodological standpoint, the research addresses infrastructure as landscape, the habitability of fragile territories, and adaptive systems, while also proposing social stations designed according to 5x5 meter architectural models.

In this sense, the intervention demonstrates that mobility can become an important socio-ecological mediator capable of ensuring flexibility, fostering community participation, and regenerating mountainous territories without affecting their environmental identity.

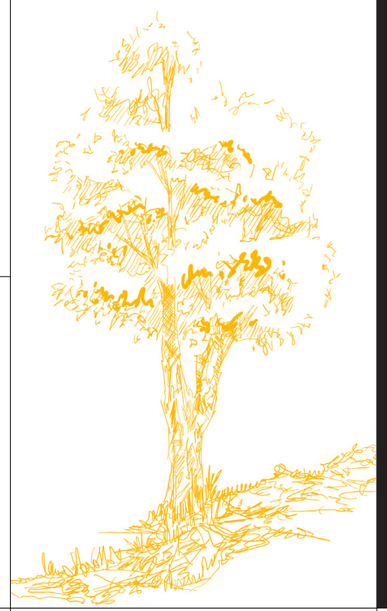
Español

Esta tesis se centra en las problemáticas de la despoblación y el desapego social-espacial en las *aree interne* italianas utilizando la fragilidad del paisaje como punto de partida conceptual. El análisis se centra específicamente en la región montañosa del Matese —Campania y Molise— y la relación entre Piedimonte Matese y Castello del Matese. En oposición al sistema de transporte sugerido en el seminario Villard 27 —funicular y teleférico— la investigación confronta la perspectiva tecnocrática que no tiene en cuenta la fragilidad del paisaje kárstico.

Para desafiar esta perspectiva invasiva la investigación concibe el paisaje como una infraestructura viva a través de referencias teóricas y arquitectónicas de la integración topográfica y la movilidad vertical. Desde el punto de vista metodológico la investigación aborda la infraestructura como paisaje, la habitabilidad de territorios frágiles y sistemas adaptativos, proponiendo a su vez estaciones sociales diseñadas de acuerdo con modelos arquitectónicos de 5x5 metros.

En este sentido la intervención muestra que la movilidad puede convertirse en un importante mediador socio-ecológico capaz de garantizar la flexibilidad, fomentar la participación comunitaria y regenerar territorios montañosos sin afectar su identidad ambiental.

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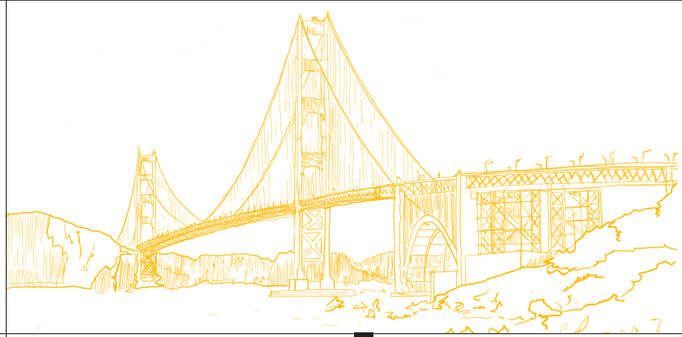
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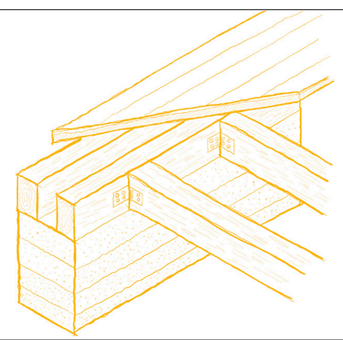
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Introduction

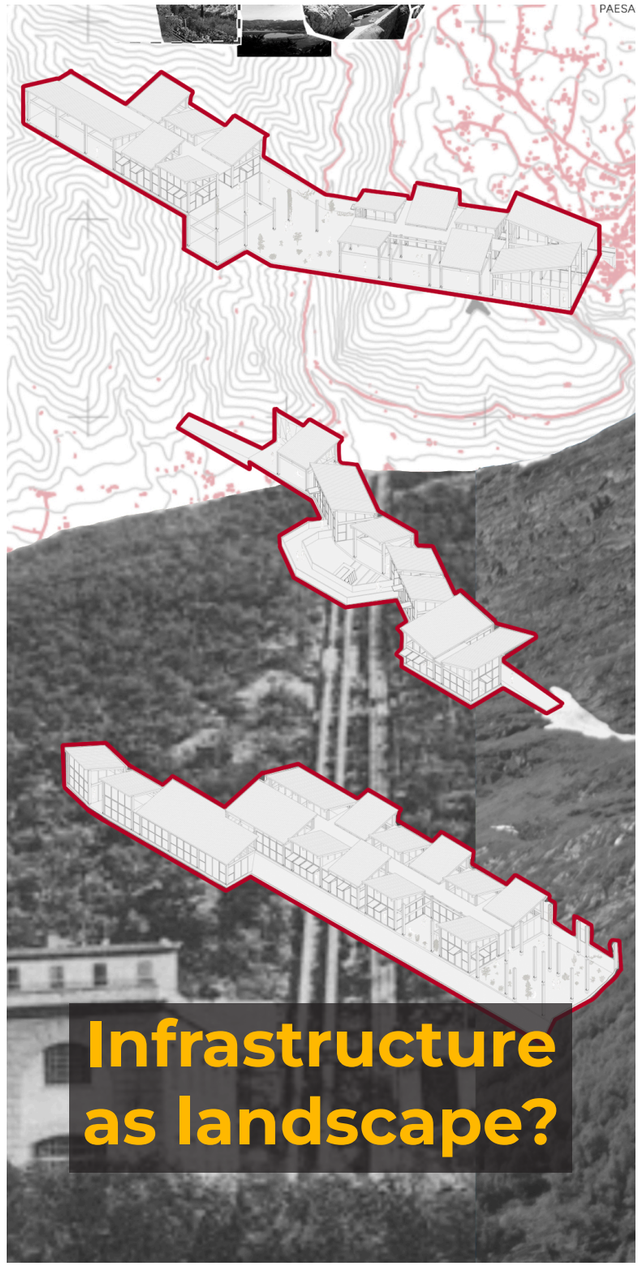
This thesis stems from a desire to understand and mitigate a problem intrinsic to Italy: the abandonment of inland areas. In other words, the migration of residents from municipalities farthest from urban centers in search of a better future with greater security. This situation is critical because inland areas account for 60% of the country's territory but are home to only a quarter of the population. Thus, while cities face overcrowding, job shortages, and the loss of green spaces, outlying areas seek to attract residents through large-scale development projects that improve quality of life and reduce the sense of remoteness and urban disconnection.

A representative case —which also happens to be the focus of my thesis— is the Matese region: a mountain range and regional park in the Apennines, located between the regions of Campania and Molise. Within this territory, two municipalities stand out for their extensive networks of urban infrastructure and historical significance: Piedimonte Matese and Castello del Matese. Seeking an intervention strong enough to bring about structural change, I proposed designing a mixed - mode transportation system combining a funicular and a cable car to connect them, with tourism as its primary driver. However, this approach has two problems: it overlooks the extreme fragility of the landscape in which the project is situated and conceives of the project from a strictly functional perspective.
Against this backdrop, this thesis also seeks to understand the landscape as the primary catalyst and mediator of the mobility system. Thus, this rethinking of the infrastructure proposal suggests that the funicular is not an end in itself, but rather a means to restore and connect the municipalities of Matese with the fragile landscape in which they are located.

The first part of the thesis will seek to understand the concepts that shape the internal area, highlighting the role that the landscape plays in its structuring. The major problem with a project of this scale is that it negates the landscape if not executed correctly; so, how can we mediate the relationship between society and the territory? By understanding the landscape as infrastructure in its own right -an infrastructure that is far more subtle and imperceptible yet plays an absolutely vital role- an infrastructure that we abuse and appropriate without measuring the impact we cause. Once the function of a landscape as important and, at the same time, as fragile as the karst landscape is clear, we can then discuss building upon it.

The second part examines key case studies to analyze the role of landscape in urban morphology and the potential of transportation systems in peripheral revitalization. On the one hand, we have Diana Wiesner's landscape intervention in the hills of Bogotá, Colombia, as Wiesner made it clear that landscape is the primary determinant of large-scale urban projects. From the layout and morphology to material choices, landscape is ever-present. On the other hand, there is the funicular and cable car network in the city of Innsbruck, Austria. This transportation system features designs by various architects, notably Zaha Hadid and Snøhetta; however, its true significance lies in how it functions as a chain of services that adapt to each location and elevation it reaches. Beyond providing rapid transit, it also creates spaces for lingering, allowing people to experience the landscape and the territory in entirely new ways.

Finally, the last part involves creating the funicular and cable car stations through an adaptative model, as part of practice based - research, that will then help create a guide - toolbox - to configure and mediate any further interventions in the landscape. If the infrastructure project becomes a reality, how can we then mitigate any potential impacts and leverage its location to help mend social and environmental relationships? This toolbox is based on the concept of an adaptable model—standardized enough to be easily replicated locally, yet flexible enough to ensure that no two stations are exactly alike. Additionally, the toolbox is accompanied by a manifesto outlining the *dos and don'ts,* so that residents can take even greater ownership of the project without losing its essence or their autonomy.



The immeasurable damage we have caused to the planet has brought to the forefront several considerations worthy of interdisciplinary debate. In the face of this crisis, architecture plays a fundamental role; since it is capable of shaping and influencing human relationships, it must also influence our relationship with nature —especially when humans account for only 0.01% of the planet's biomass. This shift in awareness and discourse has transformed our paradigm regarding natural environments and fragile topographies. For decades, architecture was introduced to peripheral areas as a technical solution, since overcoming slopes, distances, and resistance through large-scale projects seemed to be the correct answer. However, upon closer examination into these territories, it becomes clear that the issue lies not merely in the structural aspect, but in the cultural and conceptual. Intervening in a fragile topography, such as that of the Matese, involves dismantling a misconception: the landscape is not natural. While nature exists in parallel with human intention, the landscape arises from an anthropocentric interaction; it is a social, cultural, and political project that acquires meaning exclusively through our perception. Thus, the landscape becomes physically and socially fragile.

The landscape is not a passive entity, but rather a vertical territory composed of multiple layers and socio - ecological strata that interact with one another, where human action is inalienable. In fact, the landscape is a key factor in humanity's historical development, as it was —and remains— a determining factor in behavior, settlement patterns, and cultural identities. However, the relationship has been reversed: humanity now shapes the landscape, mistakenly believing it has total control over it. Coupled with the drive to modernize the periphery and the *aree interne*, the land has become a conquerable obstacle -an instrument for development. This impulse negates the qualities of the environment, turning it into a machine for tourism.

To avoid this destructive instrumentalization, architectural reasoning must incorporate a much more rigorous —and more ethical— framework. The illusion of the human as an absolute must disappear so that we may recognize the non-human; the other; that which we do not understand. We must understand geological, hydrological, and biological logics as active agents with their own dynamics. This approach then allows us to reinterpret the landscape as a living component with which reciprocal relationships can be established, even with architecture and infrastructure that are seemingly invasive.

This conceptual process transforms our understanding of landscape; it is now a system: a living infrastructure, almost always invisible, yet transcendental and structuring. If the natural territory behaves like living hardware —with complex cycles, topographies, and ecosystems— then architecture acts as software installed within it. Following this analogy, architecture must program interventions that interpret, respond to, and enhance the operational logic, without replacing or suppressing what already exists.

This now-hybrid infrastructure, which operates based on human needs and natural flows, is defined by its relationship with time. Unlike conventional buildings set on the land, which seek unchanging permanence and aesthetic rigidity, landscape infrastructure responds to time and is able to mutate, leaving a trace of this process behind. Time gradually dictates the rhythms of ecological succession, seasonal changes, and the gradual evolution of human interventions on the land. Therefore, any project rooted in the conception of landscape as infrastructure must coexist with uncertainty, fluidity, and transformation in order to adapt, age, or readjust to its surroundings. In this way, understanding landscape as infrastructure allows us to redefine the role of architecture in vulnerable territories. It encourages us to move away from building in opposition to the mountain and instead begin designing in harmony with invisible yet latent systems. This reciprocal dialogue between the karst *hardware* and the adaptive *software* mediates and balances the territory and its actors.

Villard 27

The context in which this research originated is not an isolated case; it has its roots and was developed during the 27th edition of the Villard Architecture Projects Seminar. This academic forum for itinerant reflection on the Italian territory allowed for a direct examination of the complex urban and landscape dynamics of the Matese region, serving as the critical starting point for the formulation of this thesis. During the seminar, one of the design exercises focused on the area encompassing the municipalities of Piedimonte Matese and Castello del Matese, proposing a large-scale intervention based on the creation of a mixed-mode transportation system —comprising a funicular and a cable car— to traverse the steep topography of the mountainside, connect the valley with the mountain's higher elevations, and provide a boost to tourism in a region affected by depopulation and a lack of opportunities. However, it was precisely through in-depth analysis within the framework of Villard 27 that the key questions emerged which reoriented the course of this research. The originally proposed design followed a predominantly functionalist and technocratic logic, conceiving the transportation infrastructure as a simple engineering layout intended to move people from point A to point B and serving as a rapid driver of tourism that ran the risk of ignoring the true nature and underlying problems of the site.

It is in the gap between the seminar's initial proposal and the reality of the site that this thesis finds its true purpose, making the Villard 27 project both the case study and the ideal laboratory for testing its central concepts. First, the research explores the transition from infrastructure viewed as a prosthesis to infrastructure understood as landscape. Thus, taking the route and the intention to connect proposed in the seminar, the project radically reinterprets them to avoid imposing a heavy, foreign structure that would negate the hillside; on the contrary, it comes to understand the delicate karst relief of the Matese as the primary determining factor, transforming the invasive infrastructure into a subtle network that conforms to and floats above the landscape. Second, the project directly addresses the challenges of the *aree interne*, as the seminar highlighted that the true challenge facing the Matese is not merely to attract fleeting tourism, but to mitigate the region's socio-spatial divide. In this way, the reconnection between Piedimonte and Castello ceases to be a superficial attraction and becomes a vector of urban regeneration that guarantees democratic access to the territory, restores cohesion to local communities, and highlights their historical and hydrological heritage. Finally, this critical approach allows us to move from a rigid architectural object toward an adaptable, thoughtfully formulated model that will lay the groundwork for the development of a toolbox. Using Villard's project as a spatial foundation, the thesis proposes a constructive solution that ensures the stations are not rigid, identical structures, but rather flexible, reversible nodes that are deeply respectful of the land they occupy.







Figures N° 1-2-3. Pictures from the Villard seminar at different dates. Photos by Eda Gokyar, Santiago Gomes, and myself. 2025-2026



Figure N° 4. Collage of the different projects from Politecnico di Torino for the Villard seminar. Original work. 2026

Problem, justification and questions

Problem

The crisis facing Italy's *aree interne* is not merely a demographic phenomenon or one of economic abandonment; it is, above all, a problem of socio-spatial fragmentation and territorial disconnection. In regions such as the Matese, the isolation of mountain municipalities from the dynamics of the valley has led to progressive depopulation and the abandonment of traditional systems of production and land stewardship. In response to this reality, public policies and development plans often propose large-scale infrastructure projects —such as aggressive road networks or transportation systems designed from a purely functional or tourist— oriented perspective, with the aim of artificially reducing the sense of remoteness.

However, this type of intervention reveals a fundamental underlying problem: infrastructure is understood as an autonomous and invasive entity that ignores the fragility of the landscape in which it is embedded and the vulnerability of the population that inhabits it. In the Matese - a region characterized by karst terrain with high hydrogeological vulnerability and a deeply rooted historical and cultural heritage - proposing a mobility infrastructure based on engineering or tourism criteria not only fails to resolve the social problem but also accelerates environmental degradation and erases the identity of local communities. The problem lies in the inability of traditional architecture and engineering to design mobility systems that function as true ecological and social connectors rather than rigid prostheses imposed on the landscape. Instead of imposing a solution, we must provide the necessary tools for participatory and local creation so that this can happen.

Justification

In light of this problem, this research is grounded in the need to reinterpret the scope and implementation of infrastructure solutions, shifting from imposed and exploitative approaches to ones that are far more nuanced and mindful. We can no longer view the landscape as mere background decoration or as an obstacle to be overcome, but rather as infrastructure in its own right —subtle, dynamic, rich in meaning, and capable of engaging in dialogue with our ways of thinking and systems.

Incorporating a mixed-use mobility network between the municipalities of Piedimonte Matese and Castello del Matese, through the concept of *landscape infrastructure*, allows for the development of two scales of the place: the ecological and the social. From an environmental perspective, the project proposes designing the stations using a system of models that are adaptable in form and configurable in use, which engages with the karst terrain through its placement and materiality. On the social front, infrastructure is no longer understood as a system driven by expediency and efficiency, but rather as a means —a facilitator— of community integration through spaces for gathering that revitalize local heritage and the landscape, reinvigorate local economies such as mountain agriculture and responsible tourism.

This thesis does not oppose development, nor does it seek to protect the isolation of *aree interne*; rather, it aims to offer an alternative —another way of approaching architecture and infrastructure— in which progress serves society and nature, based on the understanding that by working together, with spaces for both individual and collective development, balance can be restored.

1. How can the design of a mobility infrastructure —coordinated through an adaptative model— reconcile the preservation of a fragile landscape with the sociocultural regeneration of municipalities in the inland region?
2. Can funicular/cable car stations cease to be merely functional transit spaces and become hubs of social infrastructure?
3. How can we design a toolbox based on a 5x5-meter model that can be standardized while also adapting to the programmatic and spatial requirements of each station?

Methodology and objectives

In order to mitigate the historical gap affecting the inland area, its population, and the fragile landscape it inhabits, a methodological approach is proposed that integrates an analysis of the territory, theoretical reflection, and material and design implementation through the following three steps.

The first step consists of diagnosing the problem and gaining a comprehensive understanding of its territorial significance. This initial phase takes an in-depth look at the condition of the landscape, focusing on its role in shaping the *aree interne* within the Italian context, and analyzes territorial dynamics and their multiscale impacts, as these conditions threaten to render these mountain municipalities obsolete. Simultaneously, this step examines the biophysical dimension of the Matese to argue, from an environmental and ecological perspective, why we are facing a vulnerable landscape: a karst terrain characterized by its hydrogeological susceptibility, its erosion-prone slopes, and the challenges facing its forest ecosystems. It is precisely at the intersection of socioeconomic urgency and environmental sensitivity that the problem lies: the desperate need to revitalize these peripheral regions and reduce the sense of isolation leads to public policies and traditional planning that rely on massive, rigid, and invasive infrastructure solutions, accelerating the degradation of the land and widening the relational gap with the natural environment, finding solace in functionalism by distancing itself from nature.

The next step in the methodology consists of using infrastructure — understood as a set of structures, services, and resources that serve as the basis for a system's operation — to create a conceptual bridge for empathizing with and engaging in dialogue with the other, that is, with nature. The impending civil engineering projects assault and negate the mountain, forcing a search for a conceptual meeting point to overcome the anthropocentric filter of the intervention. Both societies and natural systems originate from and depend on complex systems to ensure subsistence and the channeling of flows: we need energy networks, transportation, infrastructure, the economy, etc., while nature operates through biological, hydrological, geological, and subterranean systems - among others - that are imperceptible yet vital. This conceptual alignment allows us to understand the Mobility Project not as an imposed prosthesis, but as a human and ecological mediator that fosters empowerment, respect, and territorial reciprocity.

The third step uses architecture as the mediator resulting from the alliance between community and landscape, structuring the Project through three operational dimensions: the adaptive model, tectonics, and spatio-temporal management.

The response process is an adaptable model, conceived neither as a fixed volumetry nor as a banal repetition, but rather as a flexible assembly that reacts to the conditions of its context. These conditions are: the necessary scale of the site, the physical relationship with the surroundings, and the required functions. Combined with the diagnostic analysis, this adaptable model will enable the development of a low-impact proposal - reversible if necessary - that will serve as the investigative premise for a toolbox - style construction manual.

Furthermore, the response integrates programs, schedules, and flows to go beyond the mere function of transportation, creating flexible, reprogrammable systems in addition to the station's machinery and platforms. This hybrid programming seeks to synchronize with an analysis of temporal flows and differentiated schedules. This allows us to observe both the daily local flow - which responds to the work schedules of residents, students, and producers - and seasonal or tourist flows, such as those on weekends and during peak season. In this way, the flexibility and use of the stations evolve in tandem with the intensity of usage at different times of the day throughout the year.

Finally, this process is complemented by the drafting of a usage manifesto - *do's and don'ts*- that serves as a guide for local management, ensuring that the community can operate, transform, and maintain the system without losing its autonomy or disrupting the environmental balance of the Matese.

1. Design a landscape and transportation infrastructure for the Piedimonte-Castello area, using a flexible system ocf stations and cable transport, to revitalize the social and community fabric and mitigate the impact on the landscape.
2. Analyze the literature and theoretical frameworks on landscape to substantiate its role as a flexible, functional system that is integrated into the sociocultural dynamics of mountain regions.
3. Assess the environmental, social, and cultural impacts resulting from territorial isolation and the imposition of conventional infrastructure in the aree interne.
4. Reconceptualize the functional transit station by transforming it into a hybrid facility and a hub for social engagement (incorporating community, cultural, and educational uses).
5. Develop an initial framework for a construction catalog of an adaptable model (toolbox) based on a 5×5“ meters” structural system, ensuring standardization, reversibility, and adaptability to the topographic and site-specific conditions of each location.

Framework

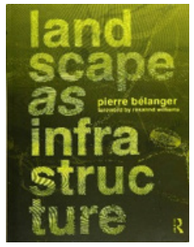
The theoretical framework of this research is not composed of isolated references, but rather of an interdisciplinary conceptual network that argues how mobility architecture in isolated and mountainous contexts can transition from an invasive engineering project to a system that mediates the territory. This framework is based on three consistent theoretical pillars: infrastructure as landscape, the understanding of fragile territories, and the technique of adaptive systems.

The first pillar forms the basis of the intervention by rethinking the very notion of infrastructure. In *Landscape as Infrastructure*, Pierre Bélanger argues that landscape should not be understood as a passive backdrop or a decorative surface, but rather as a living, dynamic, and operational infrastructure. By applying this lens to the mountainous context of the Matese, the connection between Piedimonte and Castello ceases to be viewed as a scar of rigid engineering and instead becomes a continuous flow integrated into the place. By viewing the landscape as infrastructure, a common denominator is created that allows us to integrate ecology into the notion of human infrastructure, as well as our capacity for intervention; the landscape becomes a circumstance capable of enhancing our way of life, therefore, it becomes intrinsic to our daily lives. However, to implement this vision on land with such complex territorial alterations, the project draws on Ian McHarg's methodology in *Design with Nature*. McHarg provides a tool for interpreting the territory through *layer-cake analysis*, in which the overlap of biophysical variables —particularly the fragility of karst terrain, hydrology, and slopes— and human factors governs morphological decisions and urban layout. Thus, while Bélanger brings about a paradigm shift by defining landscape as infrastructure, McHarg contributes a rigorous method for understanding, classifying, and intervening in it through different perspectives and constraints.

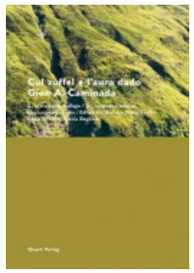
With infrastructure defined as landscape, the second axis addresses the socio-spatial notion of inhabiting the aree interne. The approach to the mountains draws on the work of Gion A. Caminada, compiled by Bettina Schlorhaufer in *Cul zuffel e l'aura dato*, which demonstrates that building in the high mountains requires *coexistence*, based on a dialogue between topography, local materials, and collective memory. His work argues that the intervention should not seek to create a monumental structure or a tourist attraction, but rather to strengthen the social fabric, which, in the case of the Matese, is quite fragile due to its isolation and vulnerability. Furthermore, since landscape is a social construct, it becomes fragile within the collective perception: While the karst conditions already give it a delicate connotation, social perception —or rather, social ignorance— makes it even more fragile. This sensitive approach to the inhabited territory is expanded upon by Anna Lowenhaupt Tsing's analysis in *The Mushroom at the End of the World*, in which she studies life and survival on the margins and in the ruins of progress, arguing that in peripheral or partially abandoned territories, subtle forms of coexistence, gathering, and collaboration emerge; a third social and environmental space that seeks solutions among what is left over. In this sense, Caminada provides the architectural response for the mountain based on respect for the place and meaningful materiality, while Tsing offers a political and social perspective on the margins, understanding these inner areas not as dead spaces, but as territories of opportunity and collaborative life.

Finally, the last pillar addresses the tectonic and methodological dimensions by defining how this line of thought translates into a design proposal and a construction system. The philosophical approach to construction draws on José Ortega y Gasset's *Meditación de la Técnica*, in which he notes that technology is not a neutral end in itself, but rather a means to well-being and to the fulfillment of the human project within its given circumstances. If technology becomes detached from real needs and the environment, it becomes alienating and destructive, thus justifying the rejection of large-scale structures and technological impositions in Matese in favor of a conscious and restrained approach to technology. This approach finds its spatial application in N. John Habraken's *Supports theory*, as outlined in *Supports: An Alternative to Mass Housing*, by articulating the distinction between the support —the primary, collective, and immovable structure— and the components —the secondary, flexible, and interchangeable elements— and by proposing the initial concept of a model that, through repetition and transformation according to certain parameters, manages to create projects that are distinct in form but similar in essence. The route of the funicular and the cable serves as the infrastructural support, while the stations are configured using an adaptable model —in this case, made of prefabricated wood— thus allowing the stations to be transformed, expanded, or repurposed according to community use and topographic elevation. Therefore, following Ortega y Gasset, technology is placed at the service of the place, while Habraken provides the design logic by separating fixed infrastructure from adaptable components.

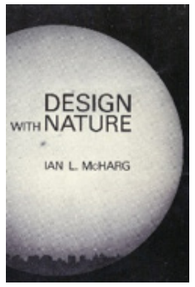
In conclusion, the insights of these authors demonstrate that it is possible to design a mobility network in Matese that is not a foreign —alien— object on the mountain, but rather a landscape-integrated infrastructure shaped in harmony with nature, which promotes coexistence on the periphery by using technology as a means to enable a system of adaptable supports.



Landscape Infrastructure
Pierre Bélanger
2016



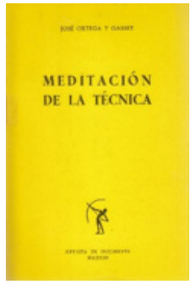
Cul zuffel e l'aura dado - Gion Caminada
Bettina Schlorhaufer
2005



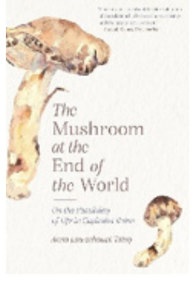
Design With Nature
Ian Mcharg
1995



Supports
John Habraken
1972



Meditación de la Técnica
José Ortega y Gasset
2015



The mushroom at the end of the world
Anna Lowenhaupt Tsing
2015

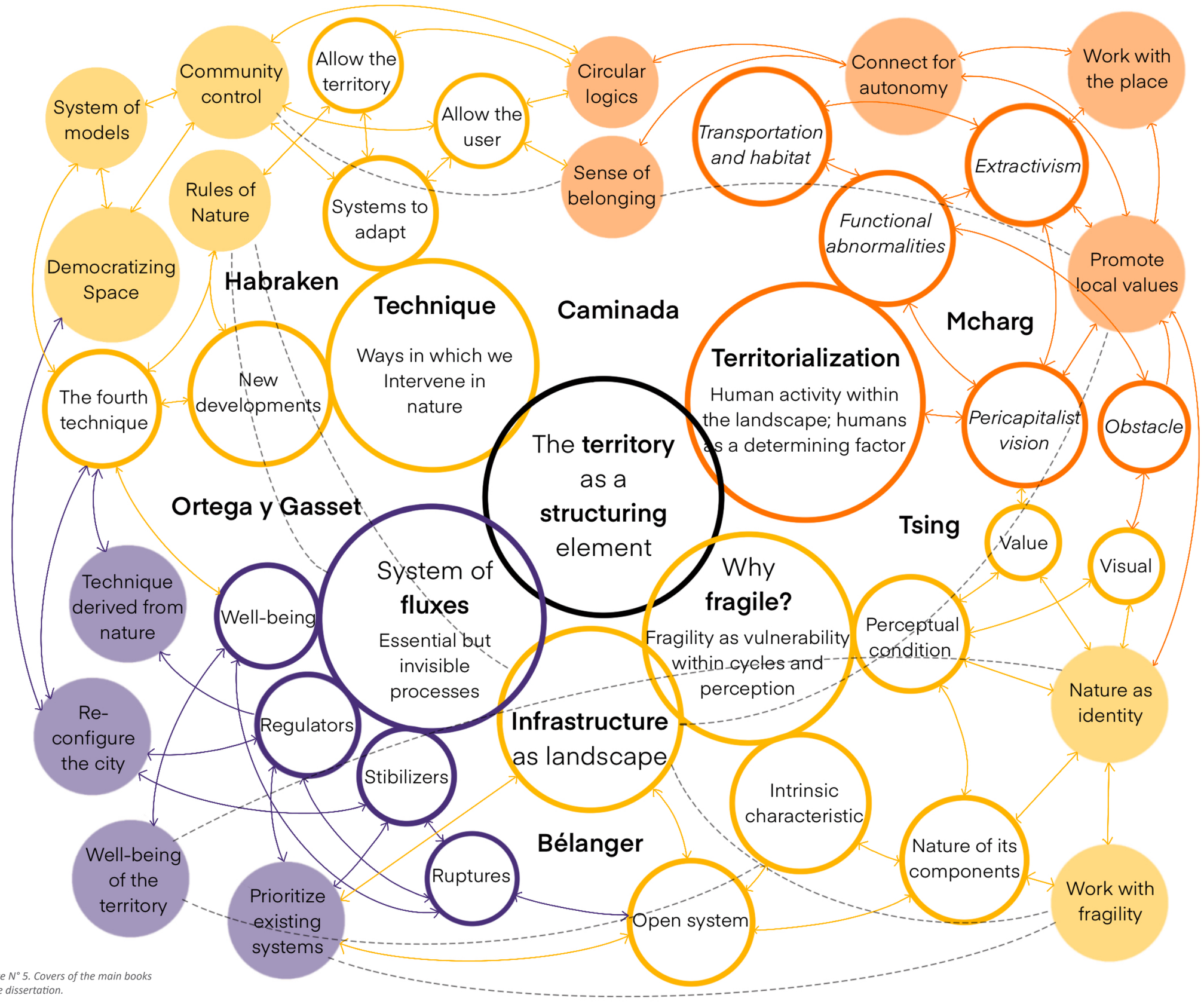


Figure N° 5. Covers of the main books in the dissertation.



Landscape Infrastructure

Defining Landscape Infrastructure

How to inhabit the mountains

Why fragile?

Applying at Matese

The human condition always requires a place: a territory in which to unfold, even if only for brief periods. I would argue that, within the classic space-time dichotomy, the spatial dimension prevails by constituting the material record of every event. History, architecture, and the dynamics of war are irrevocably tied to the place where they occur. Moreover, the environment acts as an active agent in the social, cultural, and political evolution of a community, where slight variations in temperature, light, or biodiversity shape specific behaviors. For this chain of transformations to be set in motion, an initial human presence in that environment is required. It is essential to understand the nature of the territory with which we interact: a mountain, a river, or a forest possesses its own dynamics, but when perceived through the human gaze, their phenomenological understanding is transformed. These configurations acquire names and meaning; and the only requirement to trigger that process was, quite simply, to contemplate them.

Over the years, that primitive approach to the landscape evolved, giving rise to various disciplines, regulations, and theories regarding human activity. We ceased to be mere observers and began to work on it, shape it, and alter it -to the point of denaturalizing it. The extinction of the cave bear[1] —approximately 40,000 years ago— and that of the Bramble Cay melomys in 2019 mark a tragic timeline of this impact. Thus, although the natural environment remains a fundamental pillar in the existence and shaping of our species, attempts have been made to systematically suppress it, as its unpredictability defies our control. Bélanger argues that the relationship we have built with the land over the last three centuries has been strictly vertical and hierarchical[2], erroneously positioning us at the summit. This verticality, born of a utilitarian and conquest-driven logic, responds to a modern dogma: nature as an obstacle to progress. Through the industrial revolutions, mechanization, and contemporary urbanism, we have established an apparent independence from the natural environment, only to ultimately work against it.

The impact of these actions was so excessive that the urban paradigm had to be rewritten —albeit superficially and with as little friction as possible; the aim was to integrate only the necessary dose of nature to alleviate the crisis. Thinkers such as Mumford and McHarg were part of this conceptual integration, taking the risk of granting the territory a leading role[3]. In Mumford's work, four key concepts can be identified for understanding the desirable symbiosis: the plowed field —the peri-urban agricultural dimension—, the garden—the incorporation of vegetation into the urban

1. *Extinction: Humans played big role in demise of the cave bear by Helen Briggs, 2019.*

2. *Landscape ad Infrastructure by Pierre Bélanger, 2016.*

In addition, Bélanger develops the concept of the imperial sovereign as an observer of the earth. This perspective on portraiture is not artistic, but one of domination.

3. *The City in History by Lewis Mumford, 1961. Design with Nature by Ian McHarg, 1995.*

Both authors concluded, around the same time, that the development of urban and architectural visions focused on nature was vital to ensuring the habitat's continued existence.



Figure N° 1. Landscape painting of the Matese region, titled Veduta di Piedimonte D'Alife, by the German artist Jakob Philipp Hackert, taken from the Comune di Piedimonte Matese. 1800

fabric—, the bridge —connecting infrastructure—, and the city —the form and distribution of the settlement—. Each defined the scope of their field, championing ecosystem vitality in the modern city. Decades later, McHarg took up this vision in *Design with Nature*[4] - a work with a foreword by Mumford himself—structuring an analytical methodology to articulate landscape and city. Starting from a critique of anthropogenic assessment systems, McHarg proposed that, before any design decisions are made, the various layers of the biological capsule that support the territory must be analyzed. However, despite the theoretical and practical value of these approaches, none fully resolved the friction generated by transportation networks. Roads and infrastructural scars continue to fragment ecosystems to connect populations at the expense of the environment; an excessive pace that ignores the territorial matrix and exacerbates its vulnerability.

4. *About nature.*

BoMcHarg presents hiw work as a personal will in which he expressed his fear for the survival of humanity.

This growth —disguised as necessary and environmentally responsible, yet still excessive— has intensified criticism and the search for solutions across various disciplines. In an effort to more rigorously assess our current scope of action, Anna Tsing warns that what we today consider nature or construct as landscape is nothing more than a ruin: the vestiges of an environment once believed to be infinite, which is named as *the third nature*[5]. Consequently, intervention must operate on these remnants —characterized by extreme fragility in both their ecological structure and social perception— to ensure the coexistence and survival of both systems. It is important to note that the fragility inherent in the landscape constitutes a vulnerability, not a weakness, as it harbors unique habitats and conditions that enhance biodiversity and ecological dynamics. However, this vulnerability becomes apparent when human-driven projects overlook these particularities and erase them to impose infrastructure. This reinforces a cycle in which the landscape ultimately comes to be perceived by the community as expendable. If we encroach on the territory and pave over its rivers —as has happened in Piedimonte— it is because nature does not yet play a foundational role in collective memory and planning.

5. *The mushroom at the end of the world by Anna Tsing, 2015.*

It is the life and unexpected resurgence that emerges from the margins and ruins ravaged by the pursuit of wealth accumulation. Tsing cites the resilience of the matsutake mushroom as an example.

As mentioned earlier, this approach takes shape in the search for a common denominator that is both conceptual and practical: infrastructure. If our species' drive for expansion and connectivity proves difficult to curb, the challenge lies in transforming nature into a strategic ally. For Bélanger, society has always interacted with the natural environment, though it has done so erroneously from a top-down perspective. If this relationship were reconfigured on a horizontal and equitable plane, the preservation and revitalization of the landscape would become the core of human habitat creation. Artificial attempts to replicate ecological or subterranean dynamics would become unnecessary, giving way to interventions with greater tectonic and material sensitivity. Conceiving of the landscape as the primary infrastructure —above any built artifact— would allow us to protect the environment we inhabit and revitalize territories that are dependent on but disconnected from their natural matrix, as is the case in the Matese region.



Figure N° 2. Photo of the hydroelectric power plant, taken from Fotod'epoca Piedimonte Matese. 1908

Defining Landscape Infrastructure

Human beings are agents who seek exercise control over their environment from the earliest stages of cognitive development. Evidence of this can be found in Carolyn Rovee-Collier's *cradle experiment*[6] in the 1980s, in which an infant just a few months old learned to manipulate the mechanisms of the toys around him. In philosophical terms, the infant intuitively understood the circumstances surrounding him and acted to obtain a benefit by exercising his own agency. Ortega y Gasset addresses this phenomenon in *Meditation on Technology,* noting that our species, in its constant pursuit of well-being[7] —distinct from the mere biological *existence* of animals— modifies the environment for its own benefit. To this end, technology emerges: the set of processes, artifacts, and ideas aimed at ensuring that well-being. At first, however, technology was fortuitous and unpredictable —almost a chance discovery. During prehistory, for example, the mastery of fire, the carving of tools, or the making of clothing resulted from accident rather than methodical planning: a stage that Ortega y Gasset calls *the technology of chance,* in which nature exercised absolute dominion over human existence. Although there was a natural awareness of the inhabited environment, it was really far from reaching the contemporary notion of landscape, as evidenced by cave art[9], which depicts animals, figures, and tools while omitting geographical features such as mountains or rivers. It results fascinating how artistic expression portrays elements derived from the ecological environment —skins, fauna, and tools— without conceptualizing the landscape as a whole, as if every component behaved or worked on its own.

Various analytical and collective advances made it possible to make the leap to the second stage formulated by Ortega y Gasset: the artisan's technique. During ancient times, individuals began to develop specialized knowledge and labor around specific trades and needs: blacksmiths, carpenters, shoemakers, weavers, goldsmiths, potters, and bakers. This evolution entailed the conscious appropriation of technique and its origins. Tools diversified, and the occupation of the territory took on a permanent character; crops were adapted to the qualities of the soil, giving rise to a *supernature*[10]. Tools came to be designed for specific purposes, acting as an extension of the body itself: while skill emanated from people, the complexity of the tools lay in the objects themselves. This increased well-being and expanded the capacity for leisure, which was defined by Ortega y Gasset as freedom from mere productive subsistence. Likewise, the iconography and texts of the period reveal how each artifact varied according to the landscape, incorporating rivers, valleys, domesticated fauna, and agricultural resources into territorial representations for the first time.

The final phase in this genealogy is the technician's technique. In the quest to maximize levels of well-being, productive capacity shifted toward the instrument through the invention of the machine. An emblematic example of this shift was Richard Roberts' mechanical loom in the early 19th century[11] —whose mechanism had been conceived by Edmund Cartwright decades earlier— which condensed entire days of artisanal labor into just a couple of hours. With this milestone, technology became alienated from the worker and the artisan: human ingenuity demonstrated that it could surpass the physical capacity of the individual, progressively relegating the natural environment to a secondary role. Whereas in earlier periods nature maintained its dominance and the landscape was an everyday presence, in the industrial era it became possible to intervene in and overcome it without apparent consequences. The scale of technology expanded to the point of reshaping entire cities and urban systems. However, just as mechanization redefined traditional trades and ushered in the performance-driven society, it also transformed our perception of the environment: whilst at first the



Figure N° 3. Evolution of the notion of technique as explained by Ortega y Gasset. Original work. 2026

6. *Reactivation of infant memory by Carolyn Rovee-Collier et al., 1980.*

7. *Meditacion de la Técnica by José Ortega y Gasset, 2015.*

However, Ortega y Gasset also asserts that this natural pursuit of technique has become an intrusive force that needs to be regulated; hence the origin of his work.

8. *About technology of chance.*

The noun chance is proposed, because any technical creation originated from mistakes or accidents.

9. *Absence of botanical European Palaeolithic cave art by Georgina Walton et al., 2023.*

10. *About supernature.*

Similar to the concept of third nature, a 100 years apart.

11. *Patenting of the Steam-Powered Loom by Martha Sherwood, 2023.*

landscape, as a given circumstance, determined dynamics and behaviors, today it is conceived as a mere obstacle destined to be overcome with increasing determination.

This crisis in relation to the environment —referred to as the *Crisis of Desire*[12], a directionless inertia of innovation that treats the environment as inexhaustible— was countered by Ortega y Gasset through a reinterpretation of the concept: just as human beings pursue a state of well-being, the environment we inhabit —the circumstance— must have its own to guarantee a true Landscape of Life. While well-being stems from technical development, it is also nourished by its external environment: by the unaltered, by those ecosystemic attributes that technology is incapable of replicating. We cannot allow artifice to ultimately suffocate human beings by disconnecting them from their roots and their own capacity for fulfillment.

The dilemma lies in the fact that this notion of superiority over circumstances is perpetuated by contemporary infrastructure, which continues to be perceived as essential for progress. While connectivity and material support are indispensable, current interventions routinely transgress social and ecological boundaries. This occurs, to a large extent, because modern technology operates through a chain of systemic dependencies: new digital environments, for example, require physical data processing centers that are complex artifacts in and of themselves. This cycle repeats itself on multiple scales, pushing holistic well-being out of the equation. Technology has attained such autonomy that it dispenses with the subject, postponing true quality of life in favor of a false notion of development. It is likely that Ortega y Gasset did not anticipate a scenario of this nature; perhaps our task consists of defining that new technological phase that will enable us to remedy the Crisis of Desire. This new model must place nature at the center of the equation, drawing on its own logic and dynamics to ensure the Landscape of Life: that of all forms of life, without exception.

Consequently, the theoretical framework most closely aligned with this technical reconfiguration is the one proposed by Bélanger in his work *Landscape as Infrastructure*. Drawing on a review of modern landscape architecture, Bélanger argues that landscape architecture —from its emergence as a discipline through the 21st century— has been built upon aristocratic and bourgeois narratives in which the natural environment functions as a mere decorative or contemplative attribute subordinate to the built

12. *About the crisis of desire*

Once a person's state of well-being has come to an end, a crisis arises due to the state of stillness into which they enter. With no further tasks or obstacles to face, a sense of loss of purpose emerges, leading to a desire to have a greater influence on the environment.



Figure N° 4. cover of The New Yorker magazine, taken from The New Yorker. 2026

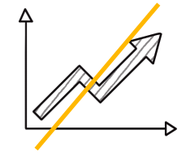
environment. Under this approach, the landscape is reduced to a pictorial, aesthetic, and superficial entity, completely disconnected from the metabolic and operational dynamics that sustain the contemporary city. In short, Bélanger's thesis also highlights the nine critical points of modern infrastructure and its approach that have allowed these imbalances to occur.

- **Catastrophic environmentalism:** The implementation of climate crisis mitigation measures in a reactive, rather than preventive, manner, ignoring and isolating the living systems that also seek to survive the crisis.
- **Keynesian growth:** Expansive models that prioritized public spending, ignoring the territory, its resource availability, and ecological complexity.
- **Taylorist Management:** A relentless pursuit of scientific efficiency, simplifying ecological and urban processes, thereby developing infrastructure as a closed, hierarchical system.
- **Euclidean Zoning:** Segregation and rigid specialization of land uses —commercial, industrial, residential— fragmenting the territory and blocking connections between ecosystem services.
- **State Centralization:** Dependence on central systems and authorities that have lost control over and the ability to monitor natural processes and peripheral areas, thereby becoming vulnerable and incapable of managing volatility.
- **Technological Mechanization:** The predominance and control of rigid, closed mechanical systems —hardware— over dynamic biophysical systems —software—.
- **Modern utilitarianism:** A vision characterized by prioritizing technical control and immediate utility, without considering more holistic social and spatial dimensions.
- **City-centrism:** An exclusive focus on the city and its impact, ignoring regional and cross-border flows at various scales, which are actually responsible for sustaining the city.
- **Fordist Accumulation:** Mass production modes that generate massive externality pollution, waste without a circular system to reintegrate them.
- **Mass production modes that generate massive amounts of waste:** pollution, poisoning, radiation, etc., without a proper system for reintegration or disposal.

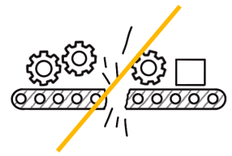
Catastrophic **Environmentalism**



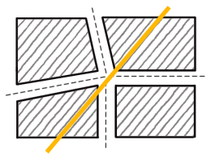
Keynesian Growth



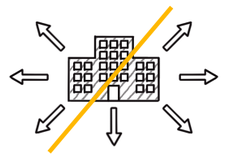
Taylorist Management



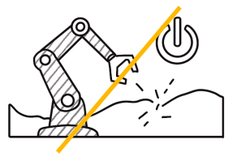
Euclidean Zoning



State **Centralization**



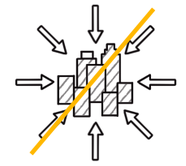
Technological **Mechanization**



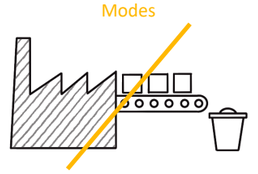
Modern **Utilitarism**



Fordist Accumulation



Mass Production Modes



13. *About hygienism*

In the face of multiple epidemiological crises, the decision was made to envision the sanitary city. However, this vision laid the groundwork for a dysfunctional relationship with natural systems.

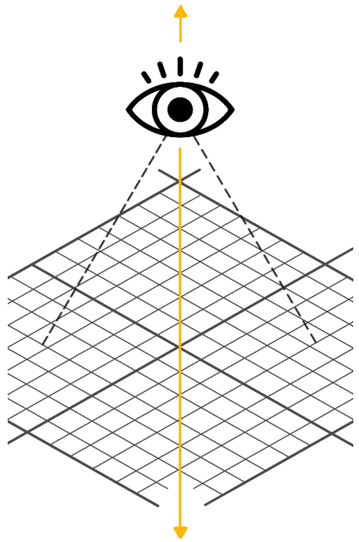
In this way, Bélanger's critique dismantles both the hygienist[13] visions of the nineteenth century and the functional zoning of the twentieth century, which confined parks to being mere aesthetic reserves while channeling or paving over minor riverbeds to make way for vehicular traffic. This planning approach projected the city from the inside out, ignoring the geographical qualities and ecological processes of its context. This narrow vision is incapable of responding to contemporary demands, which are dictated by climate change, ecosystem instability, and the rapid increase in the flow of matter and energy.

The collapse of the 20th-century urban model ultimately stems from its nature as a closed system. Traditional planning abandoned any holistic perspective by assuming that the human species constitutes an autonomous entity immune to ecological laws. Architecture and urban planning focused their efforts on optimizing the biological and industrial functions of human beings, segregating natural systems through rigid boundaries. Urban green spaces, lacking porosity and scalar integration, were rendered incapable of performing genuine ecological functions. Bélanger characterizes this phenomenon as the underperformance of master planning, denouncing the obsolescence of mechanistic layouts and arguing that the last century was not properly planned, but rather hyper-engineered through rigid industrial infrastructures that are now experiencing systemic failure. As a result, traditional criteria for territorial development are now obsolete, needing an urgent interdisciplinary approach that brings together landscape architecture, civil engineering, and ecological urban planning.

To place the landscape at the center of design priorities, it is essential to shift our perspective: moving from the imperial and vertical gaze —characteristic of conventional architecture— toward a territorial approach that interprets interconnected systems rather than isolated objects. If, at first, the act of contemplating nature transformed it into landscape, relearning how to look at it lays the groundwork for repairing this historical disconnect. From this new perspective, the environment ceases to be a static backdrop and becomes an active verb —*landscaping*: the act of cultivating, regenerating, and unleashing a place's biophysical potential, in opposition to structures of conquest. The goal is no longer to establish a definitive form, but rather to allow design to act as a facilitator of living processes. Under this paradigm, maintenance and its derives no longer corresponds as a secondary task and instead becomes the centerpiece of habitat creation.

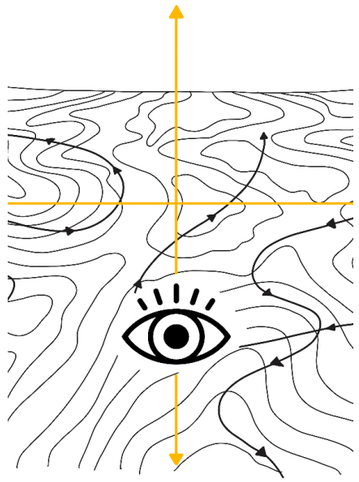
While traditional infrastructure is associated with degradation over time, the practice of cultivation requires a long-term commitment to care and constant renewal, recognizing that maintaining the territory is not a cost but rather continuous and adaptive attention to natural cycles. Thus, human beings become integrated into the ecological fabric rather than attempting to place themselves above it.

This integration can be explained using the analogy of *hardware* and *software*[14]: Bélanger proposes moving away from static infrastructure —characterized by hard materials and closed systems like hardware— to prioritize biophysical systems and social dynamics —software—. From this conceptual convergence emerge the *beta-structures*[15] of landscape processes, understood as a dynamic exchange between technological components— necessary but adjustable— and flexible biological processes. The most significant aspect of this approach is the redefinition of the role of infrastructure: while the networks that articulate the city vary in scale and tools, there are vectors whose behaviors are as vital as they are unpredictable. Bélanger refers to these engineering patterns —which shape the urban fabric while remaining open to social evolution— as *flows*[16]. It is through



14. *About hardware and software.*

This pairing, proposed by the author, makes it possible to create and understand various synergies and multifunctionalities.



15. *About beta.*

This definition of beta refers to an open, incomplete, and constantly evolving system.

16. *About flows.*

The concept of fluidity and flows is also developed by Angélica Trachana, as its better to understand cities as changing objects.

Figure N° 5-6. diagrams showing the vertical and horizontal relationships in the landscape. Original work. 2026

these flows that beta-structures are created, whose fluid and systemic configurations are able to regulate the economic metabolism of cities.
Consequently, rather than prioritizing the built form —streets, city blocks, buildings— territorial planning must focus on urban flows: water, waste, energy, food, fuel, and mobility. Bélanger adopts systems ecology to conceive of urbanization as an open metabolism where the fluidity of these networks across regions determines spatial form, and not the other way around.
Bélanger's methodological approach[17] culminates in the notion of Infrastructure Ecologies, understood as a multidisciplinary field of practice where design simultaneously manages the multiple scales of the territory, ranging from the biomolecular dimension to the global geographic scale. Starting from the landscape matrix, which has been profoundly altered by human action, this network of biophysical, social, and political dynamics operates in harmony with urban networks. This approach anticipates contingencies, risks, and metabolic flows to trigger living processes in which nature acts as a guiding force.

With regard to the scalar dimension, it is emphasized that any intervention generates direct impacts on the environment, provided that it considers the broader perspective and the temporal durability of its proposals. It is here that time plays a decisive role, as it involves material, biological, programmatic, and community cycles and transformations. This transdisciplinary collaboration — which brings together architects, ecologists, engineers, and planners — creates zones of intellectual jurisdiction where traditional professional boundaries dissolve. Bélanger argues that biological systems constitute the true primary economic services of the 21st century, demonstrating that urban viability depends on the health of its biophysical supports: water, soil, and energy. Consequently, this transition requires transforming linear industrial structures into circular and multifunctional infrastructures capable of activating programmatic synergies and valorizing waste within the ecological cycle.

So how might the concept of *landscape as infrastructure* be defined? As an instrumental and operational strategy that seeks to give visibility to the residual forms of nature resulting from anthropocentric logics, through new infrastructural techniques capable of intervening in the landscape, blending the best of both worlds without fractures and exclusions. As established earlier, the imminent collapse evident in the contemporary world stems from behaviors and notions of selfish toward nature, which should be the true determining factor in architecture and urban planning. As Daniel Czechowski, Thomas Hauck, and Georg Hausladen assert, ecology must be one of the primary drivers of urban renewal in order to establish intrinsic systems[18] with benefits ranging from the proper management of materials and waste to the health of residents. Thus, this process of acceptance begins with soft, flexible systems that incorporate permeable processes —from the analysis phase, as proposed by McHarg, through to architectural design. According to Neeraj Bhatia and Lola Sheppard, this sensitivity allows us to understand the complex, invisible network we inhabit, monitor its changes, and thereby transform this *third nature*[19] in which we live. It is important to emphasize that these strategies proposed by the concept of landscape infrastructure do not represent a step backward; they do not deny the damage that has been inflicted on the land, nor do they call for a clean slate for infrastructure[20]. It is about taking that step between our perception of and relationship with the landscape and the infrastructure that surrounds us, with the aim of creating harmonious systems for experiencing the city, the landscape that comprises it, and the architecture that nurtures

17. *About Bélangers methodological approach.*

He defines it as undisciplined because it is based on abductive thinking, since it operates and draws conclusions from incomplete, imprecise, and missing information.

18. *Revising green infrastructure by Daniel Czechowski et al., 2014.*

Parametric Ecology for Data Processing.

19. *Goes Soft by Neeraj Bhatia and Lola Sheppard, 2013.*

In addressing the concept of the third space, which is also described as invisible, it is argued that our impact is, to a large extent, also invisible.

20. *About the past*

Bhatia and Sheppard maintain that any contemporary project must take into account the past and the evolution of compositional elements

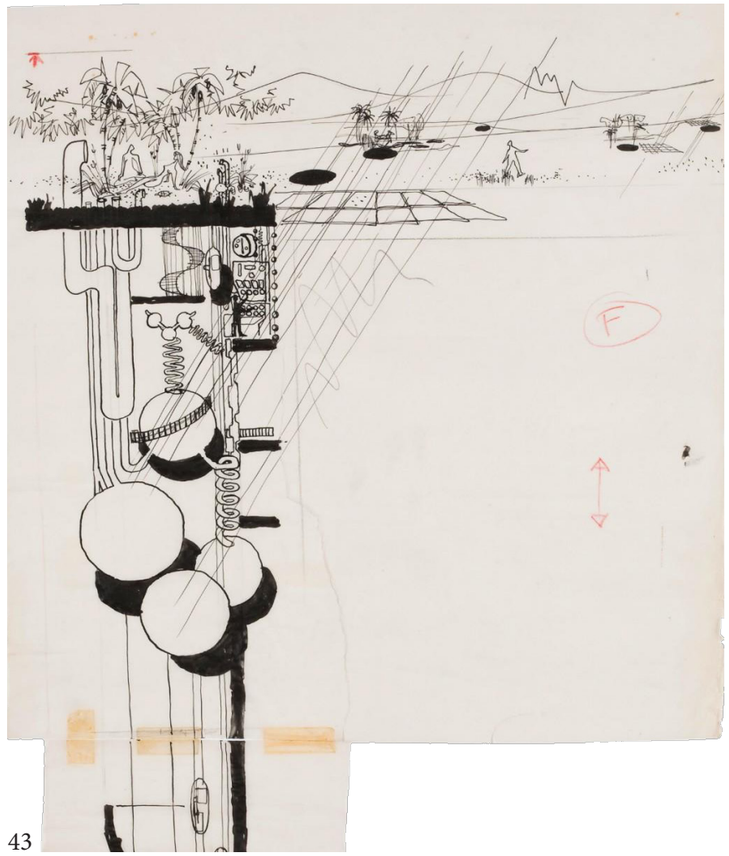


Figure N° 7. Underground area of a Climate-Controled City, taked from the Yves Klein archives. Yves Klein. 1959

and facilitates that constant relationship.

In the face of contemporary complexity, how might the concept of *landscape as infrastructure* be defined? This approach should be understood as an instrumental and operational strategy aimed at granting visibility and intelligibility to the resulting *third natures*, or *super-natures*: spaces that are residual or forgotten by anthropocentric logics of urbanization. Its fundamental purpose lies in deploying techniques for territorial intervention capable of acting directly on the geographical matrix, hybridizing and respecting biophysical systems and technical infrastructure within a continuous assemblage, thereby avoiding sharp ruptures or spatial exclusions.

As argued throughout this study, the ecological crises and vulnerability that characterize the contemporary world stem from development models that have embraced blind, unidirectional growth at the expense of the natural environment. Following the reasoning of Daniel Czechowski, et al., the ecological dimension must be positioned as a structuring agent in urban and territorial renewal[21]. Only by integrating ecosystem processes into the very foundation of the project is it possible to consolidate high-impact intrinsic systems, whose benefits range from the circular management of materials and resources to the health and holistic well-being of the communities inhabiting the space.

From this perspective, transforming the intervention model requires the design of soft and flexible infrastructures: permeable and adaptive systems that incorporate the temporal variable into both their diagnostic methodology and their tectonic formalization. Building on the layer-by-layer analysis proposed by Ian McHarg —whose concept of cartographic overlay and territorial aptitude allows us to understand the dynamics of the land before imposing any project— we then extend this analytical rigor to architectural design, where the design sensibility emphasized by Neeraj Bhatia and Lola Sheppard comes into play: an approach capable of reading and monitoring the invisible network of ecological flows, energies, and tensions that sustain the human habitat, thereby transforming the traditional notion of the built environment to consolidate an authentic third nature where the technical and the biological coexist.

It is essential to emphasize that methodologies derived from landscape infrastructure do not imply a nostalgic return to a primal state of nature, nor do they seek to ignore the imprints or scars that industrial processes have left on the territory. Nor do they suggest a tabula rasa that destroys inherited infrastructure. Instead, the aim focuses on promoting a critical transition in our perception of - and ways of relating to— the landscape and the networks —ecological, technical, social— around us. The goal lies in constructing harmonious systems in which the city, the ecological matrix that shelters it, and the architecture that articulates this constant interaction operate as a single living organism in a state of perpetual adaptation.

21. *About ecology.*

A sustainable articulator for a belonged landscape. As environmental awareness spreads among the population, local initiatives will become increasingly widespread and spontaneous.

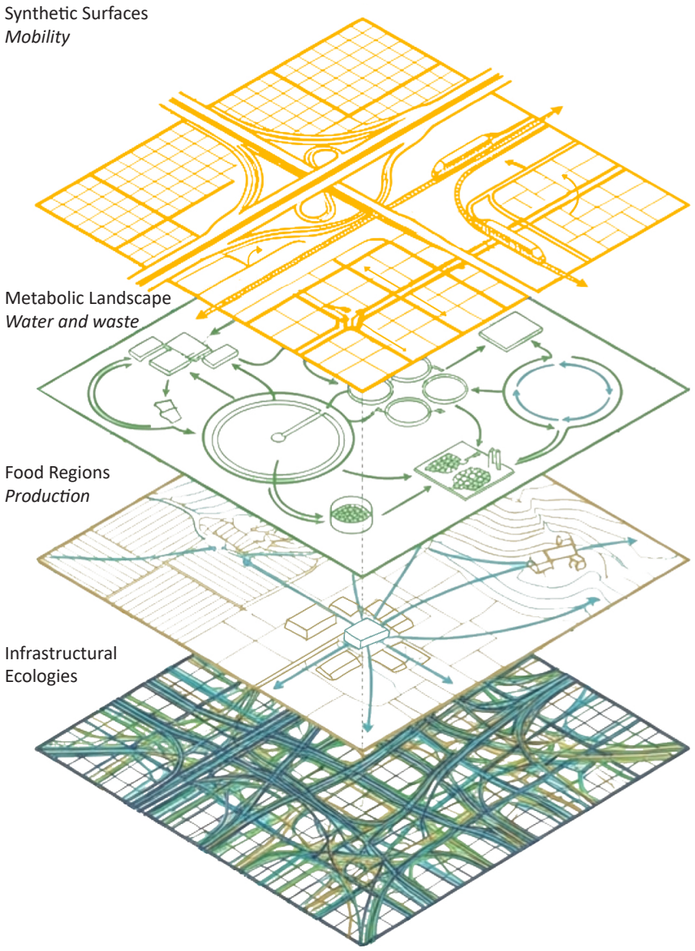


Figure N° 8. A breakdown of the layers of the landscape according to Bélanger. Original work. 2026

How to inhabit the mountains

After examining the concept of landscape infrastructure and establishing its strategic scope in both the instrumental and metabolic fields, it is essential to situate this theoretical approach within the physical and geological reality of the Matese. Infrastructure never behaves as a homogeneous plane or an abstract map; on the opposite, it is precisely the differences in elevation, roughness, and discontinuities of the terrain that justify and call for technical interventions. In the Matese landscape, shaped by a karst mountain system, distinctive geophysical characteristics emerge: an abrupt terrain, steep slopes, and marked variations in temperature and climate depending on altitude. The mountain, therefore, becomes the most authentic and defining structural matrix of the territory.

From this perspective, infrastructural, architectural, urban, and agricultural interventions are at the mercy of the slope. According to Angelica Trachana's theoretical framework, natural elements are not passive components but rather fundamental categories for interpreting the urban reality through three key roles: as a *structuring matrix*, as a guide for *layout*, and as a bearer of *iconology*[22]. Mountain geography encapsulates this triple condition with singular power. Its crests, valleys, and breaks define the physical boundaries and containment edges that shape both the established settlements in the valley —Piedimonte or Alife— and the scattered settlements on the higher elevations —Castello or San Gregorio. At the same time, the morphology of the mountainside shapes the sinuous layout of trails, roads, and squares. Finally, the mountain itself serves as the most symbolically significant icon of identity within the collective memory of the Matese, visible even in historical marks such as the scar left by the water conduit that cuts across the hillside. This presence shapes the rhythms of life even for those who do not reside at the summit— a spatial articulation allegorically imprinted in the very place names of *Piedimonte*.

Translated into the design proposal, the integrated system of the funicular and aerial cable car is explicitly conceived as an architecture of the slope - a device designed to engage with verticality. In line with the views of Ian McHarg and Pierre Bélanger, the mountainous landscape reveals itself as a highly complex fabric where visible and invisible biophysical logics interact. Intervening in this context requires first mapping the *third natures* —hybrid ecologies arising from human logics in the territory— in order to account for the ecological constraints that govern the area's habitability.

Inhabiting the mountain therefore demands the ability to decipher multiple simultaneous dynamics. By combining Lewis Mumford's historical perspective on urban processes with McHarg's methodology of territorial layer analysis through *overlay mapping*, the occupation of the Matese can be synthesized into four categories of spatial experience: settlement and densification, passive activities, production and sustenance, and networks and systems of connection. As Gareth Doherty and Charles Waldheim argue from the perspective of ecological urbanism, the key to understanding a settlement lies in assessing its degree of interaction with the landscape matrix. It is in this metabolic friction that the forms, dynamics, and labor that constitute the territory as a living palimpsest[23] —open to new infrastructural interpretations— are revealed.

22. *Arquitectura y cosntrucción de la forma urbana by Angélica Trachana, 2008.*

Structurating matrix as all the material and non-material elements that define the essence of a place, whether in terms of population composition, function, or land use; layout as the history inside the streets and their physical transformations, pointing out that even the smallest detail in width, material composition, or shape reveals the past; iconology as the recognisible elements that create spatial and cultural notions, and they can be either negative or positive, as well as perceptual or physical.

23. *Is landscape...? by Gareth Doherty and Charles Waldheim, 2015.*

This concept of the palimpsest is the conclusion of a compilation of various texts written by landscape experts. They note that among the themes addressed by the palimpsest, the ability to mediate relationships, form, dynamics, and work stands out.

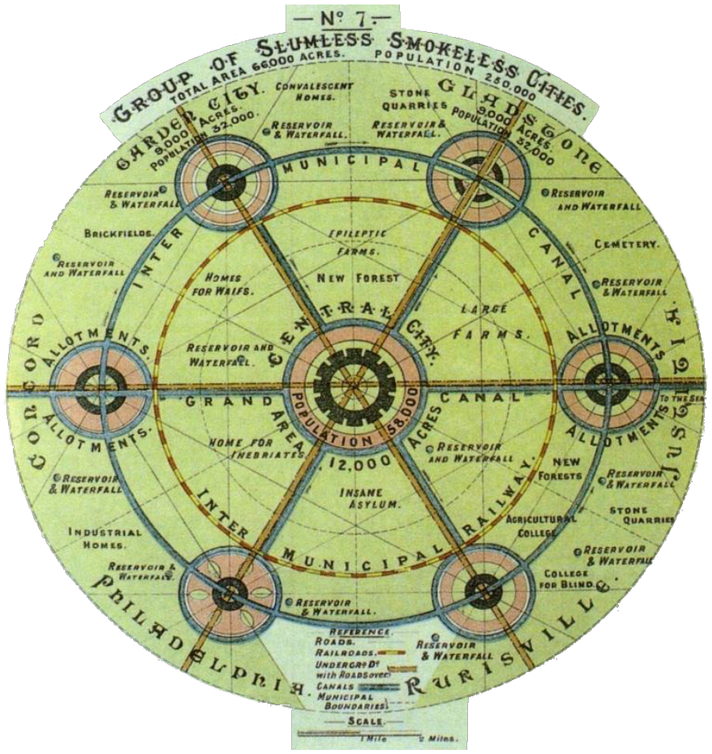


Figure N° 9. Ebenezer Howard's famous Diagram No. 7, titled Group of Slumless, Smokeless Cities, taken from Garden Cities of the Future. Ebenezer Howard. 1898

Settlement and Densification: *The city*



Figure N° 10. informal neighborhood where the Caracas Cable is located, taken from Arquitectura Viva. Iwan Baan. 2009



Figure N° 11. La Mariposa neighborhood, home to one of the world's largest murals, taken from El Tiempo. Alcaldía de Bogotá. 2021

The concepts of settlement and densification capture with remarkable precision the tensions of the contemporary urban reality. The city is no longer limited to the act of settling on the ground —as it was for millennia— but operates under the need to densify: to increase the built-up mass, optimize usable land, and multiply the number of occupants within the same space. From an ontological perspective, this phenomenon refers to the increase in material density itself; to the stereotomic process of the urban mass, where concrete and steel impose a structural heaviness on the terrain. As Lewis Mumford rightly points out, the city acts as an integrative and interdisciplinary organism, whose spatial drive not only shapes human life but also drastically reconfigures the ecological matrix surrounding it, absorbing or fragmenting the landscape in its path.

In mountainous regions, the most recent patterns of settlement exhibit a strong tendency toward grouping, creating patterns whose morphological logic —or lack of regulatory standards— is often labeled as *informal*. In response to this interpretation, Brillembourg argues that the term *informality*[24] is applied pejoratively when reduced to notions of poverty or technical deficiency. However, cases of high topographic complexity —such as the self-built neighborhoods on the hillsides of Caracas or the socio-spatial intervention at *La Mariposa*[25] in Bogotá— demonstrate the existence of internal orders capable of engaging in a dialogue with the slope. Brillembourg emphasizes that, with or without a regulatory framework, any action taken on the terrain has an inescapable impact on the construction of the landscape —not because of the structure itself, but because of the significant demand for infrastructure systems that it requires. A spontaneous settlement can become established and integrate organically into the slope without acting as a parasite; in contrast, a formal development that complies with regulations can cause irreversible alterations by ignoring the biophysical fragility of the mountain, particularly with regard to runoff and the geotechnical stability of watersheds.

This structural vulnerability was analyzed early on by Ian McHarg,

24. *SI/NO by Alfredo Brillembourg et al., 2015.*

The social construct of formality implies a negative connotation for its opposite. Brillembourg defends informal systems because their logic is entirely original, site-specific, and attuned to their environment.

25. *Comunidades de aprendizaje mutuo para el desarrollo by Alcaldía Local de Usaquén, 2013.*

La Mariposa project is an example of overcoming adversity, in which, starting with informal settlements, a neighborhood with a strong social and natural fabric was developed in the city of Bogotá. Of particular note are the green belts that the community is fostering toward the mountain.

who developed a rigorous study of construction suitability based on slope gradient. McHarg proposed limiting dense urbanization to slopes with gradients of less than 5 percent, restricting construction to extremely lightweight structures on slopes of up to 15 percent, and prohibiting any development on slopes of 25 percent or greater, suggesting extremely low densities —a single building per hectare— to avoid compromising the environmental matrix. However, this strict conservation approach runs the risk of being segregating, as it seeks to confine the city exclusively to valleys and high plateaus. The root of this prohibitive stance lies in a historical gap: a lack of understanding of the components of the ecological support system.

In contrast to this segregationist vision, authors such as Pierre Bélanger and Diana Wiesner advocate for reconciling habitability with the landscape's autonomy[26]. Bélanger points out that the two-dimensional bias of traditional architecture has prevented the discipline from understanding elevation and topographic section, proposing instead a cross-sectional reading —an *ecological section*[27]— to capture the variations at each level of the terrain. For her part, in her approach to Bogotá's Eastern Hills, Wiesner argues that protecting the mountain does not require absolute isolation but rather allowing the community to traverse it and letting the ecological flows from the mountain top permeate the city.

In this search for balance within the mountainous topography, the relationship between urban growth and the mountainside cannot be defined as a simple horizontal or vertical expansion, but rather as a metabolic friction that seeks adaptation. The fundamental question is not how to freeze the territory or how to subdue the slope, but to what extent is possible to inhabit the slope by transforming the traditional notion of densification —from a predatory mass to an infrastructural support— without jeopardizing the stability of the ecosystem or abandoning social development. Growing in the mountains implies understanding that the urban boundary is no longer a fixed line on a map but rather an area of constant negotiation between flows and structures. The answer therefore requires adaptive regulation that accommodates the needs of residents through the flexibility of the mountain's topography. In the words of Kenneth Frampton, this understanding of growth and respect for place comes from being in *synchroneity* with the landscape, almost as if buildings *grow out of the mountain*[28]: a state where architecture and urban planning are not perceived as objects placed randomly, but as elements that emerge from the very heart of the earth itself, finding points of exchange so that the built environment and the mountains can flourish simultaneously.

26. *El Camino de los Cerros by Diana Wiesner, 2007.*

One of the key aspects of the landscape's autonomy that the author highlights is its ability to insert itself into the city and mediate it.

27. *About the ecological section.*

Both Bélanger and Wiesner highlight the importance of verticality while studying the landscape, due to the sensible changes that each meter above the sea level creates in the terrain. Species, interactions, and sub-terrain compositions are constantly changing.

28. *About emerging from the mountain, from Is Landscape...?*

Frampton highlights the Parthenon as a classic example of this synergy in which architecture and nature complement each other.

Passive Activities: *The garden*



Figure N° 12. Color reconstruction of the original Cerdá Plan project, taken from Eixample Barcelona. Ildefons Cerdá. 1859

One of the most revealing aspects of landscape architecture lies in the broad spectrum of interactions it engages in with human beings. As has been argued, landscape is often brought into being through the reflective act of looking: simply contemplating it is enough for geography to become landscape. Based on that initial perception, the scope of an intervention branches into two operational categories: active activities —if you'll pardon the redundancy— and passive activities. The former requires an explicit physical modification of the ecological matrix, ranging from earthworks, the clearing of vegetation, or the alteration of slopes to urban expansion, agricultural subdivision, and the installation of utility networks. In contrast, passive activities seek to inhabit the place *per se*; to directly experience the natural environment without irreversibly altering its dynamics.

Lewis Mumford refers to this contemplative state as *the garden*[26] —stripped of any connotation of private property or enclosure— understanding it as the reserve space to which humans turn in search of rest from the fast-paced rhythms of cities; a true internal refuge where temporalities unrelated to anthropocentric concerns prevail. Along the same lines, Catherine Ward Thompson points out that passive activities constitute a biopolitical need for disconnection from urban sensory overload, a need that is further supported by numerous health benefits[30]. However, in the contemporary era, pure nature —ignoring any connotation or human intervention— is almost nonexistent; most of the landscape has been humanized, extending the concept of landscape to the very limits of the unknown.

With regard to passive activities in the mountains, they rarely occur in a technical void: they require minimal infrastructure to facilitate accessibility, which raises a methodological dilemma regarding their limits. Do discreet signage or the compacting of a trail by passing hikers transform the essence of the ecosystem? Historian Robin Kelsey suggests that the boundary of a passive activity is crossed the moment a rigid physical barrier is introduced[31], for example, the installation of structural handrails or invasive walkways to provide access to a cave or a cliff, thus turning it into an active intervention. While Kelsey's stance prioritizes strict conservation that prevents human presence, the design approach must seek a middle ground: a balance that ensures subtle accessibility without altering the logic of the ecological support system. Invading the mountain turns it into a topographical obstacle; completely isolating it fosters ignorance of its values and closes off the possibility of forging long-lasting symbiotic relationships.

Additionally, passive activities act as catalysts for the preservation of what Pierre Bélanger classifies as *stabilization structures*[32]: ecosystems that nourish and sustain both the city's systems and them. Low-impact human presence lends public and political visibility to the territory, serving as a foundation for the creation of national parks or regional reserves such as those protecting the Matese mountain range. Far from reducing nature to a passive cushion around the urban landscape, it becomes possible to reverse the flows of growth. Instead of asking solely how city residents access the summit to escape, it is

29. *About the garden.*

The concept of the garden emerged as a reinterpretation of Ebenezer Howard's theories. Its main distinguishing feature lies in its social and decentralizing role.

30. *About pasive activities, from Is Landscape...?*

These benefits range from physical and mental. Thompson highlights its role as a social regulator, since the perception of health plays a key role in the functioning of the city and the revitalization of neighborhoods.

31. *About boundaries, from Is Landscape...?*

This conclusion stems from a photographic and historical analysis. It concludes that the notion of landscape, both in paintings and in photography, has always separated the city from nature, whether through framing, visual barriers, or the very exclusion of the city from the frame. Thus, appreciation for the landscape itself arises from non-intervention. Although Kelsey proposes a social insertion, he rejects the presence of the city.

32. *About stabilizing structures.*

It is suggested that these mechanisms be used as the sole alternatives for any engineering proposal. This is due to the static nature of concrete solutions.

worth exploring how nature can penetrate the city according to its own cycles. Drawing on Cristiam Sabogal's notion of *other-ation*[33] - understood as an epistemological turn that shifts the focus away from relentless innovation, originally called *otración* —the text raises the need to test alternative actions to mitigate environmental degradation. *Otheration* in the mountains does not imply paralysis or abandonment of the territory, but rather the design of soft, permeable systems that allow, for example, the karst ecosystem to gradually invade the residual spaces of neighboring municipalities, fostering a reassembly of the urban and the wildlife.

Consequently, passive activities — conceived from a perspective of low-impact accessibility— possess a transformative capacity that is crucial to the territorial project: they enhance ecosystem protection through the appropriation of the landscape. The community that explores and understands the fragilities of its environment develops an active sense of ownership to defend it. However, it is important to acknowledge the relevance of the boundary drawn by Kelsey: planning for passive accessibility does not mean micro-colonizing every corner of the mountainside[34]. There are invisible systems, underground dynamics, and water reserves that must remain inaccessible, ensuring that infrastructure acts as a mediating veil and never as an instrument of domination over the mountain.

33. *Diseñadores para una innovación epistémica by Cristiam Sabogal et al.*

The conceptual premise of this idea is to ask what that other solution might be — one hidden by its simplicity and apparent austerity. It is important to emphasize that this approach is not an ode to tradition, as it also recognizes that times and needs change. Thus, this approach involves the implementation of existing principles that do not depend on technological progress. Back to basics.

34. *About preserving.*

A landscape is a landscape because it is unspoiled, unexplored, and worthy of admiration. The author reflects on the question of where humans are in landscape photographs; the answer is: it is humans who create the photograph.



Figure N° 13. Watercolor titled Communipaw, New Jersey, taken from Meisterdrucke. Thomas Moran. 1884

Production: *The plowed field*

35. *About the plowed field.*

The first time Mumford discussed this concept was in his book Technology and Civilization, influenced by Patrick Geddes, in which he asserts that cities arise and develop on the land, where agriculture becomes a permanent emblem. It is not until The City in History that he discusses the rupture in the city's inherent process of regeneration. Now, the city's relationship with the countryside is purely extractive.

36. *About the bourgeois city.*

The problem lies in the ignorance and invisibility to which the plowed countryside was subjected. From a perceptual standpoint, the city was understood as an organism that did not need nature, even as it continued to draw on it, in a more discreet manner.

37. *About the euclidean zoning.*

The concept of Euclidean zoning originated from the landmark 1926 U.S. court case Village of Euclid v. Ambler Realty Co. This ruling forever changed urban planning by declaring the division of land into zones with exclusive land-use designations.

38. *About fordist logic.*

The technological transformation brought about by the Ford Company's mass production reshaped modes of production and practices in infrastructure and urban design. These approaches emphasized the division of the city and concealed its destructive byproducts, causing great harm to nature.

Along with the contemplative dimension of the environment, productive labor is one of the fundamental acts through which human activity transforms the physical matrix into landscape. The domestication of the land replaced nomadic dynamics with models of permanent settlement where food and resources could be cultivated, stored, and exchanged. However, as the contemporary city expanded its footprint, the relationship between the urban core and its productive base suffered a significant distortion, leading to the segregation and devaluation of agricultural landscapes. This rupture is paradoxical: in Mumford's urban theory, productive space — conceptually termed the *plowed field*[35]— constitutes a vital entity inseparable from the built fabric, sustaining a reciprocal metabolic dependence that time has attempted to render invisible.

According to Trachana, the physical and symbolic marginalization of agricultural labor was cemented with the emergence of the bourgeois city, when the mercantile economy displaced agricultural uses from within the urban fabric[36]. Under this logic, the countryside came to be perceived as a utilitarian periphery that should be kept on the margins of civilized life. As Pierre Bélanger analyzes, this distancing reached its climax in the 20th century with the institutionalization of *Euclidean zoning and the Fordist production line.* These models strictly zoned the territory to segregate areas of extraction and cultivation, seeking to create spaces of containment or functional reserves that would prevent interference with the city's functioning. This isolation not only fragmented the territory but also heightened its systemic vulnerability: the plowed countryside became a sort of enclave, with its own networks and services, where the urban population lost all sense of the origin and ecological footprint of the goods it consumed, giving rise to deeply fractured landscapes. In mountainous contexts, the imposition of *Euclidean zoning*[37] *and Fordist logic*[39] proves not only arbitrary but also ecologically destructive. Sloped terrain does not offer large, homogeneous planes suitable for industrial zoning; on the contrary, agriculture or livestock farming on slopes requires drastic alteration of the land through terracing and complex channeling systems that alter the stability of the mountain. Ian McHarg emphasizes that a mountain's ecological composition —its forests, flora, and soil profiles— is governed by invisible balances [39]and vulnerabilities. Every variation in slope affects water absorption capacity, biophysical cycles, and soil cohesion; thus, the removal of vegetation cover for intensive exploitation triggers erosion and environmental disasters.

In the face of this crisis of disarticulation, project-based research in mountainous regions demands a reevaluation of production based on the soil's capacity to sustain life and infrastructural connectivity. First, McHarg advocates for the strict conservation of native forest cover on steep slopes as a primary risk-prevention infrastructure, where the forest acts as a cushion against disasters. Second, for those slopes where agricultural activity or mineral extraction continues, authors such as Gareth Doherty and Charles Waldheim propose the concept of *re-grounding*[40]*:* a theoretical, spatial, and operational reconnection between productive systems and the contemporary city. *Re-grounding* proposes gradually reintegrating these activities into urban life, transforming cultivated areas and infrastructure into public spaces and hybrid systems. By restoring visibility to the *plowed fields* on the mountainside, agricultural production ceases to be viewed as an extractive or marginal activity and comes to be understood as an integral part of the landscape's identity. The rehabilitation of this productive dimension not only mitigates the social and ecological fragility of the territory but also restores the dignity of agricultural labor as the indispensable metabolic mechanism for sustaining

39. *About invicible balances.*

Both Two aspects of the landscape's invisibility stand out: its external formation and its fundamental, unpaid role. McHarg argues that all variation among ecosystems and landscapes is the result of invisible dynamics, and that, in turn, these dynamics perform functions that are necessary for cities, without requiring any compensation.

40. *About re-grounding.*

It is a shift in the scale of gardening, complementing concepts such as Udo Weilacher's urban gardening. It is an act of social and technical connection aimed at caring for nature.



Figure N° 14. Black-and-white engraving titled Dusty Plowing, taken from National Gallery of Art. Bernard Joseph Steffen. 1939

Networks: *The bridge*

41. *About the bidimension.*

Conventional urban designs are criticized because, when a road is drawn on a map across a mountain, all the important considerations are overlooked. Moreover, they are overly simplistic.

42. *About the anthropocenic individual.*

It highlights three fundamental characteristics of infrastructure development during the Anthropocene: its reductionist economic model, the relentless pursuit of efficiency and profit, and the illusion of absolute control.

43. *About flows.*

According to the author, it is these flows that make her analytical approach—based on tracing, structure, and iconology—possible.

Finally, we come to the most visible category, and, if not executed correctly, the most harmful one. We are referring to the *bridge* proposed by Mulford, which alludes to transit and interchange systems that overcome territorial obstacles. Its importance lies in the fact that it is part of the three categories mentioned above, while also serving as a driving force behind the landscape. For example, roads within the city —or the bridge itself— can be understood as elements of infrastructure. To facilitate passive activities in a minimally invasive or efficient manner, infrastructure plays a key role in access points. As for plowed fields, infrastructure is key when it comes to transportation. This reveals a pattern that demonstrates the intrinsic nature of infrastructure, which can be summarized as enabling the holistic functioning of a city, especially when there are no mechanisms to guarantee autonomous processes.

Carrying out a mobility project in a flat area or in a city presents a low degree of difficulty, as there aren't really many obstacles to overcome; however, when it comes to a mountain, the techniques required to navigate that major obstacle become challenging. The main risk, in Belanger's words, is that such projects are two-dimensional[41] and lack permeability. Furthermore, McHarg asserts that all infrastructure projects revolve around the economic factors the community can afford and the geometry of the terrain; and most of the time, both aspects are compromised. This behavior is called the *indifference of the anthropocentric individual*[42].

Therefore, given this scenario, three alternatives —both conceptual and technological— emerge. The first comes from Trachana, who proposes understanding networks and mobility systems not as rigid elements with a single mobility function —travel from A to B— but as a system of flows[43]. A highway signifies human flows, which may consist merely of people, or of talent, or of labor; likewise, the highway creates economic, material, relational, and transactional flows. However, just as it creates, it also disrupts or destroys flows. For example, water management would begin to function according to the logic of the highway as long as a proper water collection system is implemented; similarly, the highway would also disrupt ecological flows involving both the flora and fauna present in the territory, while also acting as a scar on the landscape. McHarg then prioritizes social and environmental well-being over economic or functional considerations[44], asserting that if a project exceeds the ecological or social capacities of a territory, alternatives must be explored or the project simply must not be carried out. He also adds that the autonomy provided by infrastructure can be replaced by unique elements: he cites the example of a sewer system preceding an urban planning scheme. A network as essential as the sewer system, once established, accelerates the city's expansion and increases the risk of groundwater contamination, without allowing the exploration of alternatives; in contrast, a system of individual septic tanks reduces the scale of the operation. Thus, the pursuit of individual, replicable solutions also achieve the same objectives as a large, complex network. Finally, when it comes to mountainous terrain, Belanger proposes *aerial mobility*[45]*:* leveraging advances in infrastructure to opt for less invasive systems, especially when it comes to traversing elevation changes— much like the *metro cable* proposed by Urban Think[46]-Tank for Carcas, which is justified by the need to fly over a territory as dense and difficult to develop as the city's districts.

In summary, infrastructure networks in mountainous areas —recognizing that any intervention becomes a compositional element of the landscape— must possess sufficient sensitivity and efficiency to connect and traverse the territory, ensuring the autonomy of those involved, whether ecological or social in nature.

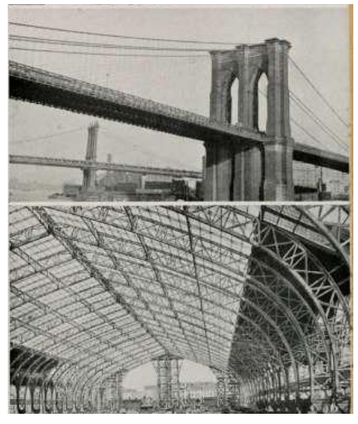


Figure N° 15. Illustrated photo spreads from Technics and Civilization, taken from The Ted K Archive. Lewis Mumford. 1934

44. *About economy and well-being.*

Mega-projects or spectacular architectural structures, usually viewed as foolproof revitalizers, can disrupt the internal functioning of a fragile region.

45. *About aerial mobility.*

It is important to understand that Belanger's work, although it begins as a critique, does not seek to condemn infrastructure, but rather to rethink how it functions in order to address the fragility of territories. An example of this is the adaptation of transportation infrastructure as an alternative to land invasion.

46. *About the metro cable.*

The principle behind its implementation is the same as Belanger's, but it focuses more on the social fragility of mountain settlements. The logic of the settled population—which is so difficult to establish, yet manages to use the space without major repercussions—must also be preserved.

Consequently, the relationship between the urban reality and mountain geography can be approached from multiple dimensions and scopes, highlighting different physical qualities and strategic objectives. It is essential to emphasize that this analytical framework is based on an understanding of nature that has already been humanized and culturally transformed. While there are unique territorial configurations that fall outside this framework, the proposed matrix engages in a fluid and coherent dialogue with the physical reality of the Matese. Nevertheless, one irreplaceable characteristic emerges —closely linked to the project's origins within the academic dynamics of the Villard[47] Seminary— namely, the hierarchy and decisive scope of infrastructure relative to the other dimensions of the landscape.

47. *About Villard.*

The project was presented in response to a call from the residents of Matese. What is interesting is that in all the proposed projects, infrastructure and the idea of connecting spaces were always present, sometimes prioritizing spectacle over social function.

Although there is an undeniable interdependence between the urban settlement, the areas of contemplative preservation, and the agro-pastoral production zones, the infrastructure network establishes itself as the most significant and unifying dimension. While the density of the residential fabric, the biotic reserve, and productive land may temporarily subsist under their own logics, it is their continuous, balanced, and metabolic interaction that guarantees the territory's long-term viability. Infrastructure acts as a vector that traverses and nourishes these three spheres, activating their internal dynamics. Consequently, designing an infrastructure system that is sensitive to and connected with the ecological framework is the precondition for unlocking urban, productive, and recreational processes that are perfectly adapted to the socio-environmental demands of the site. In this context, Alfredo Brillembourg proposes networks of urban and infrastructural *acupuncture*[48] —high-precision, targeted interventions that do not excessively consume space— as an effective method of territorial consolidation. Like a subtle spiderweb, this approach links dispersed pre-existing elements to consolidate nodes of exchange, while establishing guidelines for future interventions. Applied to the Matese slope through the funicular and aerial cable, this infrastructural logic achieves two concurrent objectives: on the one hand, it revitalizes local economies at the community level; on the other, it protects the forest cover and karst topography by traversing the hillside rather than fragmenting it through massive land clearing. Once this network of connectivity and architectural vision is in place, the supporting structures can be adapted or reconfigured according to the socio-ecological transformations of the environment.

48. *About acupuncture.*

Although the concept of acupuncture has been fully developed by other authors, Brillembourg asserts that acupuncture, in addition to being precise, must always be connected. It is a structured network that communicates constantly. In the case of Caracas, this connection is generated by the funicular: it is a connection that is as strong as it is dynamic.

As a final consideration, it is imperative to point out a historical asymmetry in mountain projects: the dynamics of settlement, production, and contemplative tourism have undergone constant technical and theoretical transformations —from complex terraced systems for construction to the optimization of agricultural yields or the expansion of extreme sports— while road networks and conventional transportation hubs have been mechanically replicated without questioning their impact on the mountainside. An alternative infrastructure is not only appropriate, but urgent when the demand for such a project arises from the territory's own environmental and socio-spatial deficiencies. It is through the critical reconfiguration of these connection vectors that the landscape infrastructure ultimately bridges the topographical and historical divide between Piedimonte Matese and Castello del Matese, offering a new paradigm for inhabiting the mountains based on biophysical integration and sustainability.

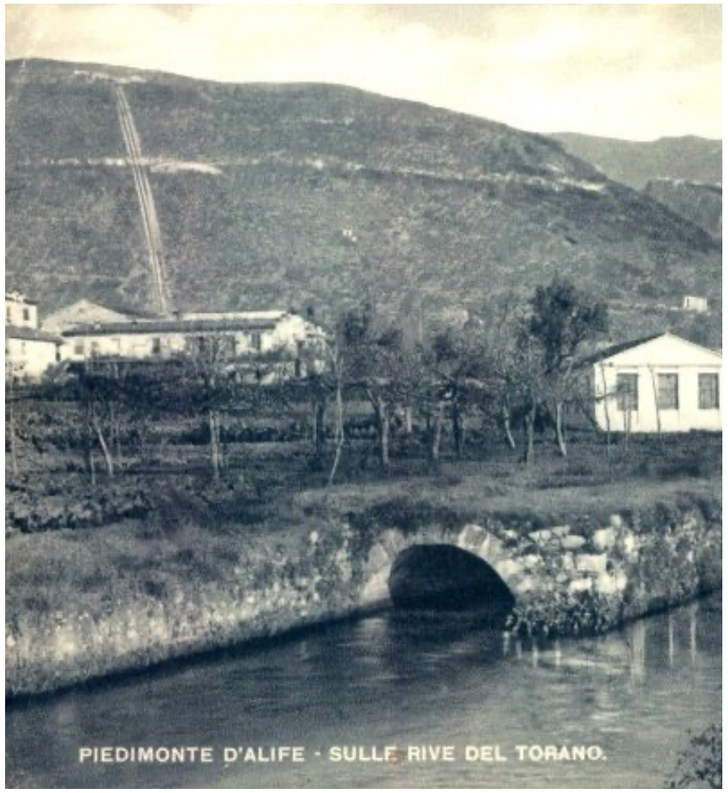


Figure N° 16. On the banks of the Torano, taken from Fotod'epoca Piedimonte Matese.

Why fragile?

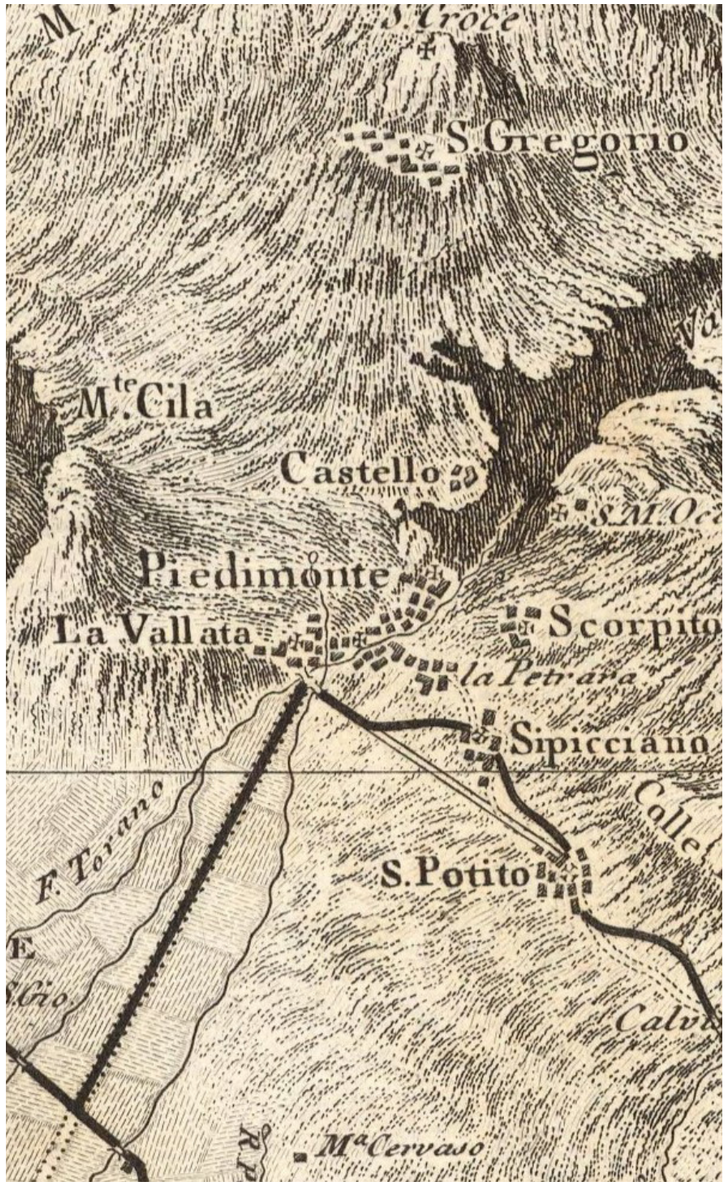


Figure N° 17. Atlante geografico del regno di Napoli, taken from Catalogo Generale dei Bieni Culturali. Giovanni Antonio Rizzi. 1808

The concept of landscape fragility has been widely discussed in terms of two interconnected dimensions: the natural and the social. However, we must examine both of these dimensions in greater depth to assess the territory's vulnerability. To understand the magnitude of the problem, the Oxford Dictionary defines fragility as *"the fact of being weak and uncertain; the fact of being easy to destroy or harm"*[49]. What is suggestive about this approach is that it highlights two structural attributes of the landscape: its implicit uncertainty —often stigmatized as a systemic flaw— and its susceptibility to harm. From the perspective of landscape theory, fragility is conceived rather as the result of a dialectical co-production between biophysical dynamics and human interactions; it is not a static or ontological condition, but rather the result of a disruption in the territory's own logics. This dichotomous process constantly feeds back on itself, as biophysical alterations give way to social fragility and vice versa.

To systematize this analysis, it is best to begin with biophysical fragilities, as they are the first to register the impact of human actions. Pierre Bélanger and Joan Nogué agree that the greatest vulnerability derives from the scale and recurrence of ecological transformations on the territorial substrate[50]. In mountain systems, altitudinal variation and ecological differences generate multiple transition zones which, by concentrating diverse microecosystems into small spaces, lack the capacity to assimilate drastic changes. Although the immediate consequences do not always pose a physical risk to populations, the ecosystem gradually loses the cohesive components that regulate its dynamics. As Nina-Marie Lister posits, adaptive cycles of growth, conservation, destruction, and reorganization operate within these adaptation zones[51]. These inevitable processes —indispensable for ecological renovation— become breaking points or blocks when interrupted by the rigidity of urban structures. This spatial sensitivity is immediately transmitted to the flora and fauna, generating what José Juan Terrasa-Soler, Mery Bingen, and Laura Lugo-Caro call *bioindicators*[52]: pathologies and physical deformities in species that reveal the degradation of the environment.

In a karst landscape such as that of the Matese, the most complex and fragile cycle is the hydrogeological system of underground aquifers. Any road layout or civil engineering project carried out without due care can disrupt flow lines or contaminate the entire watershed. Given this scenario, conventional models of sewer systems and heavy infrastructure prove obsolete. Let's return to McHarg's example, where decentralized, small-scale sanitation proves more efficient and respectful of the karst structure, unlike the use of centralized pipelines.

On the other hand, the hillside itself represents a condition of high physical vulnerability, since any alteration to the surface compromises the stability of the slope. Native vegetation compacts the soil through roots that hold the ground in place; however, this very superficial nature makes it easy to remove on a massive scale during land-clearing processes. In the desire to conquer the slope —while the city seeks to solidify its foundations with heavy infrastructure— the expansion of unplanned agro-pastoral activities erodes the vegetation cover, accelerating desertification during periods of drought. It is here that the commercial view of the territory —analyzed by Jason W. Moore as the reduction of nature to a mere object of cheap exploitation[53]— increases environmental fragility. Nogué complements this analysis by pointing out that, under the dominant socio-productive perception, if the land loses its extractive capacity, it is automatically stripped of its symbolic and economic value.

This devaluation triggers a series of perceptual ruptures that dismiss the slope due to its construction challenges or lack of accessibility.

49. *Oxford English Dictionary by Oxford University Press.*

50. *La cosntrucción social del paisaje by Joan Nogué, 2016.*

They state that interventions always have the potential to scale up once they are implemented. Any bridge, road, or terraced land can evolve, grow, and move between different scales. These cycles begin to involve social and behavioral aspects.

51. *About cycles, from Is Landscape...?*

These fundamental cycles mentioned in his essay were later developed in her book, Projective Ecologies.

52. *About bioindicators, from Revising green infrastructure.*

These fundamental cycles mentioned in his essay were later developed in her book, Projective Ecologies.

53. *Capitalism in the web of life by Jason Moore, 2015.*

Moore argues that this process is the result of a rather interesting concept he calls "pericapitalism." The entire concept of growth seeks to hide its side effects in the periphery, thereby creating marginalized areas.



Figure N° 18. Rendering of an out-of-control funicular and cable car above Piedimonte, Base photo taken from Clarus. Original work. 2026

Under this logic, steep slopes lose their social significance, becoming the preferred location for informal or vulnerable settlements; inhabiting a space likely to suffer geotechnical collapse, coupled with institutional neglect, is a direct manifestation of socio-spatial segregation. These distant geographies, relegated by bourgeois and Euclidean planning models, suffer from a form of invisibility that catalyzes socio-environmental degradation. Lacking symbolic value for public administration, community protection mechanisms fade away, giving way to what McHarg termed the *disintegration of the community*[54]. Without effective local governance, the territory is exposed to the construction of invasive infrastructure —highways, viaducts, and bridges— which, as Trachana points out, permanently fragment the urban fabric[55]. The city, structured according to a center-periphery logic, widens the gap between its ecological and social components. In its most extreme form, the loss of landscape identity is attempted to be compensated for with what Nogué defines as *landscapes for spectacle*[56]: tourist contrivances that alter the local ecology to offer a consumable scenery, where fragility ceases to be a management problem and becomes the definitive loss of the territory's essence.

Faced with this scenario of intertwined vulnerability, fragility in the mountains should not be interpreted as an impediment to the project, but rather as the fundamental premise that must guide any architectural and infrastructural intervention. Understanding that biophysical failures and social disarticulation are manifestations of the same metabolic crisis requires moving beyond rigid zoning models and predatory infrastructure solutions. Only through subtle connecting mechanisms —such as cable and funicular systems— and a microscopic analysis of the topographic profile is it possible to bridge the gap between the valley and the summit. Protection of the mountainside will not be achieved through closure or spectacle, but rather through the construction of a symbiotic infrastructure where the stability of the karst ecosystem and the dignity of community life flourish simultaneously.

54. *About the disintegration of the community.*

McHarg addresses this phenomenon primarily from two perspectives: the physical and social destruction caused by urban renewal policies, and the breakdown of social behavior under conditions of physical overcrowding devoid of nature. On one hand, the imposed policies destroy the already built dynamics as the interventions lack any social or communitarian consideration. On the other hand, these policies ignore the need for nature and its benefits.

55. About invasive infrastructure.

The concept of arterial roads —designed for vehicular traffic but not for social mobility— and other urban infrastructures, is one of the greatest disruptors of the urban fabric.

56. About landscapes of spectacle.

They are the most dangerous sign of an identity crisis for a region, as they imply the rejection, permanent alteration, and replication of imported models that are not in keeping with the logic of the local landscape.



Figure N° 19. Rendering of an out-of-control funicular and cable car above Castello, Base photo taken from Italia.it. Original work. 2026

Applying at Matese





Figure N° 20-21. Torano River and olive monocultures, respectively, taken from Architettura e Paesaggio nel Matese. 1999

It is essential to take a unified approach to understanding the qualities of the mountains in their direct relationship with the city, as well as the inherent vulnerabilities of this connection, in order to avoid subjective distortions and mitigate the risk of altering the theoretical premises proposed by the authors. This justifies the development of the preliminary theoretical framework, the only purpose of which is to guide an analytical examination of the physical, environmental, and socio-spatial characteristics of the case study addressed in this research: the Matese region, with the analysis focusing on the combined system formed by Piedimonte Matese and Castello del Matese. In this regard, the concepts developed from Lewis Mumford's approaches, combined with the categories of fragility identified by various specialists, find a concrete physical, morphological, and functional manifestation within the complex geographical composition of this territory.

Beginning with the notion of *the city*, this centuries-old region was originally founded as a defensive refuge against Saracen invasions. This historical condition forced the inhabitants to adopt a pattern of occupation that shifted constantly between the two settlements, changing their daily routines and places of safety depending on the severity of the danger. As Giuseppe Buonomo rightly points out, this behavior ultimately shaped the urban fabric of both towns[57]. On the one hand, Piedimonte took shape through a network of trails and paths that emerged from the natural flow of watercourses, which not only channeled water from the mountains but also physically guided the population toward higher ground in search of protection, whether toward Castello or the slopes of Mount Muto. These escape routes shaped an urban fabric in the valley characterized by the constant search for housing close to the slopes, displacing productive infrastructure to the edges, which became almost territorial barriers. On the other hand, Castello developed with a clear notion of a fortress, taking advantage of the upper plain for its layout and treating the steep slopes and pronounced cliffs as an impenetrable natural urban boundary.

Up until this historical milestone, the architecture of the Matese, in line with Alberto Ferlenga's interpretations, responded symbiotically to the surrounding landscape[58]. However, the passage of time and the gradual transition of Castello —which went from being a military bastion to an ordinary residential municipality— allowed for a progressive and uncontrolled occupation of the hillside. Faced with this problem, Nicola Pasquale di Fusco harshly criticizes the absence of urban regulations during the 20th century[59]; a lack that led to the presence of unplanned buildings

57. *Architettura e paesaggio nel Matese by Margherita Vanore and Maria Cristina Volpe, 1999.*

This book is the result of a design seminar that sought to provide landscape solutions for the Matese region. It consists of essays by the professors in charge at the respective universities and architectural projects carried out by students. It demonstrates that this crisis has been ongoing for years and that a solution has yet to be found.

58. About the city configuration, from *Architettura e paesaggio nel Matese.*

59. *About regulations, from Architettura e paesaggio nel Matese.*

The first instances of land use regulation appeared in the 1920s, so any prior interventions were carried out according to each property owner's standards.

and, subsequently, to the reactionary imposition of restrictive measures lacking rigorous technical studies, which categorically prohibited any type of urban expansion. Thus, following the construction of new structures —and with the well-intentioned aim of protecting the land from excessive intervention— future housing development was completely frozen. Pasquale argues that this regulatory rigidity acted as one of the primary causes of depopulation: as the population grew, the inability to build within the area forced people to migrate to neighboring municipalities. It is precisely in the concept of the city that the first vulnerabilities of the Matese emerge: the hillside, after having suffered the pressure of uncoordinated growth, abruptly fell into total abandonment[60]. At the same time, the shift in housing dynamics broke social and community ties between the two settlements, simultaneously affecting the population's relationship with its natural environment, in which the mountain came to be perceived as an untouchable and alien territory.

The garden is perhaps the most significant structuring element in the Matese, since many of its formal principles and settlement patterns were determined from the very beginning by nature itself —and especially by its water network. María Cristina Volpe notes that Piedimonte was historically known as the city of water —*paese d'acqua*[61]— since its main roads and residential areas on the mountainside were shaped by the course of the rivers and the presence of aquifers. However, as the 1970s began, and under the relentless discourse of urban modernization, the watercourses that ran through the built-up area were gradually buried and covered by layers of asphalt. Driven by the desire for progress[62], the Matese was disconnected from its most significant ecological ally. Added to this phenomenon was the obsolescence and neglect of the old trails on the mountainside; those escape routes that once allowed the inhabitants to experience nature deeply and on a daily basis got forgotten as the population shifted its socioeconomic dynamics toward the outskirts and metropolitan centers of Caserta or Naples. As a result, the concept of *the garden* in these communities was reduced to momentaneous, contemplative visits filled with tourists: the landscape lost its regulatory role inside the urban fabric, and the residents ultimately took away its original value, reducing it to a simple background for tourist postcards.

In an effort to revive the economy and preserve the landscape of Piedimonte and Castello during the 1960s and 1970s, plans for agricultural subdivision and olive monocultures were promoted and implemented. From the perspective of *the plowed field*, this proposal was intended to serve as a connecting element between the protected natural space —*the garden*— and the built urban environment. However, the disproportionate scale of the intervention, coupled with a notable lack of technical and environmental criteria, ultimately caused damage to the urban fabric of Piedimonte and weakened the physical stability of the soil in Castello. On the one hand, Volpe states that the subdivisions planned around Piedimonte were excessive in both number and size; the lots were so large that few private actors were willing to undertake the investment. Once the subdivision was fully implemented, the city found itself encircled by a ring of large vacant lots that prevent urban expansion and, having become arid, offer almost no capacity for vegetation regeneration or the implementation of new projects. On the other hand, in the Castello area, Tito Angelini describes how the introduction of olive monoculture required aggressive modifications to the topography to create semi-flat platforms suitable for capturing runoff for irrigation[63]. This agricultural practice had a significant negative impact, as the eradication of native species to favor a single plant variety deprived the slope of its complex networks, destabilizing the hillside and drastically altering the mountain's natural water flow patterns. This demonstrates that even activities aimed at subsistence and food sovereignty, when carried out without regard for ecosystem dynamics, result in irreversible damage to the landscape's structure.

Finally, the concept of *the bridge* covers those infrastructure projects designed to bridge the physical and topographical gaps in the landscape. Among the most unique examples in the Matese is one of its most iconic features, which has managed to blend visually into the surroundings to such an extent that its bulk and materiality —disguised in shades of green— seem to be part of the rock mass itself: the pipeline of the hydroelectric plant, designed and built between 1900 and 1920. Margherita Vanore defines this structure as a scar, accepted by the community precisely because of its irreversibility[64]. The execution of this megaproject represented a substantial disruption to the rhythms of life in the Matese, even bringing the local road network to a full stop until its construction was completed. Likewise, the project caused profound hydro-physical alterations to the mountain, as a result from its own material weight and the redistribution of water flows. In this regard, as Pierre Bélanger argues, even when water resources are returned to their original source or ecosystem, any major change in their volumes, directions, or continuity causes systemic changes capable of disrupting ecological cycles[65]. The Matese region arises as a unique case with limited road network, which at first glance suggests a limited infrastructural impact; however, it is essential to understand that

60. About the abandonment, from *Architettura e paesaggio nel Matese.*

Pasquale mentions that, as a countermeasure for the fragile conditions in which landscape is left, constructions —if made properly— can help regulate and compact the soil.

61. About paese d'acqua, from *Architettura e paesaggio nel Matese.*

One example of this loss of aquatic identity is Via Federico Lupoli: one of the main streets in Piedimonte Matese, which connects places such as city hall and the main square.

62. About progress, from *Architettura e paesaggio nel Matese.*

It is claimed that these interventions ruined the city's historical morphology, since it was initially conceived based on landscape principles.

63. *About monoculture, from Architettura e paesaggio nel Matese.*

In addition to the obvious water-related damage caused by water extraction for olive monocultures, Angelini mentions the loss of a unique, humid microclimate that allowed species from other thermal zones—such as beech—to grow there. However, on the slopes surrounding the convent on Mount Muto, these microclimates still exist.

64. *About scars, from Architettura e paesaggio nel Matese.*

The pipeline route has become a popular hiking trail that climbs up to one of the hydroelectric plant's reservoirs. In this way, the scar is transformed into a livable space—not by denying the past, but by accepting it.

65. *About water continuity, from Architettura e paesaggio nel Matese.*

The debate over water use is not about the water's final destination—which will always be in the clouds through evaporation—but rather about the path it takes, which it either avoids or creates as it flows.

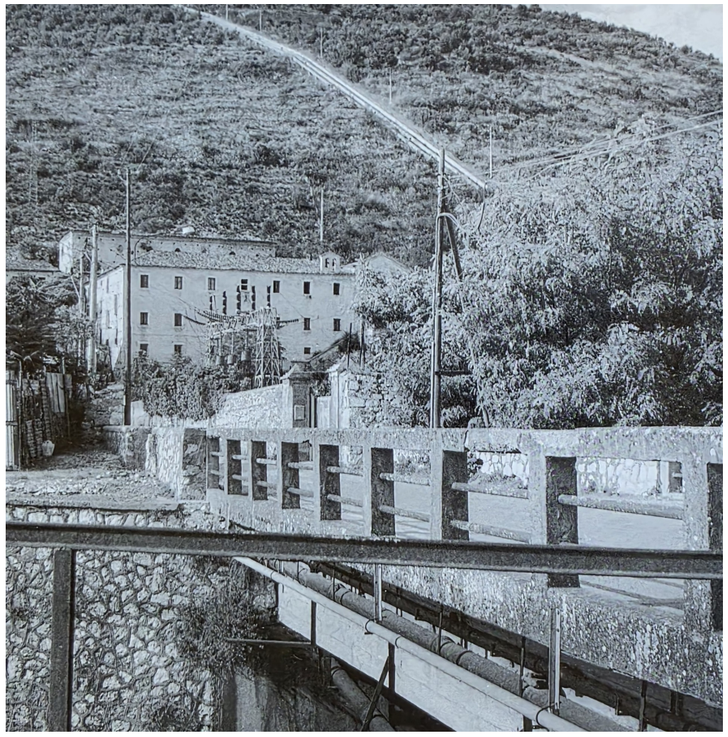




Figure N° 22-23. Bridge in Piedimonte and landscape painting from Gian Giacomo Egg, taken from Architettura e paesaggio nel Matese. 1999 and 1884

infrastructure does not operate in isolation. Decisions regarding land subdivision, geographic isolation, the expansion of monocultures, and the absence of land-use planning made it impossible to develop balanced and efficient connectivity systems between Piedimonte and Castello.

In conclusion, the Matese region has emerged as an ideal case study for integrating the multiple dimensions of fragility expressed in the landscape. The dynamics observed in this area transcend the local scale and clearly illustrate the problems facing internal areas. Although public debate tends to focus on the lack of connectivity with major urban centers, the main reason for their decline lies in the breakdown of their internal dynamics. It is delusional to assume that the mere introduction of roads, rail lines, or funiculars will solve the problem if the root causes of the conflict are not addressed. Poor management of natural resources and the loss of symbolic values of belonging generate territorial diseases that are passed down from generation to generation. Returning to Pasquale's analysis: if a territory is unable to guarantee access to housing for its young people, it is unrealistic to expect them to settle there. Or, considering the scenario outlined by Volpe: if the attempt to revitalize Piedimonte is blocked by the presence of the very same vacant lots resulting from past mistakes, the inner area will become even more disconnected from its surroundings. Only when the need to plan in harmony with the mountains —and not against them— is understood will it be possible to unleash genuine regeneration. In the Matese, the landscape is not merely decorative: it forms the foundation of its identity, the guarantee of its physical stability, and the very life of its communities.



Case Studies

Main Components

Indicators

System of fluxes

Topographic determinant

Lessons of coexistence

Main Components

Once the concept of territory has been established, it is essential to identify architectural and landscape examples that have succeeded in initiating structural and behavioral transformations similar to those required by the Matese. Within this research framework, focusing exclusively on material or construction aspects —while relevant— is not decisive for the research. The true filter and focus must center on the need for a paradigm shift: the mountain —historically degraded or relegated to neglect— and transportation infrastructure —traditionally rushed and indifferent to topography— require a profound conceptual review.

In response to the symptoms detected in the Matese region and the severe risks posed by a poorly coordinated infrastructure intervention, four compositional axes are formulated to guide the selection and analysis of the case studies. Each of these axes synthesizes the preceding conceptual framework, prioritizing the aspects with the greatest potential impact on the site. While it is not possible to fully reverse the historical fractures in the subsoil or the underground water networks, it is possible to slow down their deterioration and incorporate infrastructure systems that support natural cycles. In this way, evaluating the actual application of these principles in case studies consolidates the transition from theoretical formulation to the foundation of the project in the Matese region.

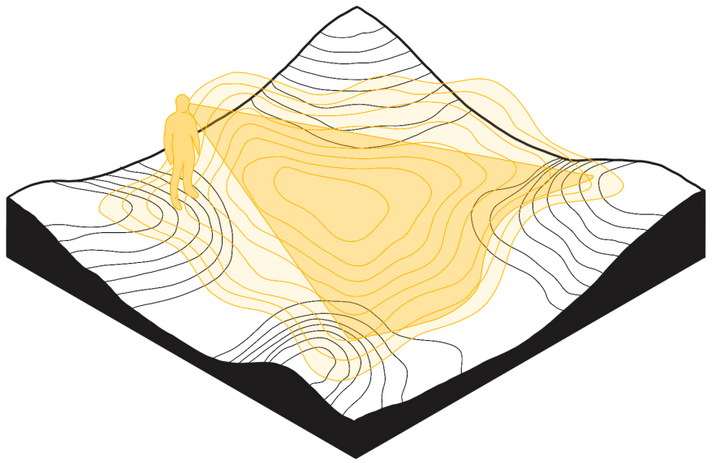


Figure N° 1. The man in harmony with the landscape as he looks at it Original work. 2026

1. The Mountain as a Living Ecosystem, Physical Framework, and Structuring Element. *From the Large Territorial Scale to the Recognition of Topography*

To define the selection criteria for the design references necessary for their translation into the Matese, it is essential to start from the macro scale, since the composition and functioning of the mountain remain territorial in character; reaffirming that the terrain does not act as an inert mass or as a mere backdrop. Following Gareth Doherty's approach, the topography exercises a constant physical *embrace*[1] that envelops, contains, and conditions the urban structure of the cities settled on its slopes. This geographical presence is non-negotiable; it is a living entity that imposes, regulates, and facilitates the rules of occupation. Consequently, as Handel Guayasamin argues, intervention in the landscape requires operating in strict synergy[2] with its natural cycles, recognizing the territory's ecological metabolism rather than imposing anthropogenic logics that work against it, whether in any of Mumford's elements.

This state of embrace —already connoted as something positive, protective, and geographically immersive— requires a critical approach to the way the city is organized, both from the slope toward the city and on the hillside itself. Regarding the extreme nature of the terrain, Alejandro Echeverri argues that topography precedes organization, thereby mediating all forms of infrastructural or geometric intervention based on an interpretation of the existing topography[3]. Through this acceptance of topography as the project's guiding principle, the dimension mentioned by Belanger and Trachana regarding verticality and *altitudinal zoning*[4] emerges: the mountain is not merely a level to be overcome but rather a matrix of altitudinal belts that function as a natural boundary always to be considered and respected, and which at the same time enriches the territory. Therefore, infrastructure cannot be understood as an invasive prosthesis that flattens the hillside but rather as a careful reading of the ground levels.

The culmination of this axis at the physical and material level involves infrastructure with minimal intervention that is environmentally and socially permeable, since this infrastructure does not make significant changes to the terrain. Stations and connecting paths must be constructed using adaptable geometric forms that follow the contour lines, with materials suited to the site's geography and in harmony with the area's geology, allowing them to age naturally without altering the mountain's topography and making people feel like they are part of it. In addition, the edges of the infrastructure must become a clear and unquestionable natural boundary that allows the infrastructure to function as a tectonic filter to contain the city's expansion without violating the ecological matrix on which the infrastructure is based —a zone of exchange and adaptation that seeks to protect both worlds.

1. *About embracing, from Is Landscape...?.*

In geographical cosmologies and ancient texts, high mountains and steep mountain ranges are considered essential protective elements that surround, enclose, and embrace a settlement to shield it. Therein lies the meaning of the lotus city.

2. Urbanismo ecológico en América Latina by Mohsen Mostafavi et al., *2019.*

The mountain slopes serve as the valley's rainwater catchment areas; they are one of the region's most important and iconic features. The design must incorporate sustainable drainage systems and preserve the mountain streams as the natural infiltration and drainage system for the urban aquifer.

3. *About the topography, from Urbanismo ecológico en América Latina.*

Echeverri argues that the topography, the slopes, and the network of streams should serve as a mandatory guide for future urban and landscape design, given that nature has already drawn the spatial matrix of the territory through its waterways.

4. *About altitudinal zoning.*

This approach allows architects and designers to navigate multiple vertical scales to interact with infrastructures that, although often invisible, define the foundation of contemporary life. Rather than limiting the city to its horizontal footprint, designing in cross-section reveals and manages urban systems that extend vertically from the ocean floor to the outer limits of the atmosphere, encompassing phenomena ranging from sub-urbanization to super-urbanization.

2. Dynamic Landscape, Risk Management, and Uncertainty: *How to Interpret the Fragility of Mountainous Terrain*

Analyzing slope dynamics requires us to move beyond our static approach to the landscape and view the mountain as an entity characterized by a degree of volatility and constant change. In this context, and as Anna Tsing suggests, it becomes essential to think about designing for fragility, since the physical dynamics of the slope operate under conditions of vulnerability. This idea is reinforced by the concept of *designing for uncertainty*[5] advocated by Johann-Christian Hannemann, Christian Werthmann, and Thomas Hauck, who assert that nothing can be taken for granted within the mountainous environment. Climate variations, mass movements, and changes in ecological cycles make any kind of rigid projection impossible; on the contrary, they force us to consider uncertainty and volatility as design parameters.

In response to these dynamic conditions, the project's approach cannot be based on control through gray technology or traditional defensive engineering strategies. Rather, inspired by the ideas of Catalina Picón, the landscape must be conceived and designed as a living system for disaster prevention[6]. Vegetation cover, biophysical networks, and ecological systems are no longer secondary elements added to the architectural design; rather, they represent the true infrastructure that mitigates risks. Under this strategy, the management of native vegetation and the rehabilitation of watersheds can be considered living mechanisms that dissipate the energy of water flows, reduce erosion, and stabilize slopes within the unpredictability of the territory.

As for the second pillar, implementing this aspect involves the use of bioengineering methods and low-impact drainage systems, with a focus on the biological sensitivity and complexity of mountain processes rather than the excessive installation of technologies. The point is not to overload the slope with technological installations but to develop architectural strategies that mimic the natural process of soil stabilization. To achieve this objective, strategic planting of local trees and grasses with dense root systems should be employed to compact the soil and prevent erosion. The living layer is complemented by appropriate foundations installed on-site without disrupting underground water flows, along with channels and vegetative buffers that function as temporary retention areas.

5. *About designing for uncertainty, from Revising green infrastructure.*

Adaptive design and development applied in highly unstable, precarious, or disaster-prone environments, where traditional top-down planning methods prove insufficient or too slow to respond to the rapidly changing reality on the ground.

6. *About disaster prevention, from Urbanismo ecológico en América Latina.*

In addition, Picón argues that risk and disaster prevention is not just a matter of physical design, but of political management. He warns that one of the biggest obstacles to resilience is the lack of multisectoral collaboration among the various branches of government.

3. Vertical Connectivity Infrastructure and the Human Landscape: *How the Intervention Connects City, Nature, and Society*

In the interaction between the urban fabric and mountainous terrain, it is necessary to reassess the tectonic and social significance of transportation infrastructure on slopes. According to Stefan Kurath, the articulation between nature and urbanism involves the creation of a vertical connection system[7] capable of addressing the difference in elevation and bringing together the dynamics of both levels. However, this type of infrastructure design should not fall into the traps of technical spectacle; João Nunes warns of the importance of prioritizing livable space and the user's scale over *spectacular infrastructure*[8]. The project should not be presented as an engineering monolith but rather as a sophisticated machine designed around the pedestrian's experience, the pleasure of the journey, and integration with the landscape.

From this people-centered perspective, mobility on slopes becomes an inherently ethical and political phenomenon. According to Catharine Ward Thompson, spatial connectivity should focus on achieving *social reintegration through livability*[9], democratizing access to the mountains for communities historically segregated by topography. This political and social process of the territory is enhanced by what Moore conceives as the integration necessary to move away from *green arithmetic*[10], which causes constant human alienation from nature. This approach ensures a balance between the environment and infrastructure on the one hand, and socio-community benefits on the other. Mobility on mountain slopes involves much more than passenger transport; it is about returning the mountains to the center of public life as a livable and safe environment.

From the perspective of physical implementation, the third axis lies in the architecture of its stations and transfer points, which are designed as human-scale hybrid structures rather than merely transit points. These buildings are integrated into the slope's profile through accessible ramps, gradients, and formal variations, as well as terraces for resting and observing that blur the line between urban public space and the natural landscape. In terms of fine details, the materials emphasize tactile interaction, natural elements —such as light and water— and visual openness. Through the use of local materials and lightweight, adaptable systems, each station becomes an educational threshold where the infrastructure serves as a catalyst for community gatherings.

7. *About vertical articulation, from Revising green infrastructure.*

Rather than allowing urban growth to act as a fragmenting force that isolates the surrounding mountains, Kurath's approach demonstrates that infrastructure can be designed in such a way that it functions as an ecological connector, contributing both to biodiversity conservation and to the quality of life of residentsization.

8. *In fra: forme insediative, ambiente e infrastrutture by Aimaro Isola et al., 2004.*

This establishes that the pursuit of spectacle seeks only to satisfy the desires of tourists and the transient population, while ignoring the area's real needs. Design centered on and created for the user ensures a system of value and ownership that is more deeply rooted.

9. *About social integration, from Is Landscape...?.*

Her research focuses specifically on inclusive access to outdoor environments and landscape design for vulnerable or disadvantaged communities to ensure the notion of escape. She argues that access to the natural environment should not be a privilege, but rather a priority of environmental justice. She also addresses how the poorest and most segregated communities systematically suffer from reduced access to and poorer quality of public spaces.

10. *About green arithmetic.*

Human beings' individualistic nature means that their relationship with nature is always one of separation, as if none of their respective logics were related; if nature has problems, it is due to its own causes. It is an approach that does not include human beings in any kind of regulation.

4. The Revelation of the Territory and Landscape Awareness. *The perceptual experience that gives meaning to the project*

This conclusion to the conceptual framework emphasizes the intangible and educational aspects of the intervention, considering that infrastructure changes not only the physical landscape but also people's perspectives. In the words of Joan Nogué, both uphill walks and vertical transportation systems must be actively conceived under the concept of *point of view*[11] as devices that enable the interpretation and discovery of the territory. From an elevated point of view, neither the aerial perspective nor the observation points serve merely to make us spectators of the landscape; rather, they are conceived as an ethical instrument of critical thinking. It is precisely from this distance that residents can perceive the logic of the territory — its actual size, but more importantly, its socio-ecological vulnerabilities— which would otherwise remain invisible from ground level.

In this context, the infrastructure project becomes a process of education and collective awareness. Climbing the hill turns into an education process for the spaces, since the landscape stops being a passive space and starts having its own life. When people start climbing and realize the richness of transition, which takes place from the city to the transitional zones, and then to the high mountains, the infrastructure triggers a sense of belonging. The act of perception becomes the catalyst for people to realize the importance of preserving their natural heritage.

The axis fulfills its architectural purpose when the focus is placed on the architectural design of the route itself, through the introduction of lightweight structures with minimal intervention, suspended systems, and carefully designed observation points oriented toward the landscape's landmarks. Just as contemplating the landscape is the first action within the landscape itself, understanding the city in which we live begins with observing how it interacts with its surrounding geography. Unlike conventional rest stops, these resting points incorporate tools for environmental interpretation, such as sporadic educational information, framed views that draw the viewer's attention to the fragility of the terrain, and comfortable layouts that invite visitors to rest. Architecture must therefore employ systems of translucent and foldable enclosures, regulated shade, and soft features, avoiding any form of formal dominance. Consequently, the building becomes a calm lens whose primary task is to frame the landscape.

11. *About the point of view.*

It is an ontological and visual reorientation that positions humans as integral and jointly responsible participants in the Earth's living systems, rather than as external observers dedicated solely to their exploitation or control.

None of these axes are intended to serve as ideal formulas or set recipes, but simply to provide a methodological compass for determining the direction Matese should take as an internal field. Although there is still room for maneuver within the framework of these theoretical principles, they offer sufficient flexibility to be abstracted and embodied at different scales and through various interventions, which will allow for the building of bridges between the Latin American and European contexts. What matters is not attempting to recreate the model exactly but rather finding those experiences that can intersect in an interdisciplinary manner across as many of these axes as possible.

In this sense, the selection of case studies will not depend only on the identification of references or equivalent engineering solutions, but rather on the evaluation of cases in which these principles have been successfully applied to real-world action. Through the analysis of projects carried out in complex geographical contexts, it will be possible to develop tools capable of addressing the fragility of the Matese region by linking the scale of the valley to altitude, without repeating the same mistakes of the past regarding land use. In this way, through the comparative study of these case studies, it will be possible to move from theoretical abstraction to infrastructure design.

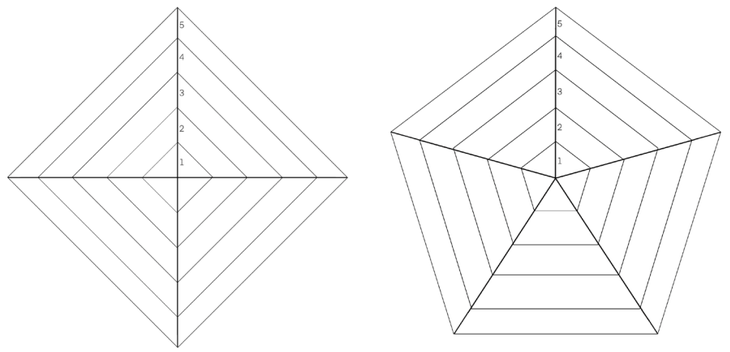


Figure N° 2. Evaluation diagrams for the axis and the components.

Indicators

As shown in the description of the four themes, the selection of case studies requires verification based on their spatial and tectonic manifestation. It is not enough to simply describe the idea of integration into the mountain and the idea of vertical continuity; one must examine the process by which these ideas are structured through design, formal decisions, material choices, and architectural decisions. No intellectually honest design allows for literal replicas, as David Chipperfield asserts there is no such thing as the same building twice[12]. The impossibility of replication stems from the uniqueness of each project's response to its geographical context. Although many cities are located in valleys with similar vulnerabilities, the differences in how they are addressed enrich the analysis. To objectively evaluate the extent to which the selected case studies represent the four proposed axes, the analysis will be based on five cross-cutting criteria that are relevant to both the theoretical and physical aspects of the subject. This ensures a critical perspective on the case studies before taking their correctness for granted:

12. Entrevista con David Chipperfield by *Ismael Teira, 2023.*

1. Materiality

This indicator evaluates the selection of tectonic systems and culminates in reference projects, assessing whether the harsh climate and the geological nature of the slope are being considered. In other words, the indicator is not about the material itself but rather about the coherence of the choice that has been made. It is not possible to replicate a construction system used for metamorphic rocks or granite in northern Italy when the landscape of the south is characterized by limestone, tuff, or calcarenite. The dialogue initiated by architecture during the territorial analysis must continue through to the final formal choice.

Materiality goes beyond tectonics: it becomes a determining factor in the community's sense of connection or alienation, as well as a condition for enhancing or degrading the landscape and economic viability during the implementation process. Although the material conditions of the study may be somewhat similar to those of Matese, it is essential to understand not the final result but the logic behind the selection process. Beyond the similarities in geology, it is vital to understand the technical and aesthetic approach to the selection, which ensures viability and continuity with the territory.

2. Social Impact

This indicator assesses the extent to which the project succeeds in promoting settlement, uniting communities divided by topographical features, and creating equitable public spaces. Although the social impact of a project tends to be viewed as abstract or beyond the control of the project designer, there are two main areas where its effectiveness can be evaluated: the gestural dimension and the test of time.

The gestural dimension includes the formal decisions made to promote the process of inclusion: the use of eaves to provide shelter from the weather, the design of plazas to encourage interaction, and the removal of physical barriers to enhance visibility and a sense of safety. Although these gestures are already recognized during the project's design process, they do not guarantee long-term success, as they could be distorted by community life. One can refer to the classic example of Le Corbusier's open first floor: although it was intended to be an extension of public space, in many cases it ended up being either underutilized, desolate, or even unsafe.
In this regard, it is one of the most important aspects of evaluation of the value of the case studies in relation to their effectiveness in the long run. In other words, evaluating how their spatial interventions have stood the test of time will help us to figure out the mechanisms that prove effective in integrating communities. This way, we can ensure that our design interventions for Matese do not remain purely formal in nature.

3. Accessibility

Accessibility is architecture's most demanding universal principle: if a project succeeds in making people feel welcome and safe without the need for separate pathways, then a fully inclusive environment has been created. However, ensuring this condition in response to functional diversity — whether physical or cognitive— is difficult, as it requires a skillful balance between building codes, spatial needs, sensory sequences, and users' movement patterns.

In the case of slopes, the challenge is to overcome this obstacle without imposing a heavy load on the landscape and without mechanizing the path, but rather by skillfully combining technical solutions with the geometry of the structure. By studying the examples, we will evaluate how these infrastructures address the challenge of verticality through intelligent solutions that maximize the use of space, ensuring equal access while considering the slope of the terrain and the concepts of livability and spatial justice outlined in the theoretical framework.

4. Topographic Integration

The concept of topographic integration seeks to evaluate a project's ability to engage with the landscape, moving beyond the outdated tendency to level the ground and alter the biophysical characteristics of the terrain simply to simplify the project implementation process. Designing a project in the mountains requires a high degree of creativity, since the more the characteristics of the terrain are respected and adapted to the building, the more complex the spatial composition will be.

Designing in accordance with the slope means understanding the contours, identifying natural platforms, and designing paths, rather than carrying out destructive groundwork that will leave permanent marks on the hillside. Through the analysis of case studies, this indicator helps us understand how design choices translate the physical constraints of the site into design principles, recognizing when it is necessary to rest against, float above, or fit into the rock.

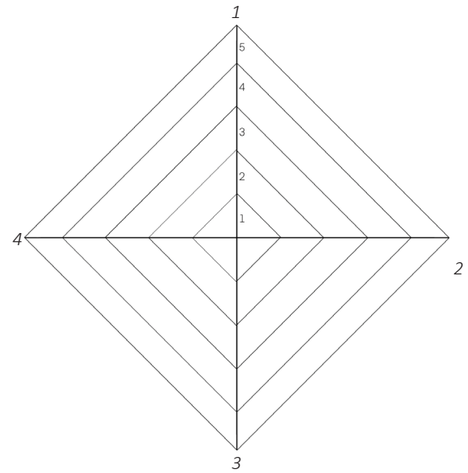
5. Flexibility

Flexibility is a measure of the infrastructure's ability to adapt to changes in the landscape and the community's evolving needs, avoiding the formal and programmatic rigidity that makes a project obsolete. Just as in a mountainous landscape where ecological changes occur, the population living there continues to evolve; therefore, social needs continue to change every year, which means that the architectural project should be adaptable, allowing for change and reversibility.

Within the framework of the slope, the indicator measures the project's capacity to adapt to changing needs and growth by studying the evolution of the program and the construction of the project: it is a measure of the project's capacity to incorporate new functions within the community, to grow organically, or even to be dismantled without compromising the natural foundation. How does the structure adapt if the dynamics of the site require the project to be reorganized?

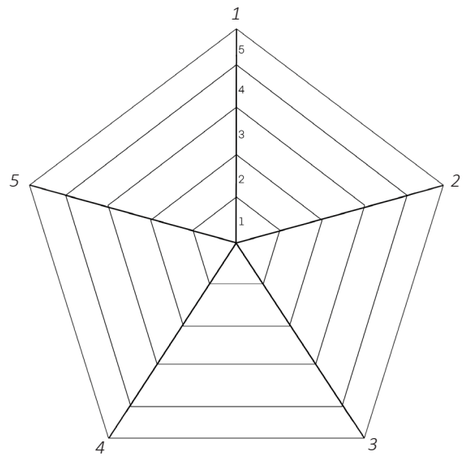
Through an evaluation of the case studies, flexibility becomes possible by identifying the structural patterns and systems that were able to escape the rigidity of heavy infrastructure; in this way, it offers a vision of how to design a living system in Matese.

This evaluation matrix, together with the defining axes, will help identify successful operations so they can be applied in Matese, but it will also serve as a filter to identify strategies that should not be replicated in the hillside intervention. Through the analysis of indicators, the projects will be evaluated to identify the fundamental operations, breaking down the steps involved in the actual solutions. This means the research will not only provide a list of best practices that can be adapted to the Matese context but will also offer the critical insight needed to anticipate potential failure, excessive mechanization of the landscape, and spatial exclusion.



These indicators will allow us to assess, at our discretion, each project's ability to address the established objectives and points. The rating scale will range from 0 to 5. This allows us to gain a deeper understanding of each project's strengths and weaknesses, so that they can ultimately complement one another.

1. Mountain as structure
2. Dynamic Landscape
3. Vertical Conextion
4. Revelation of the Territory



1. Materiality
2. Social Impact
3. Accesibility
4. Topographic Integration
5. Flexibility

Figure N° 3. Evaluation diagrams for the axis and the components and their descriptions

Topographic determinant

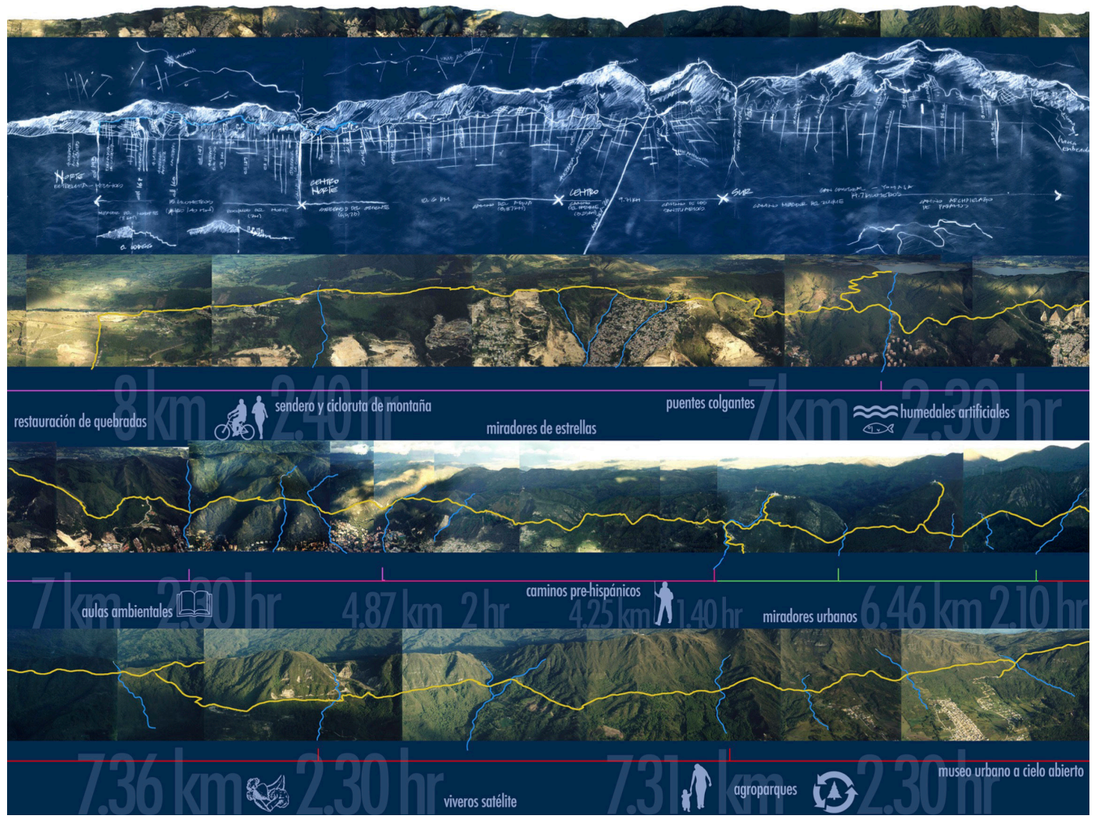
The structural vulnerability of the Matese region derives largely from anthropogenic dynamics themselves; in recent decades, the few interventions in the territory have opted to silence and deny the geography that connects the municipalities of Piedimonte Matese and Castello del Matese. Under this logic of land occupation, watercourses are channeled into concrete, forests are subject to deforestation, native biodiversity is displaced by monocultures, and the slope is perceived as a topographic obstacle to be flattened. This behavior invalidates the principle that the mountain constitutes the generative matrix from which all environmental determinants emanate. Consequently, the first proposed case study aims to understand topography as the primary structuring force of the urban order. To conceptualize the mountain as *geographic hardware*[13] capable of defining boundaries, tectonics, and the relationships between architecture and landscape, the reference point is the project for structuring the edge of Bogotá's Eastern Hills, developed by landscape architect Diana Wiesner.

The *Camino de los Cerros* is seen as an integrated system that will extend for a total of 53 kilometers along the interface between the natural environment and the urban limit. Realizing that the urban planning norms did not serve their purpose in curbing the informal expansion into the hills, Wiesner identified the need to develop a physical and operational device in order to define the urban expansion. Such a grid-like structure forms an intermediary zone that is designed in order to counteract the pressure of any kind of expansion and protect the permeability of the soil and subterranean water flow. Nevertheless, to avoid segregation of the mountain from the city and thus disintegration of the ecological and social interactions, the system enables inhabitation of such an interface by means of integration of three main systems namely the social, biophysical, and infrastructural system.

From a social perspective, Wiesner's analysis acknowledges that, while unplanned settlement degrades the ecosystem, it is necessary to understand the community dynamics that give origin to it. Peripheral settlements, disconnected from the city's formal structure, run the risk of becoming marginalized areas; therefore, by transforming the trail into a node of participation, environmental education, and urban agriculture, a constant flow of citizens is encouraged, extending urban life toward the mountain edge. The landscape is no longer viewed as a forgotten fringe but is positioned as a catalyst for neighborhood

13. *About the point of view.*

This idea continues the allegory of the landscape and its interventions as computer systems. The hardware is the indisputable system that establishes the guidelines for installing software.



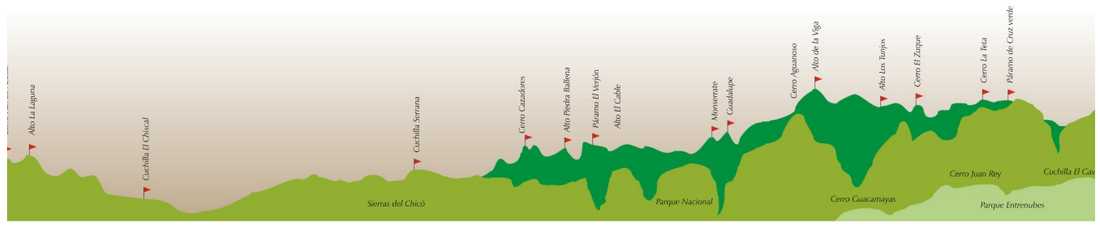


Figure N° 4-5. Proposed elevation focused on the mountain, for the landscaping project for the eastern hills of Bogotá, taken from El Camino de los Cerros. Diana Wiesner. 2007

roots. On the biophysical level, the protection of ecological systems is balanced by alternating between ecological reserve zones and areas designated for public use. Based on a careful reading of the site's vulnerabilities, the programmatic approach takes advantage of human presence to restore the landscape: community gardens are established on slopes susceptible to erosion in order to compact the soil, and pedestrian access points are located near watercourses to highlight and protect water resources, thereby educating the community on the active stewardship of their environment.

With regard to infrastructure, Wiesner proposes interventions that work with nature for nature, prioritizing techniques and resources native to the site. Water management systems facilitate natural drainage toward the valley, integrating filter terraces, native vegetation cover, and ephemeral architectural structures built on lightweight wooden frames and isolated foundations made of local stone. The buffer zone thus establishes itself as a socio-ecological engine that regulates urban dynamics and enhances the perceptual relationship with the environment through the *viewpoint effect*, which reveals both the territorial magnitude of the *Cerros Orientales* and their physical vulnerabilities.

In relation to the first axis, which focuses on the mountain as a living ecosystem, Wiesner's proposal directly embraces the notion of a geographical *embrace*, designing from the logic of the terrain in order to restore the natural cycles that shape the urban structure. A two-way dialogue of constraints and reciprocity is established between the built mass and the landscape: the intervention rejects the domestication of the hillside to embrace its tectonic and biophysical roles, generating a fluid synergy with the water and plant networks of the high-Andean forest and respecting the transverse flows of the watersheds. Likewise, the project's layout demonstrates a high degree of topographic sensitivity, adapting its geometries to the contour lines and variations in the terrain.

The project starts with the recognition of the instability of the soil, thus dealing with the second axis. Decisions related to material, space, and programs are built upon the precariousness of the natural substrate, thus making clear that risk reduction needs a multidisciplinary approach. Through the recognition of the precariousness of the slope, the proposal aims at enhancing the quality of life of the inhabitants and ensuring the sustainability of the services provided by the ecosystem. To conclude, the buffer zone represented by the trails uses soft systems and light materials to

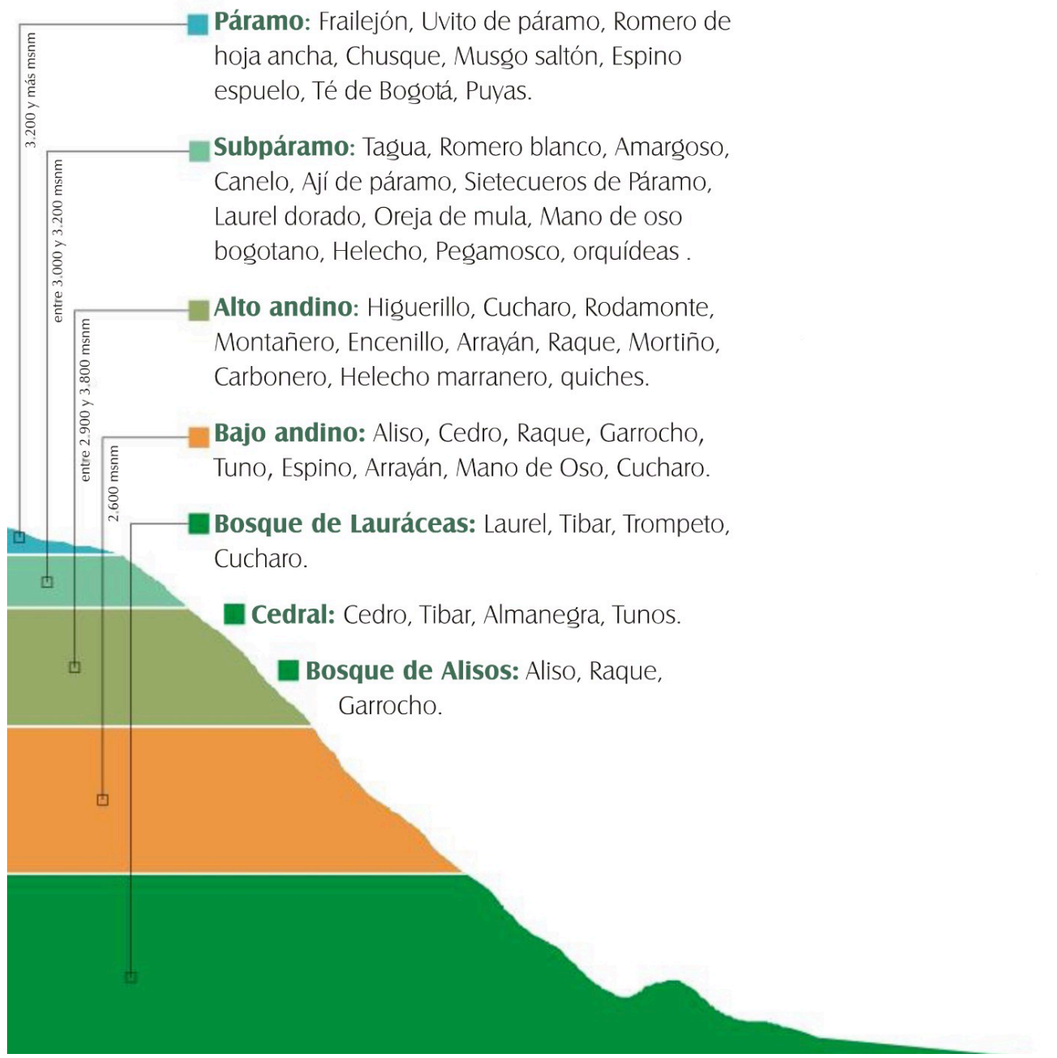


Figure N° 6. Altitudinal zonation of mountains, taken from El Camino de los Cerros. Diana Wiesner. 2007

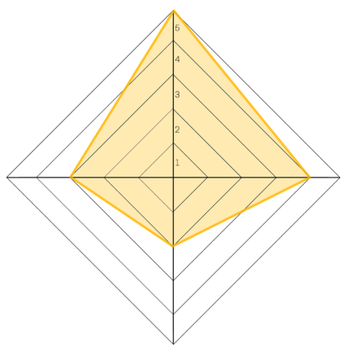
act as a protection system against landslides or dynamic events.

As for the third axis, the infrastructure takes shape in human-scale routes composed of trails, viewing platforms, and community gardens that enable local engagement and place the pedestrian at the center of the spatial experience. The project democratizes access to the hillside, eliminating the socio-spatial fragmentation among the various sectors bordering the mountain. However, while the dimension of the human landscape is extensively developed, the management of vertical connectivity has a more limited scope. Although the intervention is precisely deployed along the horizontal edge line, its progression toward higher elevations is constrained by the system's simplicity. Without relying on heavy or highly mechanized infrastructure, the project could have explored bolder ascent mechanisms that would have allowed for reaching higher elevations, thereby consolidating the perceptual experience of the mountain and expanding contact with other areas of biological diversity.

Finally, the fourth axis fulfills its purpose of revealing the territory, although its impact could be strengthened in response to the above-mentioned vertical limitation. Each section gained in elevation offers a unique perspective for understanding the city's scale and the tensions of the terrain; the dynamics of urban expansion become legible from a contemplative distance, while ecological fragility —usually rendered invisible in the daily routine of the valley— emerges clearly as one enters the hillside. Giving voice to the territory constitutes the most significant contribution of Wiesner's project, as it links urban communities and marginalized ecosystems in the construction of a collective response. Landscape awareness is heightened through this encounter; however, a greater vertical projection would have given even greater force to this territorial interpretation. It is likely that Wiesner avoided more profound interventions so not to alter the reading of the landscape, thereby establishing a flexible framework for action so that the community itself can determine the evolution of this structuring strip.



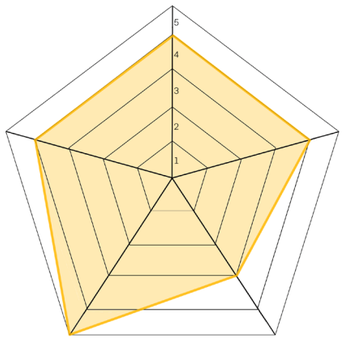
Figure N° 7. AProposed perspective, taken from El Camino de los Cerros. Diana Wiesner. 2007



Materiality
This design incorporates materials that have minimal impact and which are sourced locally, like wood and stones from the area quarries. This material choice is based on the need for permeability and harmonious aging in sync with the geology of the hill.

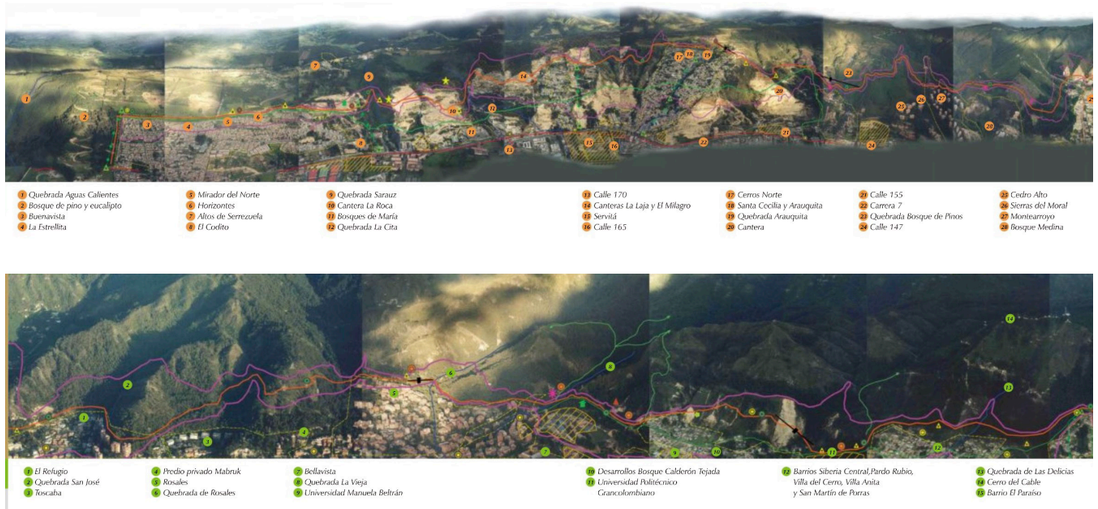
Social Impact
It creates a sense of belonging through the *Pacto por los Cerros:* a community co-creation process that transforms an area perceived as unsafe or privatized into a catalyst for democratic engagement and environmental protection. Once the issue of perception is resolved, the other social objectives will find synergistic solutions.

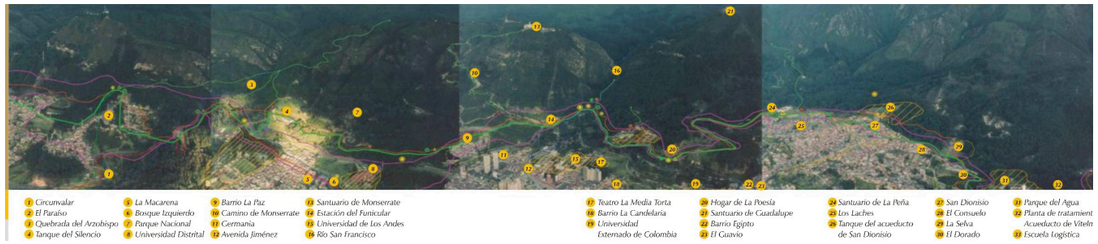
Accessibility
In tackling challenging slopes, it uses elevated wooden paths and low gradient ramps, making provision for varied forms of mobility without interfering with the natural landscape. But it does not consider the struggle involved in climbing the mountain despite the lack of barriers to mobility. Mobility infrastructure must not be blamed but implemented effectively.



Topographic integration
It moves up into the air by interventions which do not involve massive earthwork, maintain the continuity of the aquifer, and respect the morphology of the land. It is an example of how the contours of the mountain can be followed. But it lacks a very strong vertical integration.

Flexibility
A modular structure composed of autonomous sections allows the program to be adapted —conservation areas, environmental classrooms, or trails— according to the social and ecological evolution of the urban edge. The project integrates very well with each of its boundaries, leaving room for future interventions.





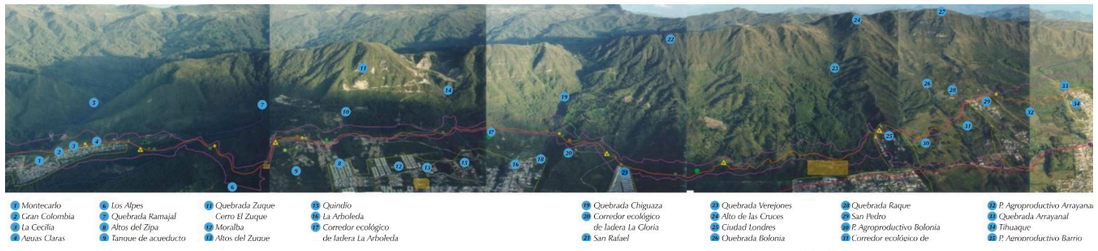


Figure N° 8. Proposal consisting of strips and sections of the city, taken from El Camino de los Cerros. Diana Wiesner. 2007

System of fluxes

14. *Top of Innsbruck by Fahrpläne & Öffnungszeiten.*

The next step focuses on the infrastructure system implemented in the project —the funicular and cable car— in an effort to move away from the notions of efficiency and ambition that technology tends to carry with it. What is needed, then, is a mobility infrastructure model in a rural context that goes beyond the simple connection between points A and B. The proposal put forward by the villages of Matese was based on a certain notion of spectacle, opting for transportation projects that imposed themselves on the landscape and were very attractive in theory. But if the conditions that lead to the abandonment of the inland area are not addressed, the search for superficial solutions will only create more problems. For this reason, the proposal for the software-like case study from a technological and programmatic perspective is the Nordkettenbahnen in Innsbruck[14], Austria.

This mobility system is so versatile and dynamic in integrating and generating mountain activities that being a funicular and an aerial cable car is the least of its qualities. But its history is not recent: the Nordkettenbahnen transportation system was established in the early 20th century in response to the historical need to directly, quickly, and safely connect the urban fabric of the Inn River valley with the rocky barrier of the Nordkette mountain range. In a region undergoing socioeconomic reconstruction after World War I, the Alpine topography was perceived simultaneously as a symbol of identity and as an impossible physical barrier to the development of tourism and recreational activities for city residents.

The urgent need to democratize access to the high mountains without resorting to the construction of invasive roads —which would have scarred and destabilized the slopes— led to the creation of a cable car system that would connect the city center to the higher elevations in a matter of minutes. The first structural solution came in 1927 under the direction of Austrian architect Franz Baumann, who designed the upper cable car stations at Seegrube —1,905 meters above sea level— and Hafelekar —2,300 meters above sea level—, using a minimalist style of local masonry and wood that blended naturally with the landscape. Decades later, at the beginning of the 21st century and in response to the obsolescence of the lower section connecting the valley to the elevated district of Hungerburg, the Innsbruck City Council launched an international architectural competition to completely renovate the urban infrastructure. The winning proposal was executed in 2007 by Zaha Hadid Architects[15], led by Hadid herself and Patrik Schumacher, who transformed the funicular line into a landmark of contemporary architecture through four stations characterized

15. *Nordpark Cable Railway Stations by Zaha Hadid Architects, 2004-2007.*

by organic roofs of thermoformed white glass over exposed concrete bases, simulating glacial formations in contrast to the rocky mass. These interventions were later complemented by specific projects such as the Perspektivenweg by the Norwegian firm Snøhetta[17] in Seegrube —a series of Corten steel viewing platforms that invite visitors to contemplate the landscape— and the design of the cable-stayed bridge over the Inn River, which also integrates nearby facilities such as the Alpine Zoo—Alpenzoo— and the network of trails in the Karwendel Nature Park.

16. *Path of perspectives by Snohetta, 2016-2018.*

The territorial impact of the Nordkettenbahnen has been profound: not only did it address vertical connectivity through infrastructure that blends into its footprint on the ground, but it is also highly efficient in its operation, successfully blurring the boundary between the dense city and the mountainous landscape. By transforming the Alpine summit into an everyday public space accessible to students, athletes, residents, and visitors regardless of socioeconomic status, the project redefined Innsbruck's relationship with its own topography, transforming the ruggedness of the mountainside into a space of coexistence, clean mobility, and an appreciation of the landscape.



Figure N° 9. Historic postcard of the Hungerburgbahn, taken from Innsbruck region. Stadtmuseum. 1906

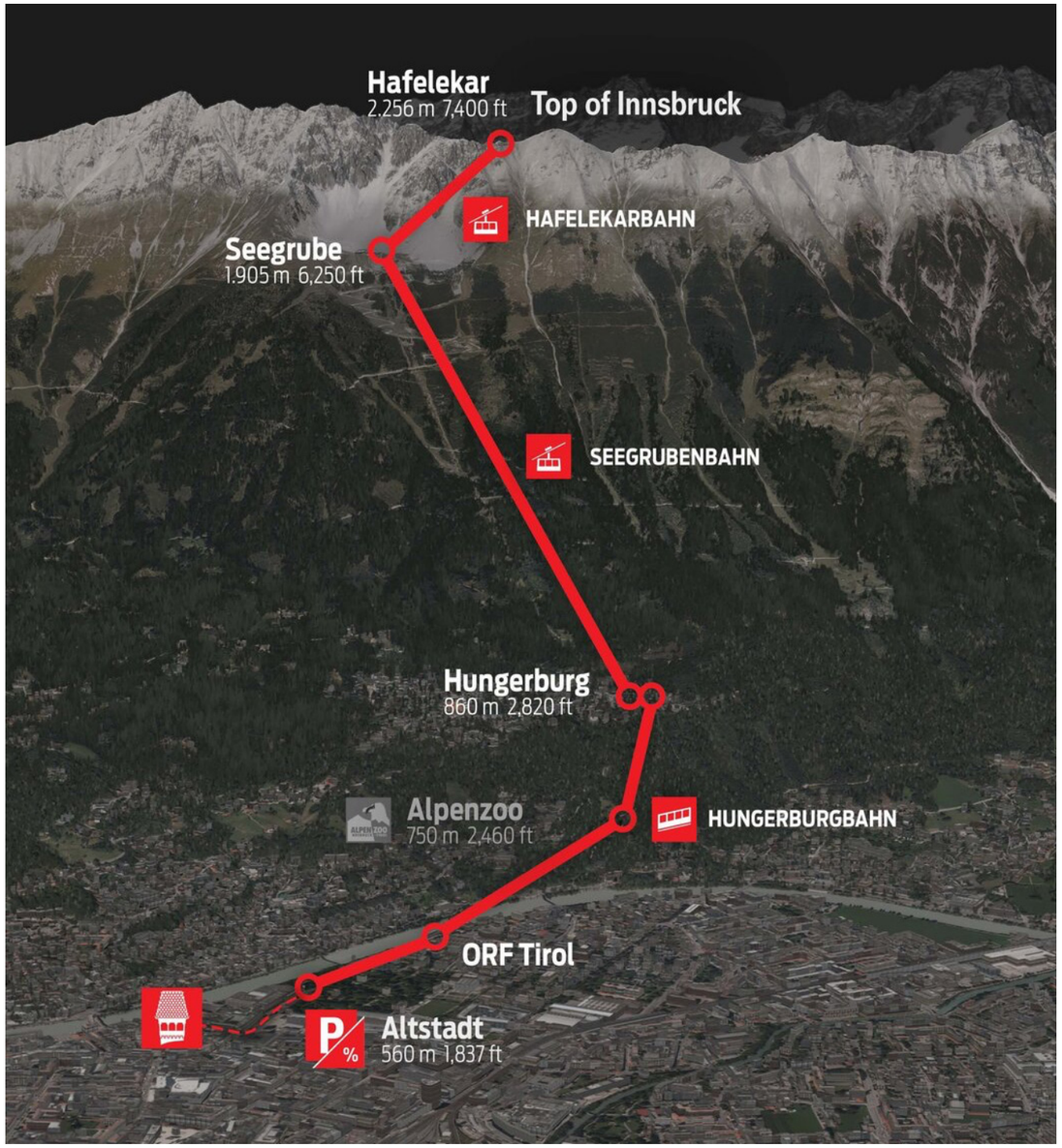


Figure N° 10. 3D map of the funicular and the cable car, taken from Innsbruck Region.

The infrastructure of the Nordkettenbahnen in Innsbruck forms an interesting connection with axis 1, establishing a century-old relationship with the mountain and recognizing it as the territory's physical and non-negotiable framework. The project recognizes the outstanding rock formation of the Nordkette as the main geographical element that influences the Inn Valley. Rather than constructing invasive roads that disrupt the terrain, thereby destroying the Alpine region, the system uses cable cars and aerial trains to minimize any tectonic disturbances. This decision enables ecological synergy with the natural environment; the route rests lightly on the mountainside via isolated supports and elevated viaducts. However, there are two perceptual aspects that could be problematic. The first —which is actually linked to the second— is the project's focus on tourism. Unlike Gion Caminada's proposals, Innsbruck chose to prioritize tourism over any form of social rehabilitation, as an immediate economic revival was considered necessary. Fortunately, the sporting activities and the sector's reputation led to positive outcomes that gave rise to social dynamics. The second aspect worth mentioning, then, is the search for a rather strong material differentiator, driven by the desire to attract tourists. Zaha's material choice —aimed at symbolically highlighting the landscape — makes local and participatory processes more difficult; thermoformed glass is certainly not easy to come by in Innsbruck.

In developing the second axis, the approach in Innsbruck takes a more drastic and decisive turn, positioning technology in the service of a territory characterized by dynamism and vulnerability. This is because, during the direct transit from the valley to the high Alpine altitude, the infrastructure faces extreme conditions marked by strong winds, heavy snowfall, the risk of avalanches, and the constant rock instability of the slope. In response to the territory's far more lethal fragility, the system does not attempt to subdue the environment; on the contrary, it absorbs geological uncertainty through the use of long-span aerial openings and highly flexible articulated supports, minimizing points of contact with the brittle ground. Furthermore, with remarkable structural and construction sensitivity, the protection against landslides at the upper stations avoids massive retaining walls that would disrupt snow runoff. Instead, the project anchors its supports using deep point foundations set in solid rock, ensuring structural safety while preserving the mountain's hydrological dynamics intact. Although this approach is less porous than others, it successfully adapts to the safety requirements inherent in this type of ecosystem.

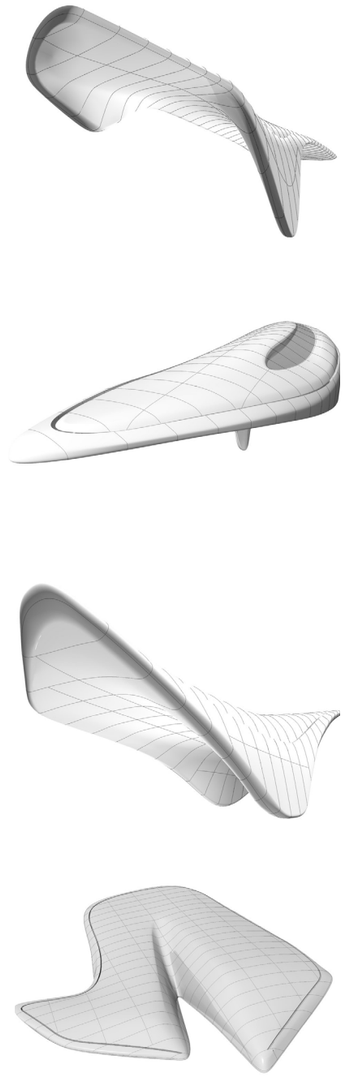


Figure N° 11. Shape of the roofs proposed by Zaha Hadid Architects, taken from ZHA Architects. 2004-2007

17. *Cul zuffel e l'aura dado-Gion Caminada by Bettina Schlorhaufer, 2005.*

The principles outlined in this book —which will be explored in greater detail later on— succeed in balancing and integrating material, social, and architectural functions with the concept of belonging and the revitalization of depopulated areas.

The Nordkettenbahnen connects with axis 3 by demonstrating how vertical mobility can integrate the tectonic dimension with the human landscape. The infrastructure reimagines the user experience by creating a fluid spatial sequence that connects the urban valley with the Alpine summit in just 20 minutes. This ongoing process has replaced the monumentalist structure of infrastructural networks with the highly efficient transportation network where the comfort of the passengers and their experience of ascending the elevation have become the essence of the project. Thanks to the social values and livability of the system, the project was able to transcend its initial function of becoming a tourist attraction and successfully merge with the public transportation network. With this strategy, access to the Alpine summit becomes democratic not only for tourists but also for the residents, students, and athletes, thus eliminating the topographic barriers that used to isolate the mountain and turning it into a public urban space with the help of the Nordkettenbahnen. Even though the project had a danger of promoting tourism rather than the well-being of people, it managed to create such dynamics that it inevitably involved the local population.

With regard to the fourth axis, the Nordkettenbahnen project responds forcefully to its premises, as it succeeds in transforming the infrastructure into a mechanism for revealing the territory and constructing geographical memory. Through the ascent sequence, the project not only overcomes a topographic elevation difference but also unfolds an educational experience in which the physical ascent translates into a progressive awareness of the landscape's fragility. Along this route, the terminal stations at Seegrube and Hafelekar bring to life the viewpoint *pedagogy*[18] proposed by Nogué. The highest point transcends scenic consumption and the notion of tourism; the platform suspended over the void functions as a critical observatory overlooking the Inn River basin. In this elevated view, the heights make it very obvious how the physical constraints of urban development are shown, with the vulnerability of the city within the Alpine valley and the harsh reality of the mountain environment being made clear to the passerby.

18. *About pedagogy.*

The landscape is not merely matter; rather, it is a teacher capable of educating geographically. From this perspective, the environment exerts a moral, cultural, and self-esteem influence on the spirit of the society that inhabits it.

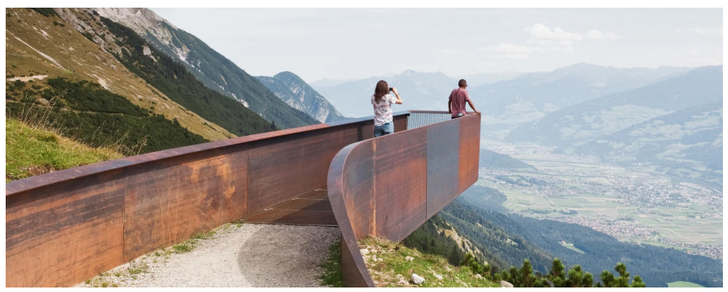
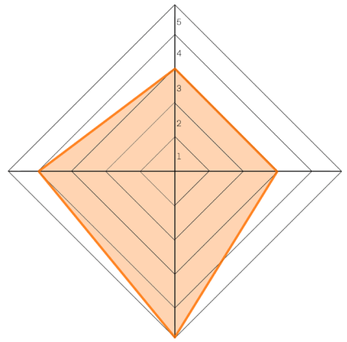


Figure N° 12. View from Snohetta's proposal, taken from Snohetta. 2016-2018

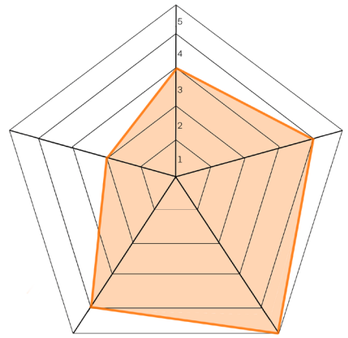
Materiality: The valley roofs are made from double-curved thermoformed glass to mimic ice flow on top of concrete that represents glaciers. At the summit, Franz Baumann's stations utilize austere masonry made of local stone and a lightweight metal structure, aging in harmony with the rocky mass. Although the proposed material concept generates interest, it may pose challenges in fostering circular processes and a sense of identity within the region.



Social Impact: It connects a community divided by topography, linking the historic center, the mid-slope neighborhoods of Hungerburg, and the Karwendel Park nature reserve. It serves as a catalyst for identity and daily public use. The good news is that the project went beyond its mere tourist orientation.

Accessibility: The problem of a difference in height exceeding 1,700 meters is solved with elevators and platforms on one level and vehicles of an inclining nature.

Topographic Integration: The cable car and funicular system minimize its footprint on the ground. The cable bridge over the Inn River and the point supports of the cable car towers float above the terrain without interrupting water runoff or creating scars from land movement. Despite its relative heaviness, the structural system fulfills ecological functions by stabilizing the mountain terrain.

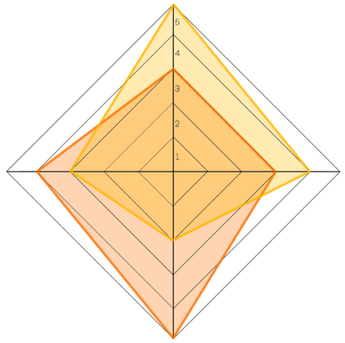


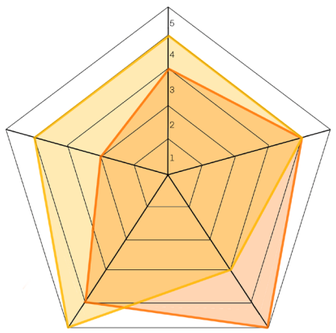
Flexibility: A prefabricated, technologically advanced structure capable of continuous operation, adapting to severe seasonal variations in load - from managing tourist and sports traffic during off-peak seasons to meeting the demand for winter activities.



Figure N° 13. One of the stations designed by Zaha Hadid, Taken from ZHA Architects.

Lessons of coexistence





The hillside as a living buffer: From Diana Wiesner's work arises the problem of projecting a soft and porous border. El Matese is a place where the main dangers to the hillside do not come from uncontrolled informal growth but rather from rural depopulation, deforestation and the cessation of agriculture, therefore, the role of the infrastructure will be that of a biophysical filter that will prevent soil erosion and protect water reservoirs through bioengineering methods. On the other hand, the proposal of the funicular and the cable car, although not necessarily conceived as a buffer zone, reveal how infrastructure can bring new life to the territory and provide access to areas historically inaccessible through verticality.

Programmatic Mapping and Risk Management through Human Use: Wiesner's work demonstrates that the educated, conscious presence of man is the most important guardian of the landscape. Based on this premise, interventions in Matese should define the pedestrian access and planting systems for the communities in the areas of greatest geotechnical danger; This will help to compact the soil and show the origin of the water, turning environmental conservation into a social appropriation.

Spot mapping and minimal footprint on the ground: The Nordkettenbahnen and Cerro Trail projects have shown that it is necessary to anchor infrastructure located on land by sloping to the ground itself by means of deep piles, flexible supports and floating paths. In the case of the connection between Piedimonte Matese and Castello del Matese it will not be possible to carry large mass movements due to the preservation of the natural drainage and the rocky mass of the slope. The more precise the acupuncture of the project is in the mountains, the lower the risks.

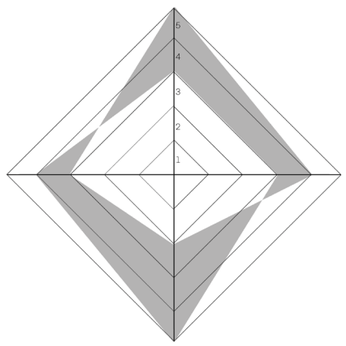
The pedagogy of the viewpoint and the awareness of the altitude: In fact, both case studies go beyond the mere spectacular nature of the use of altitude and make it an instrument, according to Nogué, to read the territory. From this point of view, the infrastructure that connects Piedimonte with Castello requires elements of permanence through which it will be possible to contemplate the Volturno valley, gaining awareness of the level of the landscape and the fragility of the living ecosystem.

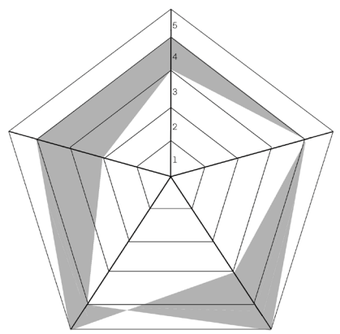
Software and hardware: By considering the mountain as an irreplaceable structural element whose logic is above human reason, the architectural process shifts the focus to the programmatic component to truly engage with the landscape. This means that the possibility of activities is not imposed, but responds to the conditions offered by the natural structure itself. Therefore, when establishing the construction parameters, the first element that must be taken into account when developing the habitability software is to create spatial dynamics that take into account the topographic determinants.

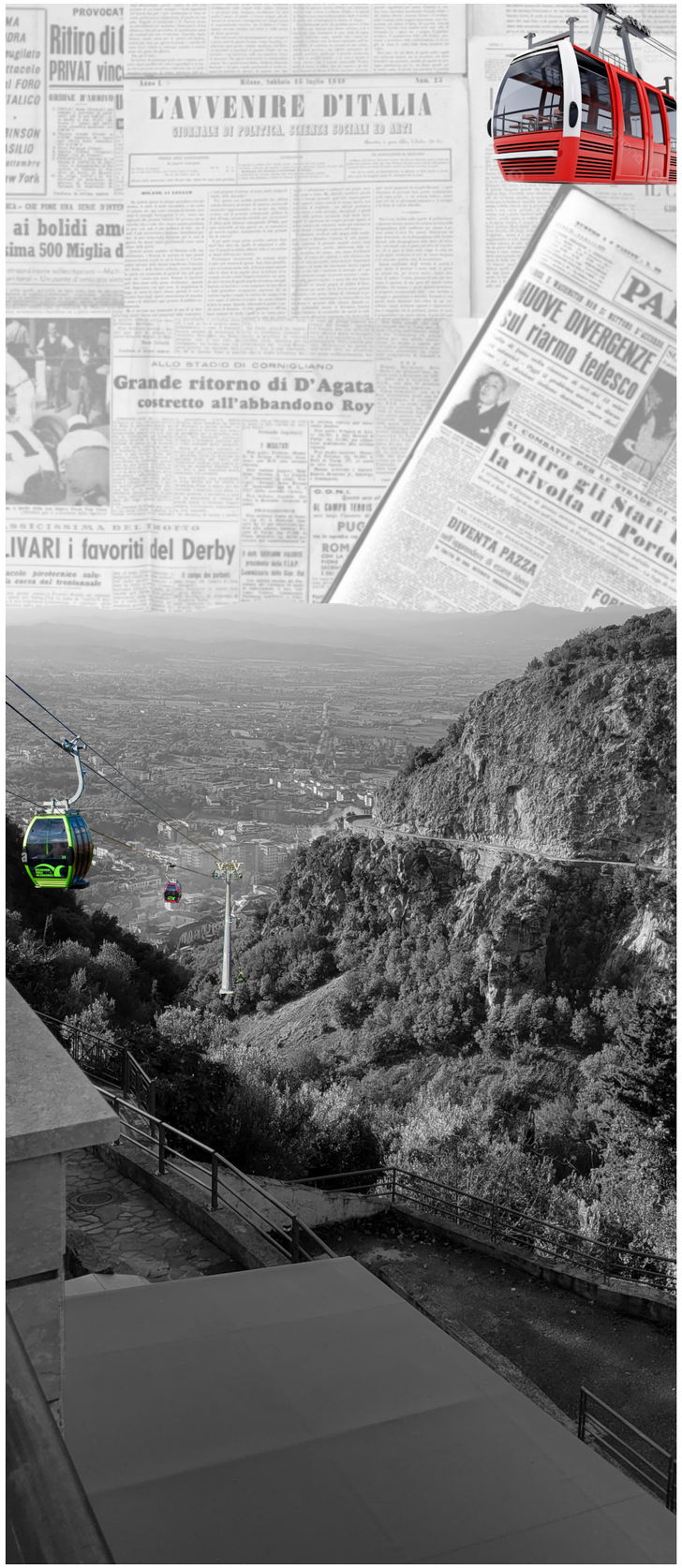
Mistakes and strategies that should not be replicated

Over-mechanization and privatization of access: A high technological dependence on the Nordkettenbahnen will result in the commercialization of the landscape, as well as the construction of access barriers. It has already been discussed previously that this tourism-oriented approach will result in gentrification and overpricing. Therefore, at Matese it is imperative that we do not fall into the trap of having large-scale or closed systems where the landscape becomes only a product for the time being.

Protagonism of Object Architecture over the natural support: Zaha Hadid's expressive formal language of the seasons, which is typical of her theoretical and technical creation, reveals the danger of placing an architectural object above the understanding of the context. Although the curved shape of the roofs refers to the dynamics of the glaciers of the Alps, the high level of industrialization can cause dependence on the outside and dissociation from the building traditions of the region. Therefore, it is suggested to implement local materials to ensure the harmony of the project and the geological structure of the Matese.







The flexible system

Site analysis

Architectural parameters

Assembling the interface
- Station 1
- Station 2
- Station 3

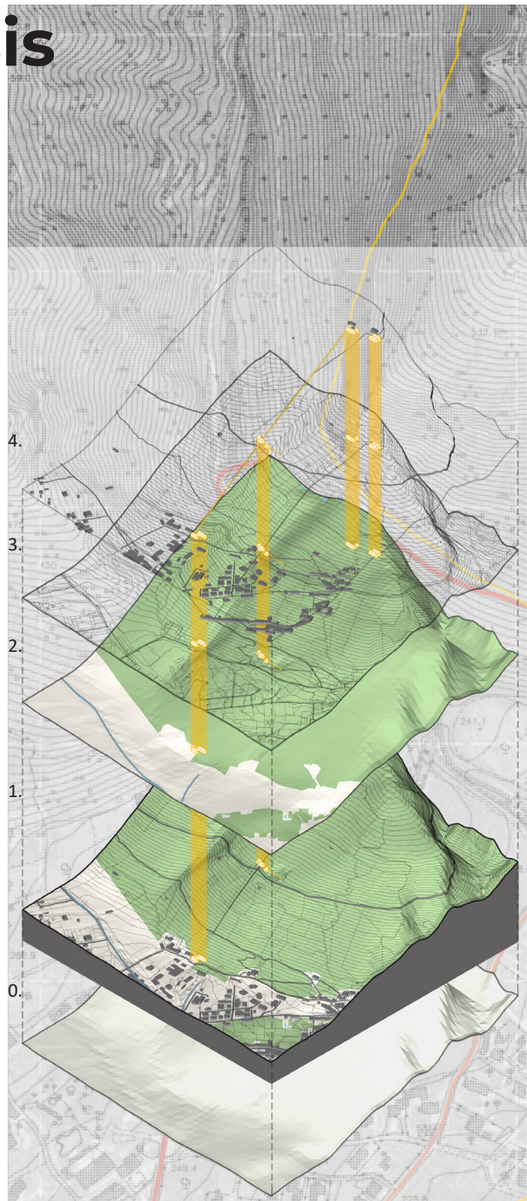
Output: the ~~module~~ model

The rules

Site analysis

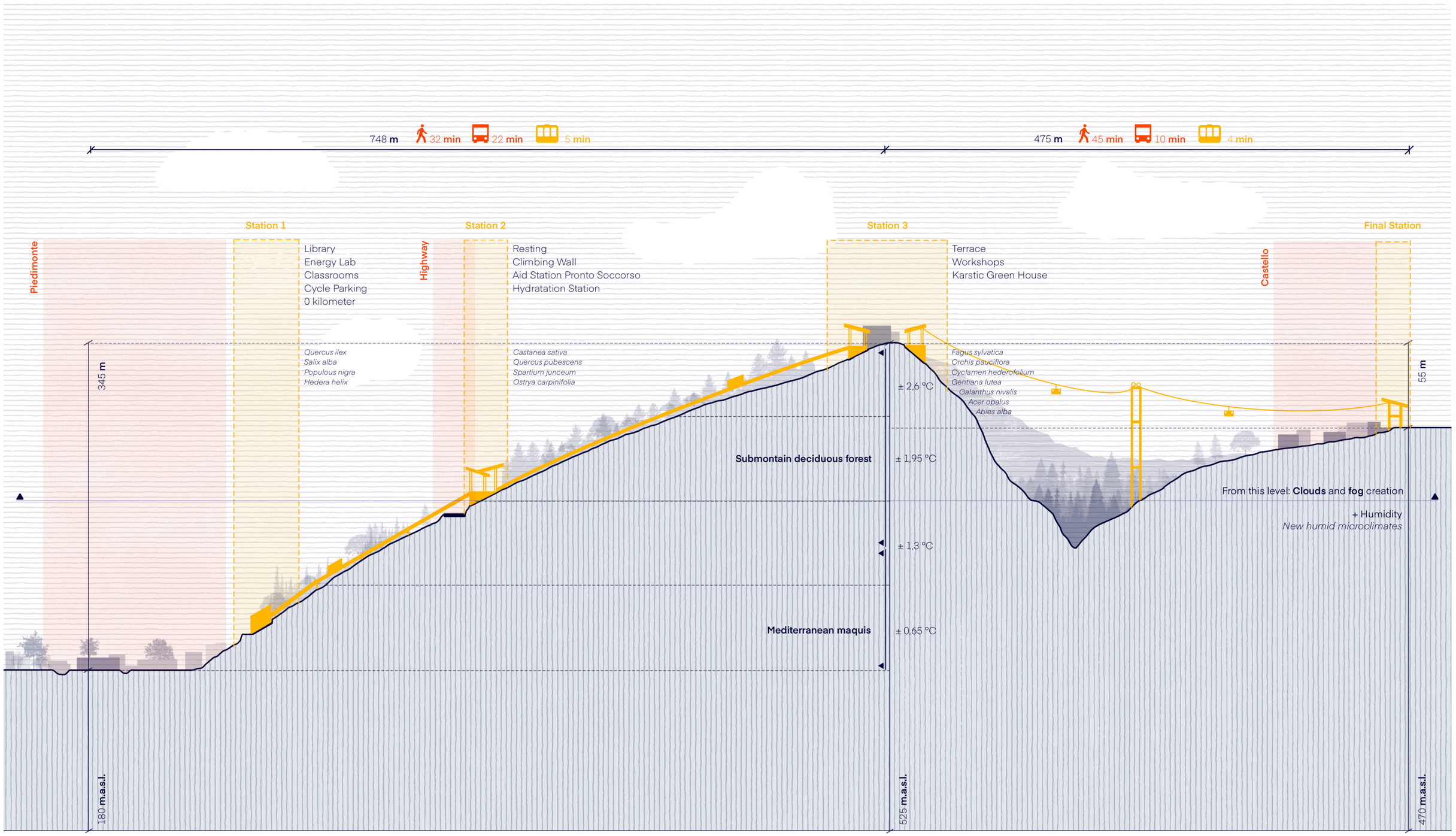
The assessment of the Piedimonte Matese–Castello del Matese corridor reveals a territory characterized by biophysical fragility and social asymmetry. From an environmental perspective, the karstic substrate and steep slopes call for minimal intervention; the mixed forest acts as a key biological infrastructure for stabilizing the soil and preventing erosion, ruling out any earth-moving or heavy construction work.

On the social front, there is a marked divide between the service-providing center and the periphery. Castello exhibits high vulnerability and a rapidly aging population, which it cannot support on its own, as it is subject to strict functional dependence in health, education, and mobility. This infrastructure will not be just a technical connection but rather a temporary attraction. It will have to reduce its impact on the karst landscape, protect the forest cover, and de-centralize the services. The stations will become facilities that break social dependency and provide the people with venues for culture, health, and community, giving back the right to the mountains.



0. Terrain 1. Site 2. Vegetation Layer 3. Defining Layout 4. Infrastructures

Terrain Section



Architectural parameters

For the current infrastructure project between Piedimonte Matese and Castello del Matese, the necessity of vertical connections is obvious: it is an old request of the inhabitants, which, after careful conceptualization, has all chances to become the trigger for territorial dynamics. The advantages connected with mobility, inter-community relations, and socio-spatial coherence will make up for the cost of this project. Yet, in the context of biophysical and social fragility, the funicular and cable car projects may be the beginning of regeneration or, alternatively, cause economic and demographic disproportions.

Thus, the primary design challenge consists of determining how to shift the notion of massiveness and stereotyping traditionally associated with infrastructure toward a logic of lightness and structural adaptability, one that respects both the hillside ecosystem and the human scale of local communities. Faced with this challenge, Pierre Bélanger introduces the *concept of prepositions*[1], which postulates for the search for unique, operational solutions tailored to the specific characteristics of the geographical context, thereby avoiding the uncritical repetition of rigid typological models. Within the framework of the project, this translates into preserving the functional essence and conceptual scope of the connection system while revitalizing the envelope that gives shape to this solution. This capacity for transformation aligns with the theory formulated by Christopher Alexander, Sara Ishikawa, and Murray Silverstein regarding the *language of patterns*[2]*:* an essential matrix of relationships that responds dynamically to environmental determinants, ensuring the architecture's autonomy in addressing the specific problem it seeks to solve.

This is why the design considerations necessitate the creation of lightweight structures which, by promoting social appropriation through time, get to the phase of *gradual stiffening.* The importance of such a design strategy can be attributed to the application of methods used in ephemeral architecture to create a firm structure in a material infrastructure through the process of reversibility. In this way, it is suggested construction systems with enough flexibility that would make it possible for spaces to be occupied by gatherings.

Within this theoretical framework, the definition of the *architectural model* emerges: a conceptual and constructive device that embodies the lightness required by the rocky slope and promotes the socio-material logics that Gion Caminada advocates to attach the work in the memory and economy of the local population[3]. A monolithic and inflexible infrastructure cannot be assimilated or managed in a participatory way by communities the size of Piedimonte or Castello, due to its scale, its tectonic weight, and its institutional implications. Instead, by fragmenting the system into manageable spatial units, the theoretical dynamism articulated by Greg Lynn is achieved: architecture must shift from static permanence toward animation, fluidity, and continuous change[4]. The traditional notion of ideal typology is replaced by that of *topologies*[5]; the aim is not to replicate a standardized type of station that ignores the particularities of the territory and its inhabitants, but rather to reinterpret the very notion of infrastructure. Since the technical act of connecting the hillside is inevitable, the project's task consists of designing the architectural envelopes and skins that channel this connection, configuring the topologies necessary to address each unique feature of the landscape.

For this reason, the proposal emphasizes the use of the model and categorically rejects the use of the module. The module is inherently rigid and inflexible, as it is defined

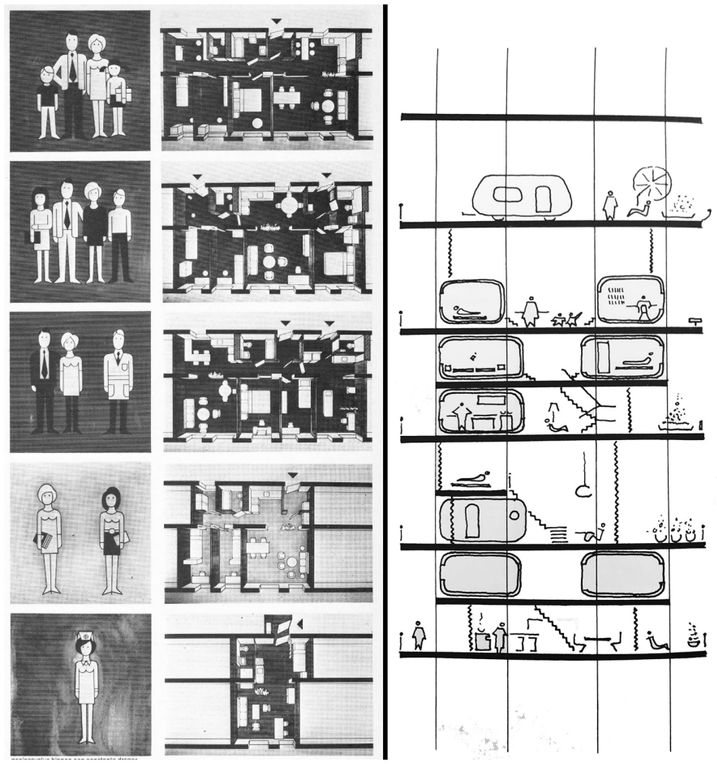


Figure N° 1. Illustrations and floor plans for distinct units to accommodate different types of inhabitants, and depiction of the support-infill principle for an unpublished booklet, taken from Library of Eindhoven University of Technology. John Habraken. 1969 and 1963

1. *About prepositions.*

The preceding process of this postulate lies in the convergence of ideologies, practices, and irreducible conditions that translate into design theorems and preconditions.

2. *Language of patterns by Cristopher Alexander et al., 1977.*

Alexander defines each pattern as an abstract rule that describes a problem and the core of its solution, so that this solution can be used a million times, without ever being applied in exactly the same way.

3. *About local population.*

Caminada argues that the scale of projects, in relation to perceptual notions, facilitates their acceptance in rural areas. For this reason, it is crucial, then, to break down a large-scale project into manageable parts for the community.

4. *Animate form by Greg Lynn, 1999.*

Although the concept of curvilinear architecture —created through equations and data manipulation— was not first proposed and developed by Greg, he did emphasize in his work that fluidity is intrinsic to humans and should be sought in every possible pattern, form, or movement.

5. *¿Tipologías o topologías? by Carlos Marcos, 2012.*

The proposed topological concept comes from a process similar to a mathematical one.

6. *Supports by John Habraken, 1972.*

The author warns that traditional industrialized collective housing strips residents of their active role, treating them as mere consumers of rigid, uniform units that do not allow for changes over time.

7. *About support and infill.*

The structural concept is the primary guarantee of the inhabitants' personal development. Once the structure is in place, any transformation is possible.

by fixed parameters in terms of dimensions, materials, assemblies, and functionality; to speak of an *adaptable module* is a conceptual contradiction. In contrast, a model structured around a language of patterns offers greater flexibility in terms of the interpretive and tectonic scope of the term, as well as incredible variability in each result.

In this regard, the theoretical work of John Habraken takes on particular significance, as he formally introduced the concept of the model into the field of architecture[6]. His initial reflections, stemming from a critique of public housing, demonstrate how modular repetition and rigid floor plans ultimately deprive residents of their freedom and their ability to make the space their own. To address the challenge of optimizing material resources without sacrificing the user's autonomy, Habraken establishes the duality between *support and infill*[7]: a primary load-bearing structure is designed —

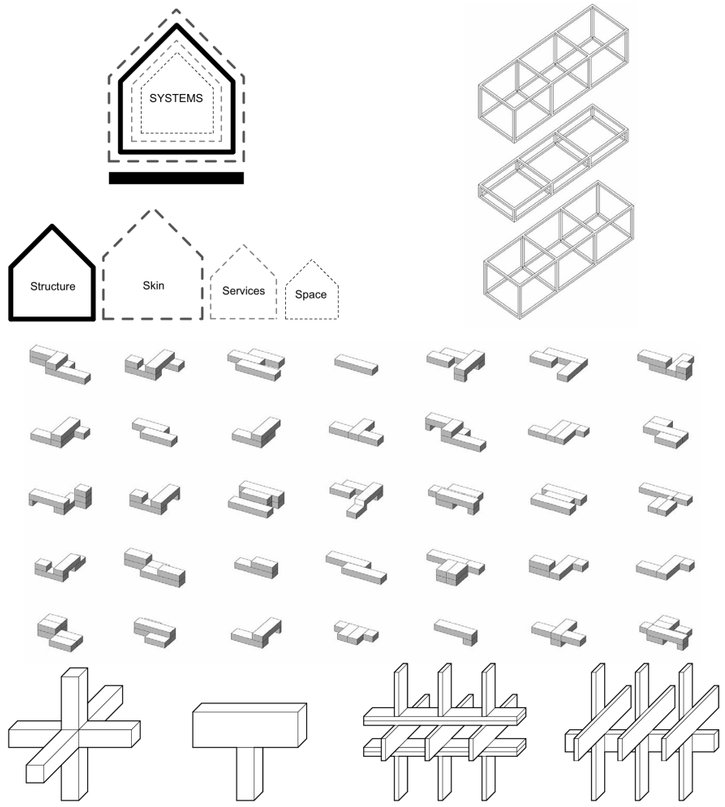


Figure N° 2. Diagrams illustrating Habraken's concept of support and infill, as well as variations on one architectural model, taken from Prefab Architeture. Ryan Smith. 2010

one that is sufficiently sturdy to withstand structural demands yet open in its configuration— while the exterior walls, interior partitions, and fixtures are freely defined and modified by the occupants. Under this logic of mutation[8], lightness, reversibility, and adaptability coexist without altering the main structural framework. Although Habraken does not prescribe fixed geometries, he lays the conceptual groundwork for articulating architectural flexibility with the democratization of lived space.

Furthermore, Ryan Smith's principles extend these ideas to the field of tectonic production, introducing criteria for dimensional coordination, assembly systems, and prefabrication logics that define the executional dimension of the adaptable model[9]. The model is thus conceived as an essential system of reproduction that rejects a predetermined static form, providing the technical standards required for each spatial unit to specialize according to the community's socio-spatial requirements. Furthermore, Smith emphasizes that the model involves resource management cycles and low-impact construction processes that provide ecological and social benefits by functioning as an open system at all scales, thereby enabling *mass customization* processes.

The implementation of the *open building*[10] philosophy further promotes this approach in that it gives permeability to the design and integration of the building with the surrounding environment. The flexibility of the system itself, however, entails the risk of undermining the adaptiveness of the system. In order to avoid such an undesirable outcome, it is important to set a boundary for the operation of the system. Once a station or facility has become too specialized, it has lost its adaptiveness because it performs only one particular function; once it has been built according to irreversible assembly systems, there will be no chance of disassembly or adaptation of the system.

From the perspective of urban acupuncture and the network of decentralized facilities in the Matese Mountains that is proposed, the notion of an adaptable model ties in with the design vision of Alfredo Brillembourg, who describes hillside transit stations as social hubs powered by a motor on top. By applying this scale of intervention to the context of an inland area of Campania, Italy, the democratization of the stations through an open model ensures citizen participation—not only in the experience of public space but also in its cycles of maintenance, care, and physical adaptation. At the same time, this approach ensures interventions with minimal impact on the rocky terrain, facilitating synergy with the biophysical flows of the hillside. By articulating the macro scale of transportation infrastructure with the micro scale of spatial models, a *buffer* zone is

8. *About mutation.*

To mutate is not merely an aesthetic or formal whim, but an inevitable biological, technical, and social necessity for the survival of communities.

9. *Prefab architecture by Ryan Smith, 2010.*

His work began as a critique of traditional three-dimensional modules, as they end up imposing strict limits on the size of rooms and drastically limit the ability to make adjustments on-site after the foundation has been laid.

10. *About mass customization and open building.*

This democratization proposed by Smith makes it possible to implement apparently heavy stations through open building notion and community participation, thanks to mass customization.

11. *About motors.*

This was Brillembourg's brief but accurate description of the city of Caras, and it is well-suited to Matese's project.

created where nature can develop continuously without suffering erosion from urban growth.

In this way, the model caters to the various regional actors in Matese, providing flexible spaces for collaboration that highlight and give a voice to each community sector. It is up to the residents themselves to plan the necessary spatial adjustments when the dynamics of the mountain so require, such as the eventual reduction of a station's footprint to prevent geotechnical or environmental risks.

Finally, based on the contributions of the authors cited, five essential tectonic and environmental conditions are defined that must be ensured to preserve the model's adaptability over time:

1. **Multi-directional lighting and ventilation:** The model must receive natural light and cross-ventilation from at least two different facades. Exclusive overhead lighting or one-sided light sources compromise the spatial and hygrometric quality of the interior spaces.

2. **Conditional growth:** Expansions in height or depth are strictly contingent upon preserving the flow of light and natural ventilation in the spaces defined by the model.

3. **Visual Openness and Permeability of the Envelope:** To ensure the psycho-spatial well-being of users, the model's envelope must maintain a proportion of visual openings toward the mountainous landscape of no less than 50%.

4. **Physical independence between the support and the infill:** Physical and structural independence of the primary load-bearing structure from the secondary divisions of walls is the sole way to ensure reversibility, meaning that the transformation of the interior can be done without jeopardizing the integrity of the structure itself and its location.

5. **Life Cycle and Circular Participation:** Priority is given to construction systems and local materials that allow for future dismantling and the active incorporation of the region's artisanal knowledge, ensuring the long-term socio-material sustainability of the project.

Population and Flow Parameters

Municipality	Region	Total Population	Labor Force Participation in Piedimonte		Potential Student Users	Potential Working Users	Other Users	Weekend Tourism	Total Potential Users
Piedimonte Matese	Campania	10.021	100,00%	4150	147	125	85	60	884
Castello del Matese	Campania	1.361	55,00%	215	38	21	10		
Alife	Campania	7.420	41,00%	1140	48	34	51		
Sant'Angelo d'Alife	Campania	2.047	57,00%	478	21	14	16		
San Gregorio Matese	Campania	910	62,00%	174	35	17	8		
Letino	Campania	680	42,00%	80	19	8	7		
Surrounding Area	Campania	6.500	39,00%	1039	37	31	52		
REGIONAL TOTAL	-	28.939		7.275	345	251	228		

Projected Space	Assigned Station	Peak Users	IT Standards (square meters per person)	Net Area Required (m2)	Regulatory Framework
Library (Reading and Study)	Station 1 (Piedimonte)	50	3	150	IFLA Standard / Manuale dell Architetto
Energy Lab	Station 1 (Piedimonte)	30	4,5	135	D.M. 18/12/1975 (School Buildings)
Flexible Classrooms	Station 1 (Piedimonte)	40	2	80	D.M. 18/12/1975 (Secondary Education)
Cafeteria	Station 1 (Piedimonte)	40	1,75	70	IFLA Standard / Manuale dell Architetto
Rest Area (Trail Access)	Station 2 (Intermedia)	60	1,3	78	Comfort Indices in Protected Natural Areas
Climbing Wall (Landing Area)	Station 2 (Intermedia)	16	4,5	72	CONI Technical Standards for Sports Facilities
First Aid Station (Pronto Soccorso)	Station 2 (Intermedia)	1	15	15	D.P.R. 14/01/1997 (Single Local Minimum)
Hydration Station (Entrance)	Station 2 (Intermedia)	10	1,2	12	Accessibility and an Inclusive Approach D.M. 236/1989
Viewing Deck (Terrace)	Station 3 (Castello)	150	1,75	262,5	Codice Prevenzione Incendi (Evacuation Comfort)
Community Classrooms (Workshops)	Station 3 (Castello)	40	2,25	90	Social Gathering Places (Senior Citizens)
Karst Greenhouse (Shade House)	Station 3 (Castello)	40	4	160	Accessibility in Botanical Trails D.M. 236/1989
SUGGESTED TOTAL NET BUILT-UP AREA				1903.1	

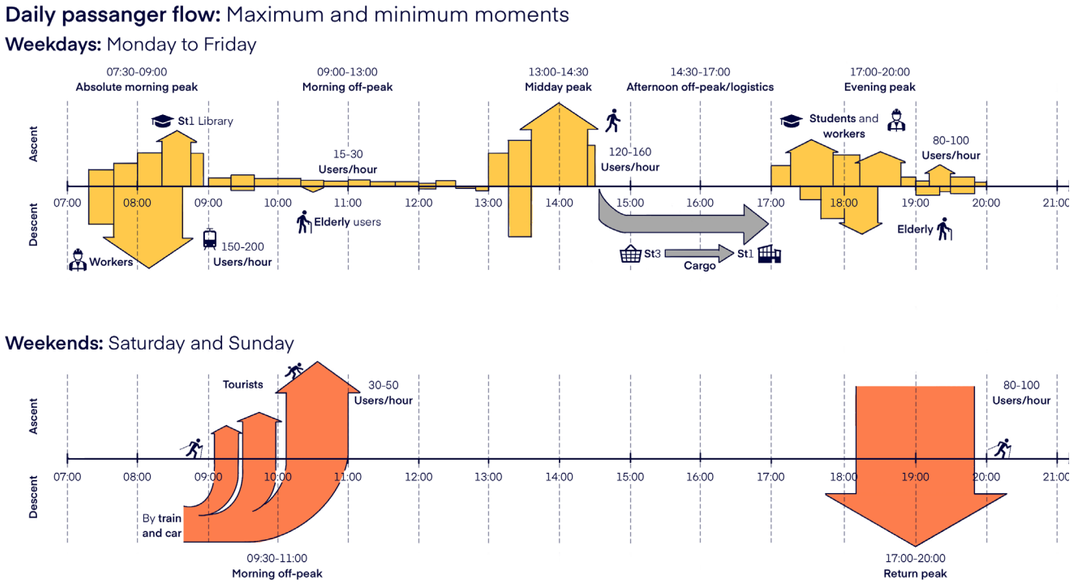
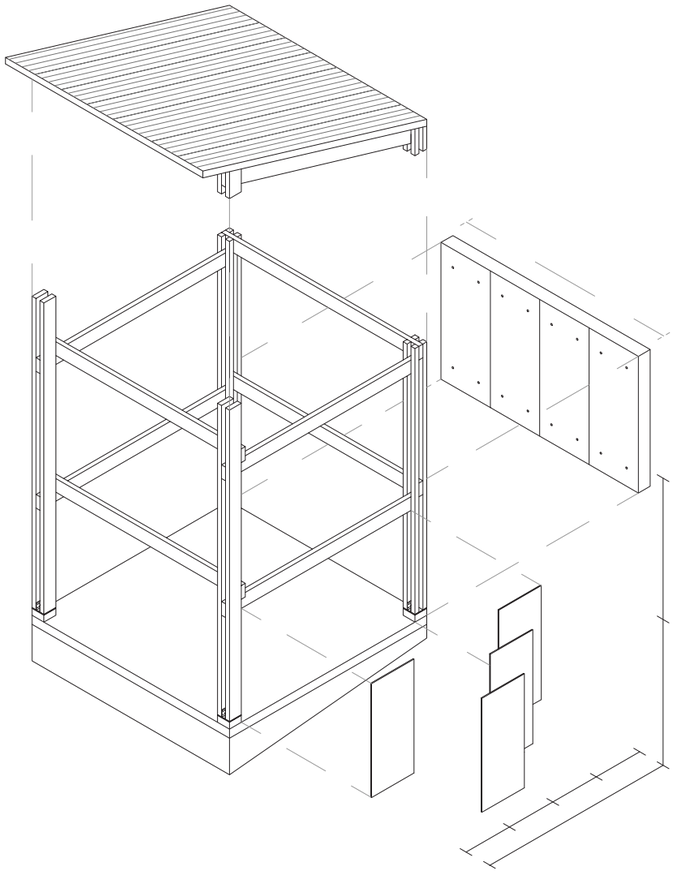


Figure N° 3-4. Analysis of population data to estimate the number of project users, as well as a diagram illustrating usage patterns and traffic flows at specific times. Original work. 2026

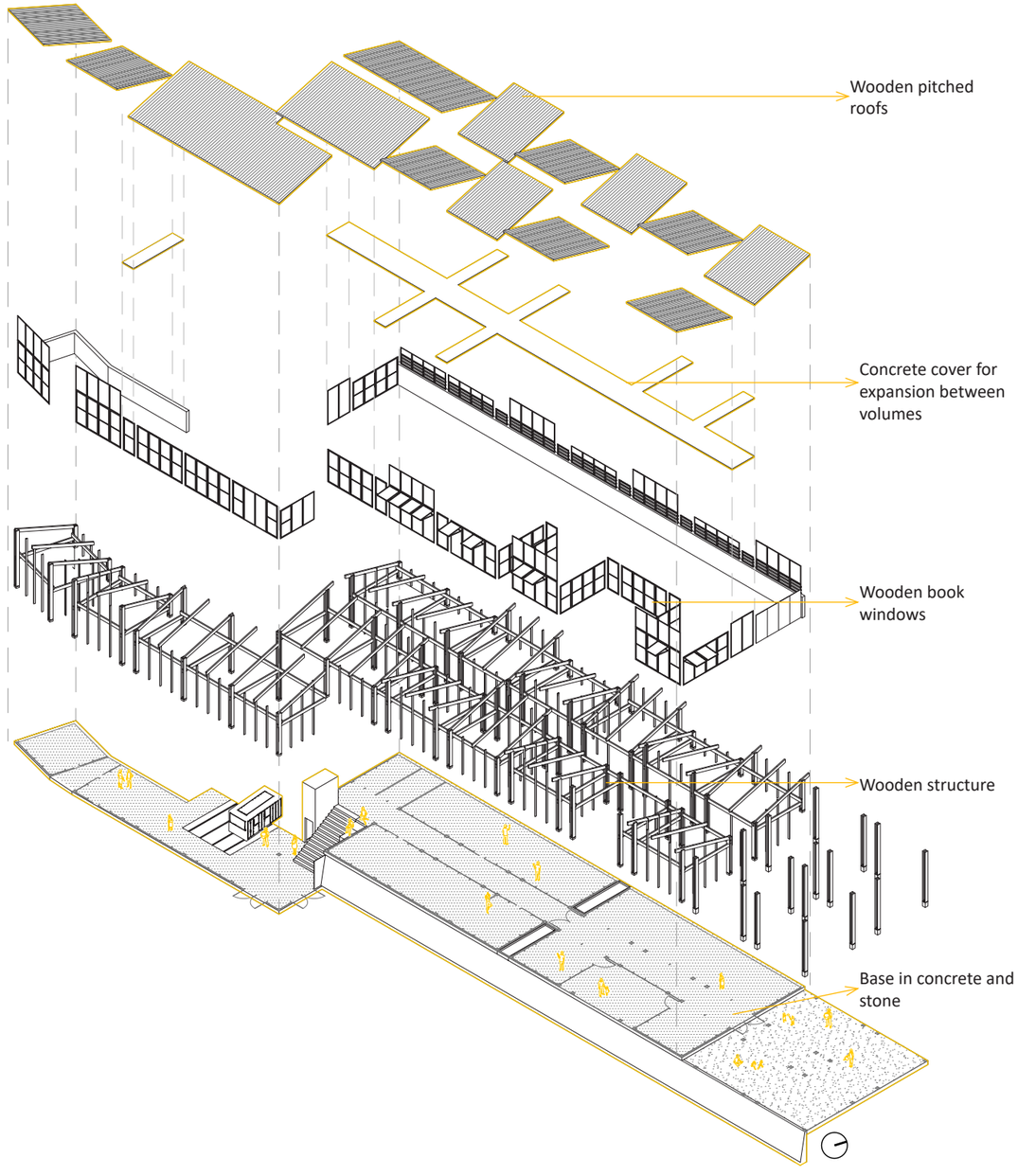
Assembling the interface



As per the earlier analysis on spatial aspect, a 5x5-meter system was chosen to be used in the stations owing to the ease in building it and flexibility of space use. The five mveters allow for 1.25-meter sub-divisions that correspond to the commercial panels available on the market. This makes the assembly easier without the need for sophisticated craftsmanship. The base size of 25 m² suffices for the technical uses such as the electromechanical components of the funicular and cable car. Should extra space be needed, it can be increased in multiples of 25 m², for example, achieving 75 m² for socializing. Based on the physical and geographic context of the Matese area, the system is based on the use of local stone, wood, and roofs with slopes. In addition to controlling light and ventilation, the sloping roofs create a formal rhythm across the landscape. These roofs have different orientations depending on their interior use, either for daylighting or reducing shadowing. In order to connect these differently sized spaces without resorting to complicated detailing, a 1.25-meter spatial expansion joint is created between these roofs along circulation routes. In the end, the nature of the project's materials and its topology provides a guarantee for complete adaptability. In light of the fact that the model settles gently on the ground, based on the requirements of landscape principles and the needs of the community, it is capable of growing or shrinking. Instead of a static form that imposes itself, it becomes an evolving form.



Isometric explosion - Station 1



Station 1

Educational Center

Models x **23** 660 m²

Height

Angle 15°

Column



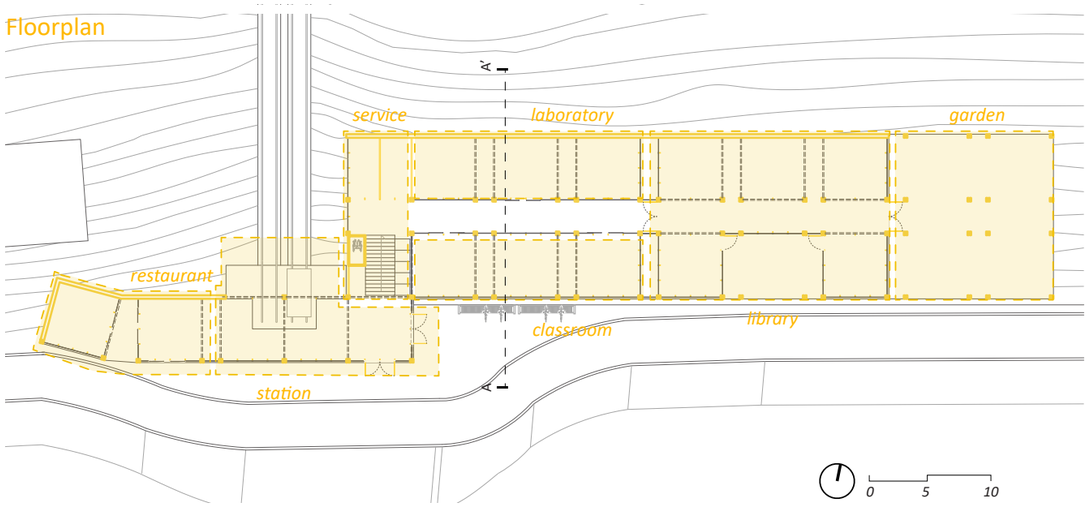
Station 1, in Piedimonte Matese, sits by the water canal crossing above the current hydroelectric plant. Initial ideas to use the power structure itself failed because automated installations needed completely unhindered access, forcing a new approach. Consequently, this alternative site sits just five minutes away by foot from parking, transport, and roads, integrating seamlessly without altering the surroundings, reviving neglected road sections, and leveraging its elevated position above town.

Since Piedimonte serves as an educational hub and central facility for nearby areas, the station spans two levels to separate group activities. The ground floor contains functional zones, the funicular boarding, and a dining space serving residents as a community gathering spot and hikers as a trail supply hub. The upper level features service spaces, labs, flexible classrooms, a community library, and a garden with a viewpoint, fulfilling local socio-educational needs within a ten-minute walk from central facilities.

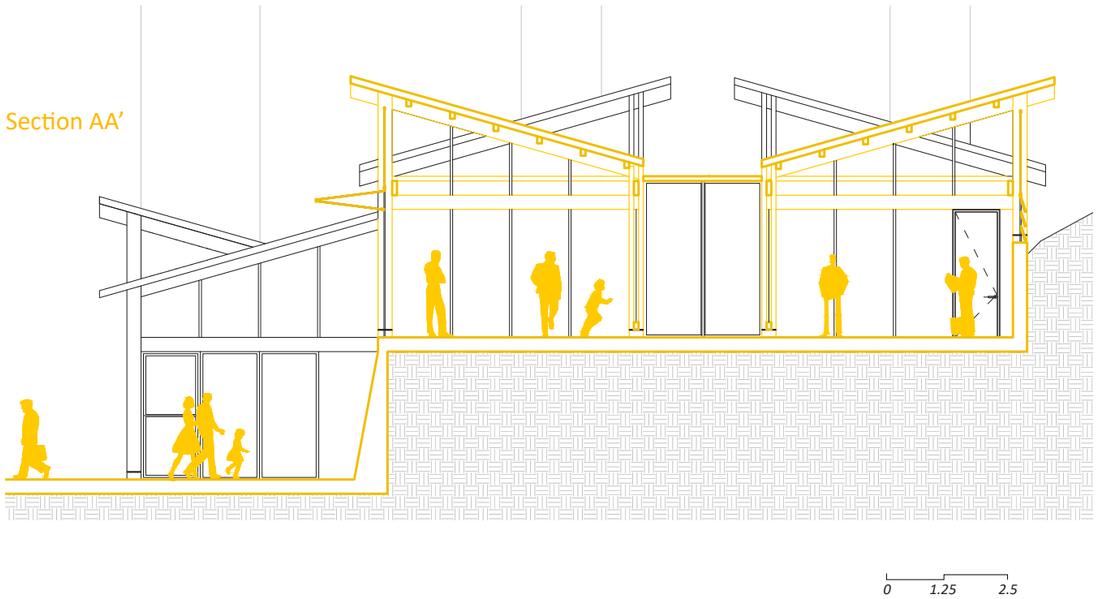
On-site



Floorplan



Section AA'



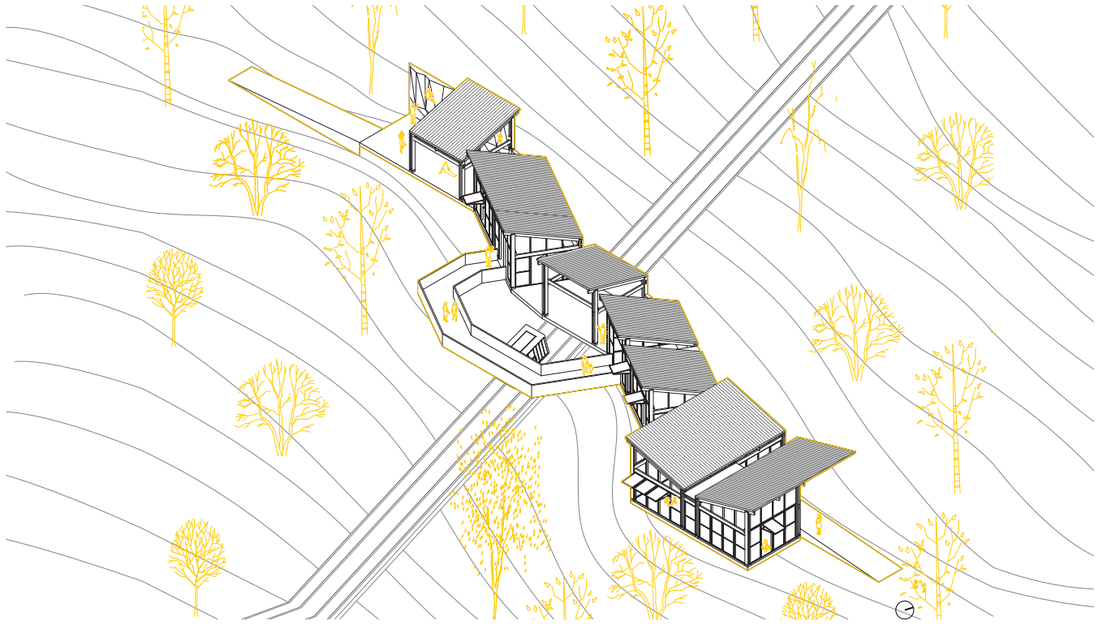
Station 2

Sports Center

Models *Height* *Angle* *Column*

x **9** 310 m²

30°



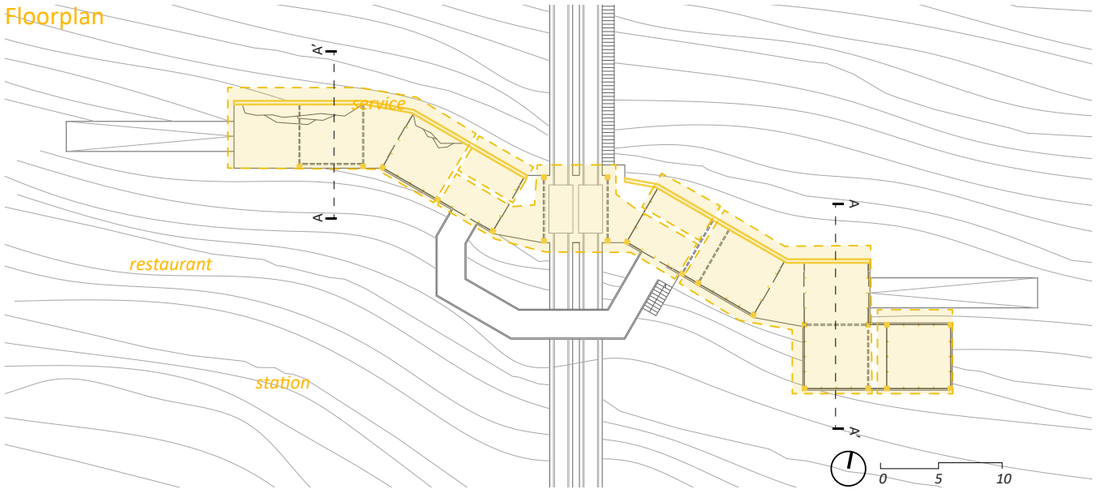
The Station 2 is situated at the junction of the main mountain paths that cross through this area. Considering the fact that this territory provides an amazing opportunity of exploring nature in depth, it was very important to set up infrastructure facilities in such a significant location. Also, considering the idea of accessibility and openness based on democracy, rather than being limited to just the funicular service, the project is situated at the junction of the main road and thus can be approached using the intercity bus line or private car.

Considering that the facility is largely recreational in nature, the design has provided various facilities around the transportation system and that continuously provides the user with views of the valley scenery. The facility will have a first aid room or pronto soccorso, rest spaces, hydration stations, and a climbing wall. Moreover, the building is designed with several pedestrian entry points to ensure that the hiking trails running across the site are continuous. This may be the station that requires the least amount of management, since its operations are easy to regulate and do not require complex control systems.

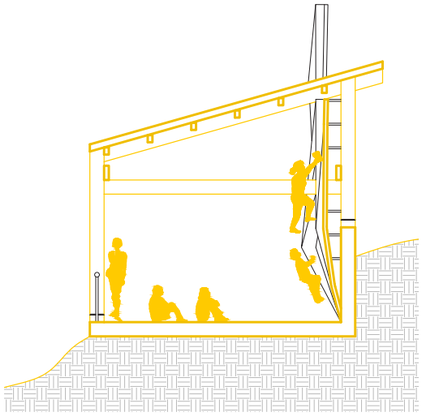
On-site



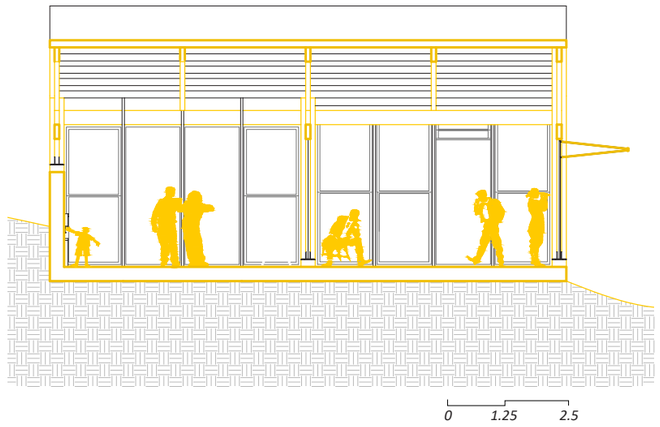
Floorplan



Section AA’



Section BB’



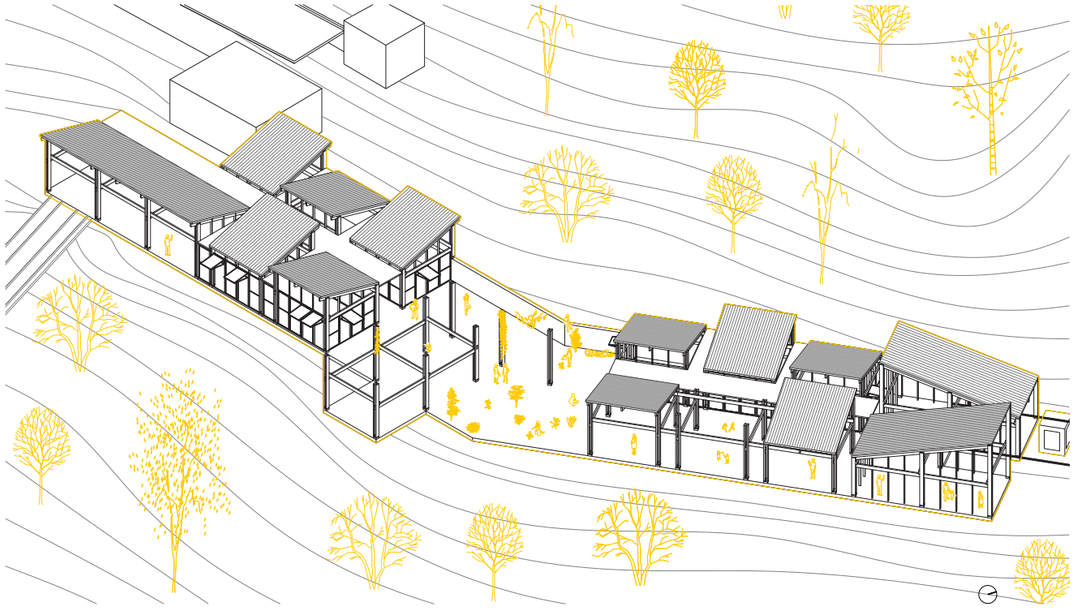
Station 3

Recreational Center

Models *Height* *Angle* *Column*

x **27** 760 m²

30°



Station 3 marks the turning point of the route: the arrival of the funicular and the start of the aerial cable system. Near Castello del Matese —an urban center with an adult population requiring local communal spaces— the architectural program adopts a social, environmental, and community focus.

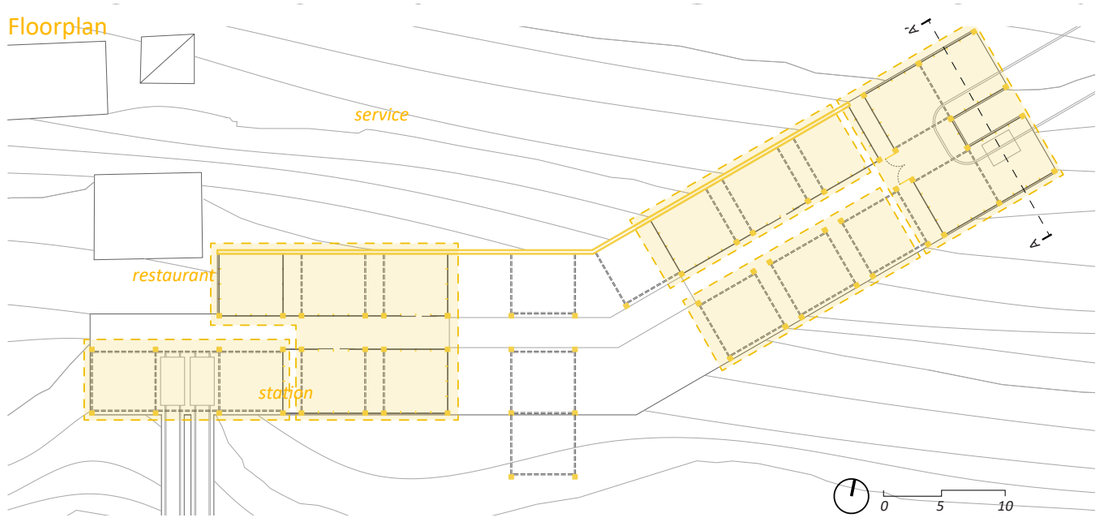
Located at the highest point, where submontane vegetation converges, the project incorporates a karst greenhouse managed directly by residents, fostering a deeper connection with local nature. True to the architectural logic, this green space can expand, contract, or become permeable based on weather and use. Nearby, flexible classrooms can combine or operate independently for community activities.

These areas connect directly to scenic viewpoints, acting as a visual reward at the summit. This spatial continuity extends interior dynamics outdoors, encouraging the social appropriation of the landscape. Structurally, the viewpoints use the project's own supports and columns—sometimes exposed, sometimes sheltered—highlighting the assembly language and allowing for future expansion with minimal material impact on the hillside.

On-site



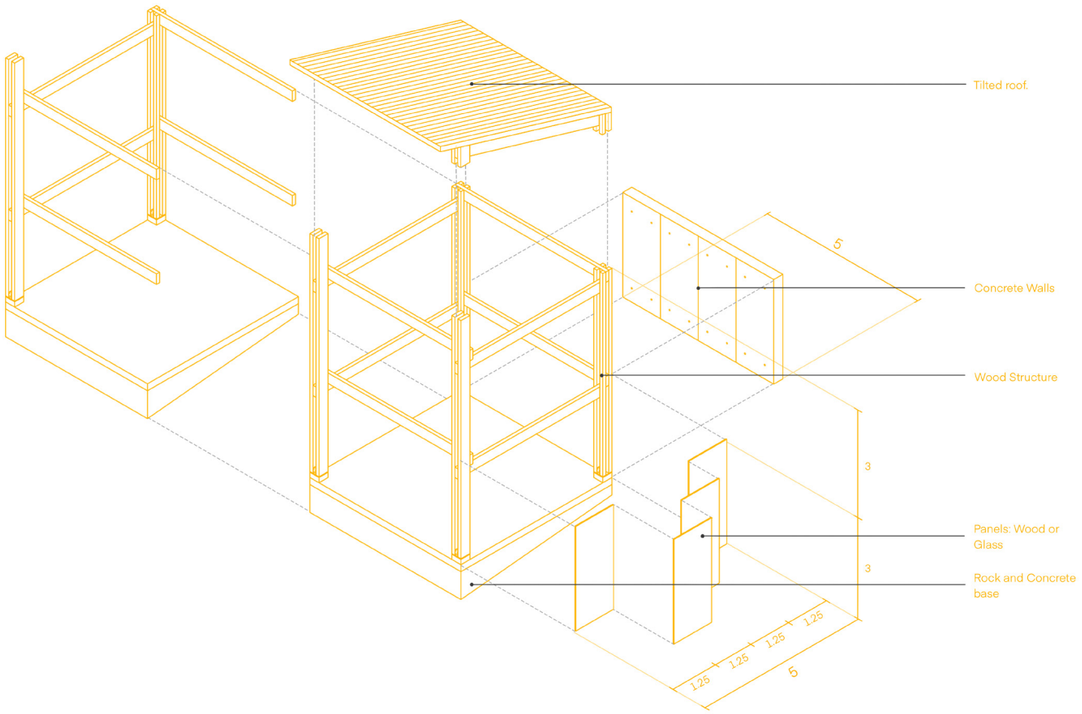
Floorplan



Section AA'



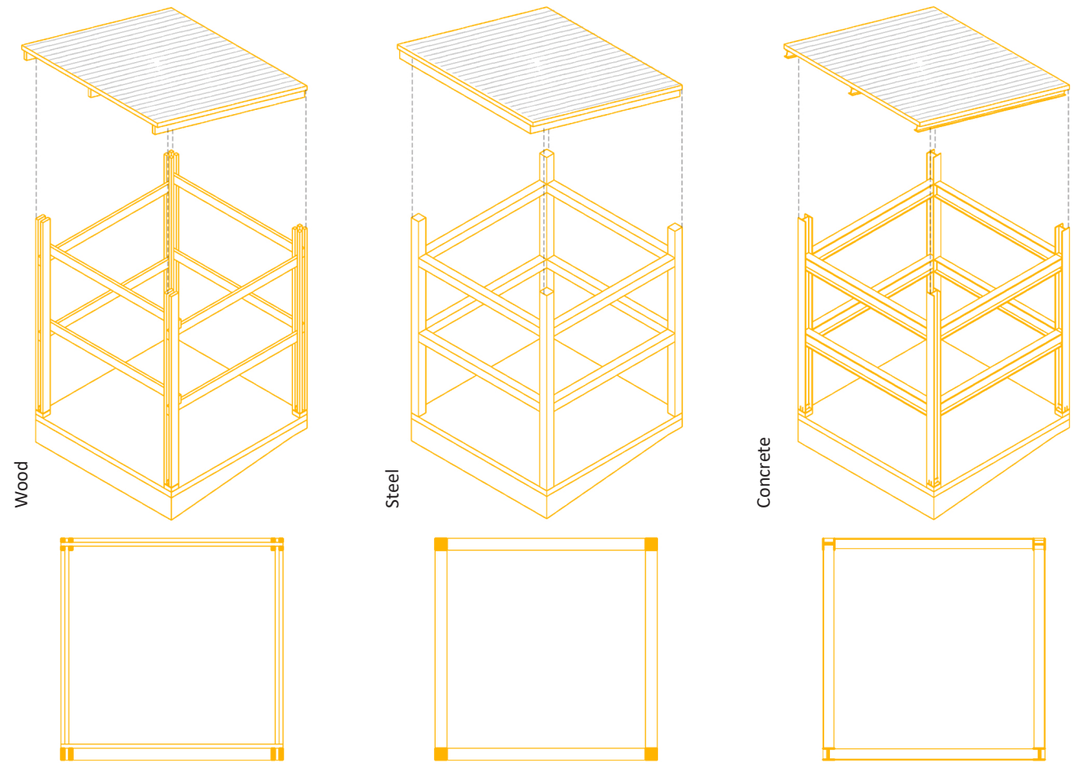
Output: the ~~module~~ model



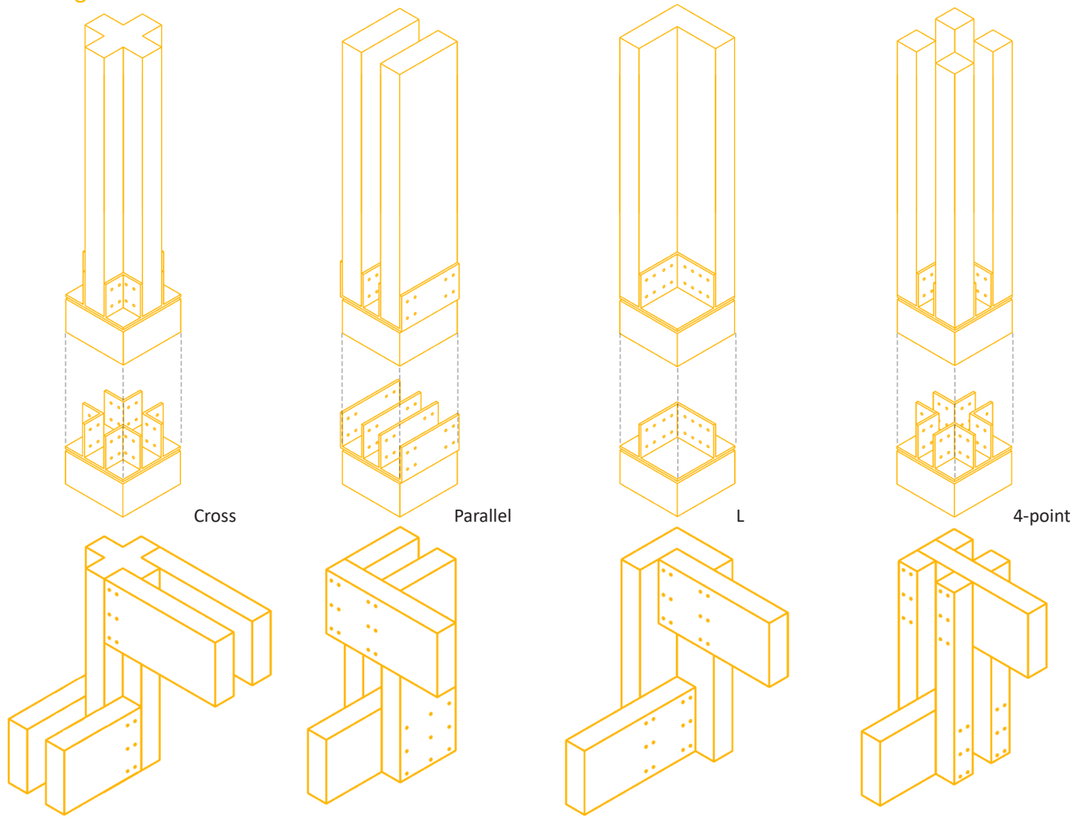
Considering the model definition described above, it is necessary to elaborate on the factors that define the model's connections in space and its principle of replicability. However, it should be stressed that the notion of the model is always open to interpretation, in whatever sense of its dimensions, morphology, or materiality. Tectonics used for the Piedimonte-Castello axis is not a standard formula but rather an immediate combination of dynamics of the context itself, with scales, materials, and geometries that are based on locally available materials and building traditions as well as population density of each station. It could be twice as big in another geographical context, use metal constructions, or take more fluid form. With all that being said, the dissection of this preliminary toolbox will be based on those parameters.

As a timber-framed system, the proposal contrasts its tectonic lightness with the stereotomic mass that characterizes the funicular's infrastructure. Similarly, this system facilitates the prefabrication of components and the introduction of variations on the base pattern, promoting active community participation in the processes of assembly, repair, or future expansion. Based on this, this initial phase of the toolbox establishes six fundamental operational criteria: the combination of materials, variations in anchors, rotations in plan, fluctuations in height, the modulation of the envelope skins, and the integration of closure panels.

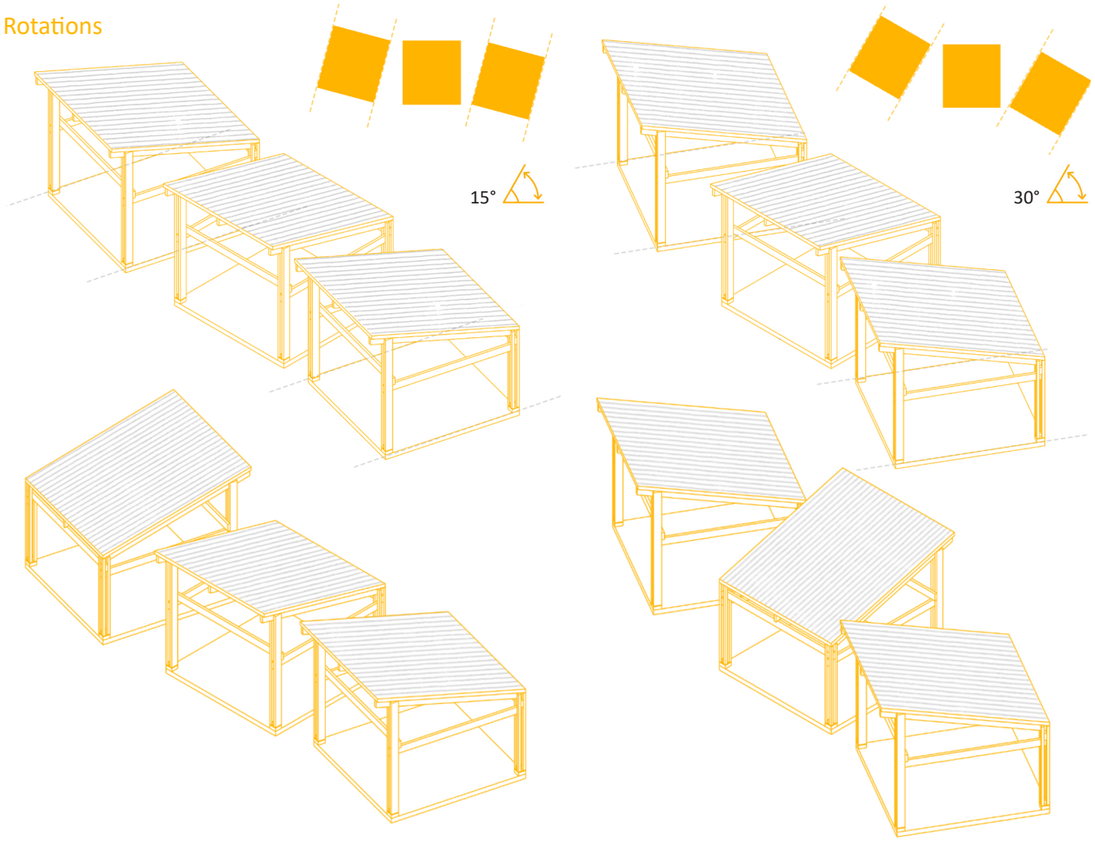
Materials



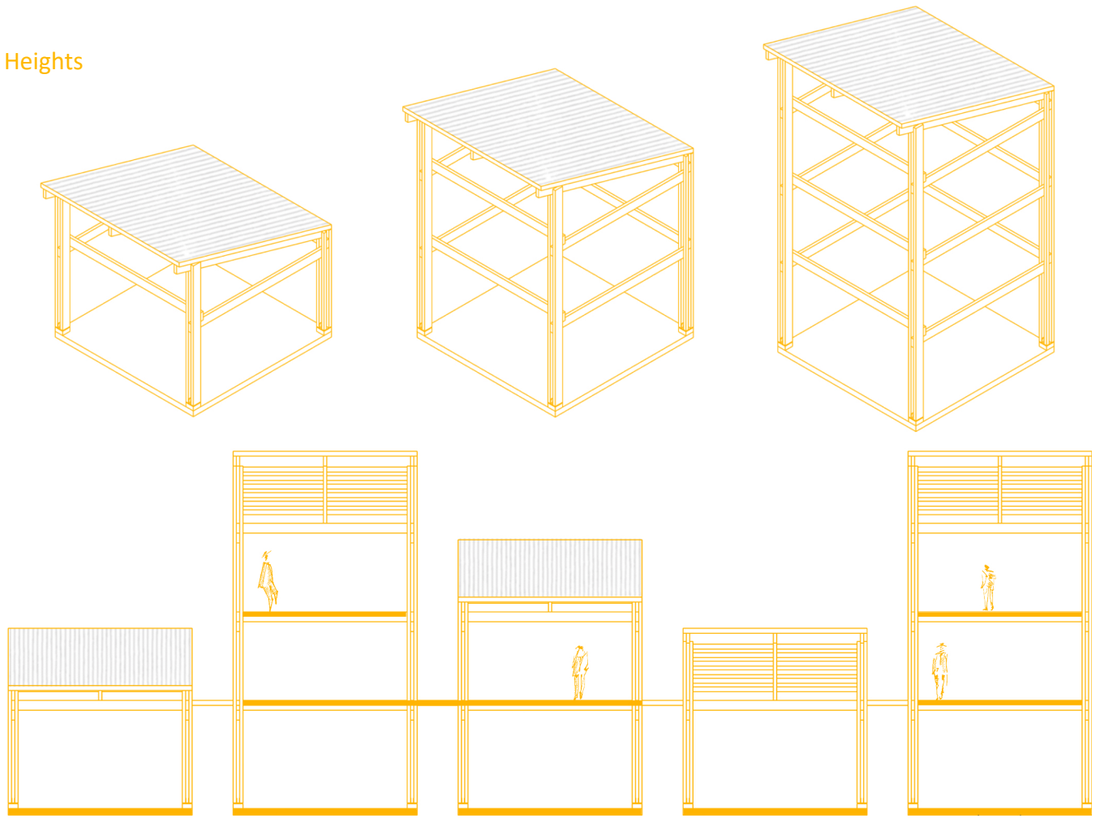
Anchorage



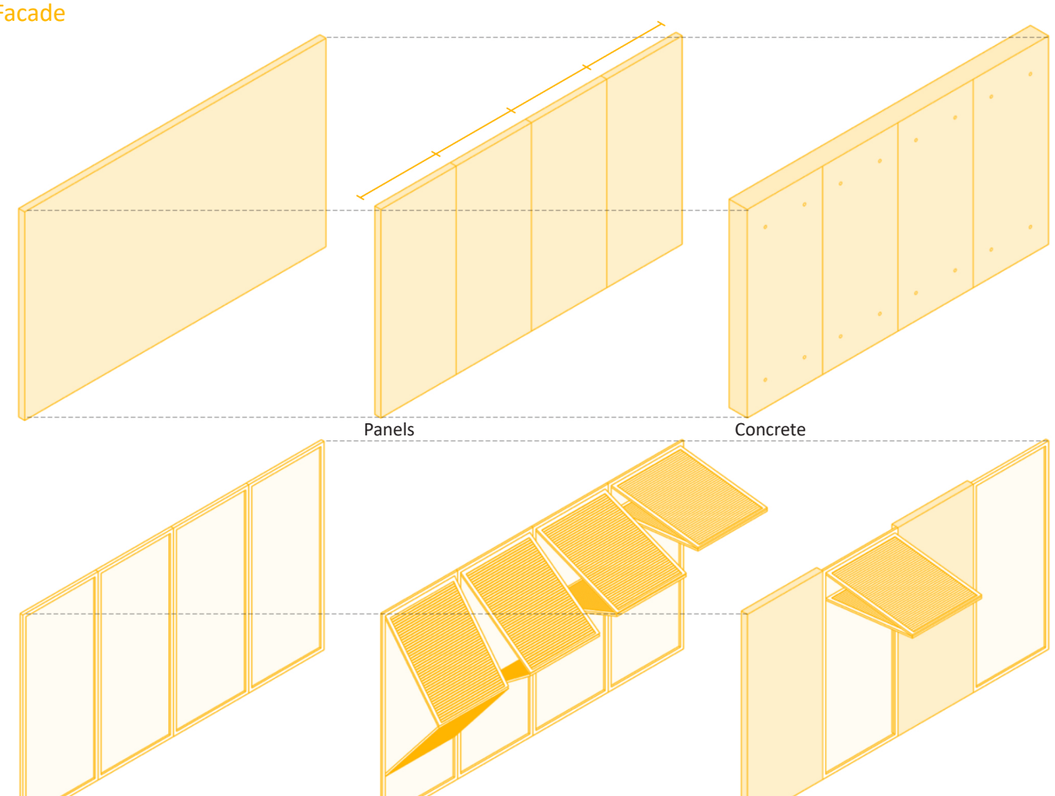
Rotations



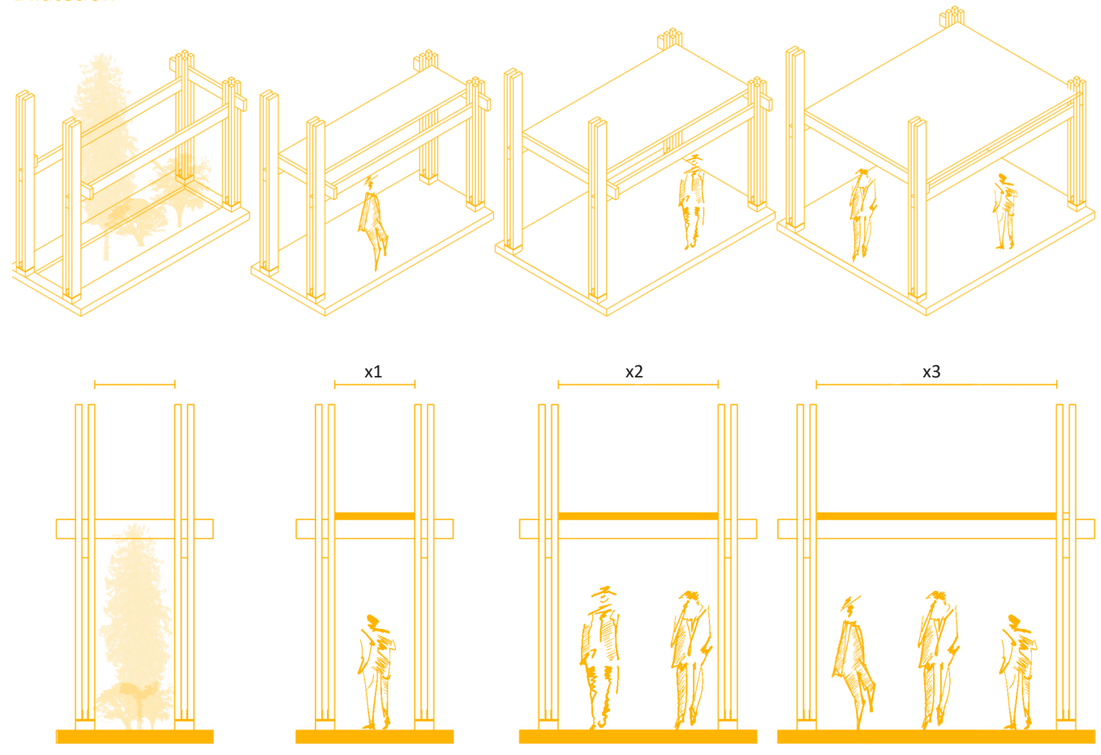
Heights



Facade



Dilatetion



The rules —guidelines—





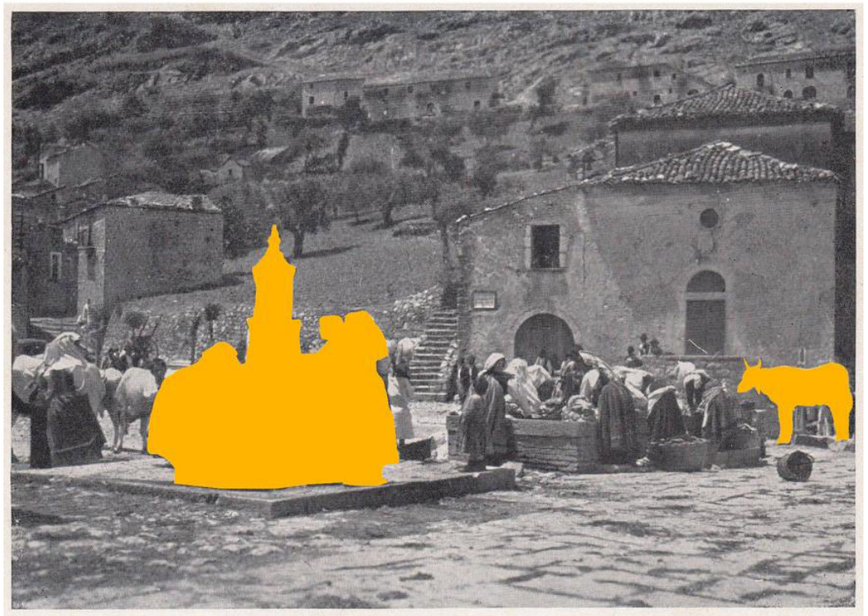


Figure N° 5

1. Maintain and preserve the landscape. Everyday life: It is essential to understand that the maintenance and protection of the biophysical environment are neither an unproductive expense nor a financial burden, but rather an ongoing structural effort that ensures the functioning of the invisible systems upon which life in our territory depends. Just as societies invest vast sums and mobilize efforts to sustain conventional gray infrastructure, we should safeguard the natural environment around us with the same determination. This involves actively protecting the common goods it provides: the water cycle, forest cover, biodiversity, and soil fertility. Likewise, it is vital to recognize that the structuring elements of the territory —both the underlying ecological dynamics and the visible features that nourish collective memory— form a social construct that must be protected from aggressive aesthetic and functional transformations.

If, within the context of a technical development project, it becomes unavoidable to intervene on a mountain slope, the priority of the proposal should not be the imposition of an alien form, but rather the preservation of the landscape's shared image and identity. This type of safeguard can be articulated through regulations and regulatory frameworks that clearly define the permissible thresholds for alteration. For example, if an architectural or infrastructure project plans to modify more than half of the land on which it is situated, its scale should be mandatorily reconsidered, redesigned, or reduced to fall below that limit —a percentage that, depending on the fragility of the local ecological matrix, could be set at even more restrictive thresholds. However, it is crucial to clarify that the existence of a regulatory code should not be the sole or primary driver for environmental protection. Caring for the land cannot depend on a legal mandate; it must become an act of daily collective responsibility. Almost like a habit in which each individual participates through small gestures or focused design decisions. In this way, the development of the territory no longer behaves as technical obligation and becomes a civic duty shared not only among permanent residents but also embraced by visitors and tourists who pass through the area.

Delegating responsibility for the environment exclusively to the public administration, the mayor's office, or the state often leads to a dangerous inertia. Government inaction allows physical and social deterioration to accumulate silently until it becomes a systemic problem that, like a snowball rolling downhill, is impossible to contain or reverse in time. Each resident of Matese is a living, irreplaceable part of the territory itself. Their daily practices, ways of living, and decisions regarding maintenance are not only what generate the greatest material impact on the local level but are also the only ones capable of fostering a true collective consciousness rooted in everyday life.

2. Circular, authentic, and holistic processes: The profound asymmetries imposed by the center-periphery dynamic on the configuration of the matrix areas must be mitigated through the implementation of circular and interdisciplinary systems that cut across the social, economic, and material spheres of the territory. It is critical to foster relational and transactional dynamics among the various urban and rural centers that make up the Matese, moving beyond the fragmented vision of traditional planning. As architect Gion Caminada[12] rightly argued, a small or isolated town rarely possesses the resources or critical mass to survive on its own within global frameworks; however, when a solid network is built between settlements that share similar topographical conditions, vulnerabilities, and opportunities, the operational foundations for true independence and territorial sovereignty are established.

This coordination requires revitalizing genuine economic processes that remain true to the region's agricultural heritage, its ecological framework, and the diversity of local expertise. Only in this way it will be possible to revive productive dynamics that seem to have vanished, while simultaneously boosting existing capabilities. From this view of complementarity, Piedimonte Matese can establish itself as a center for education and student life, while Castello affirms itself as a historic site full memory. However, this phase is not a commercial transaction; above all, it involves the mobilization of human talent, traditional knowledge, and social memory. It is essential to foster the mobility of people and ideas in order to forge identity-based bonds strong enough for the entire valley to recognize itself as a single, diverse organism, composed of distinct elements that collaborate with one another.

Finally, this holistic vision requires drastically minimizing the negative externalities, energy losses, and accumulation of waste generated by contemporary interventions. Taking as a conceptual premise the philosophy of the closed loop or *Cradle to Cradle*[13] —but liberating it from its mercantilist and reductionist approach, which is usually limited to the scale of the object or industrial product— the transformation of resources for projects of various kinds must respond to a tectonic and biological dialogue with nature and its inhabitants. This allows for the structuring of dynamics of recycling, reuse, and material utilization, grounded in a deep understanding of biophysical processes, energy flows, and the sociopolitical realities of the region. Ultimately, consolidating these circular processes does not mean isolating the Matese from the rest of the world or promoting autarchy or anarchy; it means building a territorial structure that is self-sufficient and resilient enough to enable its inhabitants to live and thrive with dignity without depending on the outside world.

12. *About isolation.*

The case study of Vrin, in Switzerland, demonstrates how cooperation among small communities can boost a region. A more open-minded view of the Matese is needed.

13. *Cradle to Cradle by William McDonough and Michael Braungart, 2002.*

The case study of Vrin, in Switzerland, demonstrates how cooperation among small communities can boost a region. A more open-minded view of the Matese is needed.





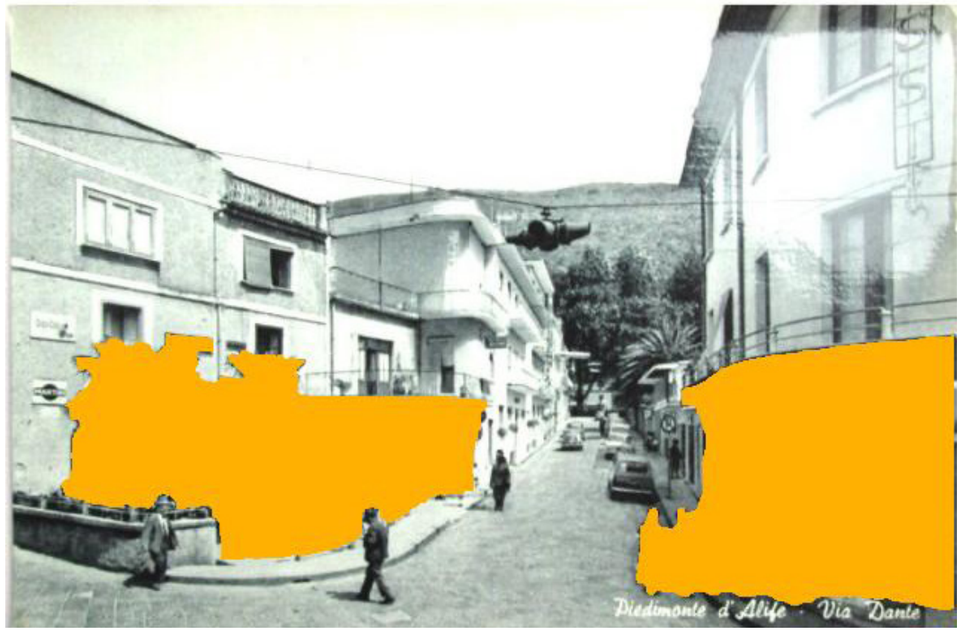


Figure N° 6

3. Autonomy and Consultation, Matese for Matese: The management of this infrastructure proposal —as well as that of future projects in the area— must be carried out, administered, and safeguarded directly by the local community. A mobility and connectivity system of this scale will inevitably divide its users into two distinct categories: permanent residents, who experience the presence of the infrastructure in their daily lives regardless of whether they use it, and occasional users, consisting mostly of visitors and tourists who use the service on an ad occasional and utilitarian basis. Consequently, it is the residents themselves who must have a voice and a decisive vote regarding the operation of the funicular and its complementary systems. In the event of financial emergencies, biophysical restrictions, unexpected weather conditions, or workforce needs, decision-making will remain in the hands of the local inhabitants.

If the community determines that during high season —summer or holidays— the transportation system should operate five days a week, but during periods of lower demand three days are sufficient, that decision must be respected. If, during the harvest season, local agricultural production requires intensifying the use of the infrastructure to move supplies and goods more efficiently and at lower costs, operational dynamics must align with that productive priority. If, in a given scenario, maintaining the cable car proves challenging, but the stations and their public spaces continue to provide a social service that is indispensable to residents' lives, the infrastructure must be adapted to prioritize its collective function.

As this project evolves and residents' relationship with the area is reshaped, it suggested the development of regulatory mechanisms and policy instruments to protect the identity, sovereignty, and organic functioning of urban centers. Given that the entire population is affected —directly or indirectly— by the implementation of a project of this magnitude, continuous citizen consultation stands as an essential tool for territorial defense and coordination. The democratic process guaranteed at the local level gives visibility to all the concerns of the valley, preventing friction and cementing harmonious coexistence among the various stakeholders. In this sphere of deliberation, it would be innovative to incorporate the symbolic and legal representation of the natural environment, ensuring that the rights of the ecosystem are heard at the management tables.

Although Matese belongs administratively to the Campania region and the Italian institutional framework, the community must build its own mechanisms for ownership and regulation where the true protagonist is the valley's biophysical and human foundation. Even though the National Strategy for Internal Areas[14] —*SNAI*— establishes valuable theoretical and methodological foundations for understanding peripheral areas, no socio-spatial ecosystem is ever exactly the same. The Matese cannot replicate generic formulas without questioning them; it must forge its own rules based on horizontal debate, civic consensus, and the internal logic of its own landscape.

14. *Strategia nazionale per le aree interne, 2012.*

Criticized primarily for its low spending capacity, bureaucratic delays, and limited effectiveness in curbing depopulation and isolation in rural municipalities.



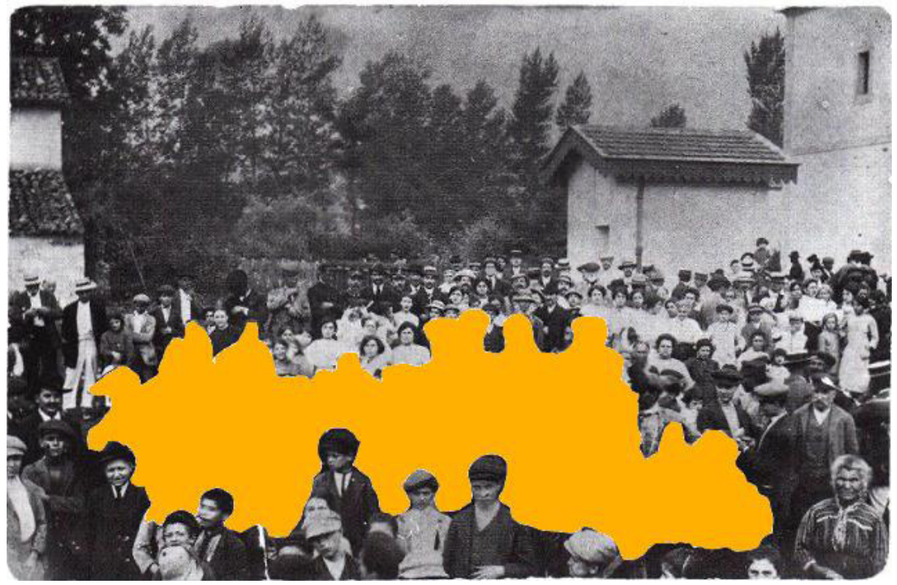


Figure N° 7

4. What Will Become of the Matese? Searching for a Niche: The contemporary conceptualization of the *aree interne* originates from a framework that perpetuates a distorted center-periphery perspective, as if inhabiting and maintaining these landscapes were a burden or an administrative obstacle for the state. This perspective has led to the implementation of generic policies that seek, through a homogenizing logic, to de-internalize these valleys and mountains. However, it is essential to ask a critical question: Has there been any discussion about the future of these places once their fragile condition has improved? Will they continue to be classified indefinitely as *internal areas*? It is likely that they will acquire a different designation once they succeed in consolidating autonomous biophysical, social, and temporal dynamics. This change in paradigm cannot be postponed; it must begin with the theoretical formulation of the project. Consequently, the concept of *support territory* is proposed: a biophysical and climatic support system for vulnerable populations and landscapes of ecological fragility.

The physical disconnection that defines inland areas promotes a dangerous conceptual and perceptual rupture regarding the functioning of the country, projecting the illusion that metropolises and urban centers could survive without these seemingly decaying environments. Territorial reality proves the opposite. It is in these marginalized geographies that the fundamental processes of the nation's cultural and identity formation take place. These valleys function as a structural pillar on the macro scale: they supply quality food, safeguard tangible and intangible heritage, and ensure the continuity of ecosystem services indispensable to the survival of the metropolises.
As we embrace this conceptual reconfiguration, we must ask ourselves: What is the future of these supporting territories? Their purpose is not to emulate the frenetic rhythms of urban capitalism, but to preserve themselves as shelters with a more measured pace of life, characterized by a deep symbiosis with nature and its cycles. It is precisely in the reaffirmation of this unique identity that the opportunity arises to cultivate —in both the literal and metaphorical senses— the productive niche.

As Gion Caminada pointed out, to build a truly competitive agricultural or productive fabric, it is essential to harness the unique characteristics of each piece of land[15]. Attempting to implement generic, mechanized, and easily replicable agriculture in complex geographies such as the Matese is not only unsustainable but also condemns the territory to unequal competition in global markets. On the contrary, committing to a highly specialized activity linked to its geographic origin facilitates the sector's economic viability and sovereignty. Chestnut harvesting, truffle cultivation, and the preservation of ancestral techniques in dairy production represent opportunities that have been overlooked for decades by conventional planning and modern techniques. Making a choice to focus on niche markets means unlocking unexplored possibilities, transforming the apparent condition of isolation into a highly valuable differentiating asset.

15. *About food.*

Thus, food —which involves agriculture and local sales cycles— becomes a means of gaining international recognit.





Figure N° 8

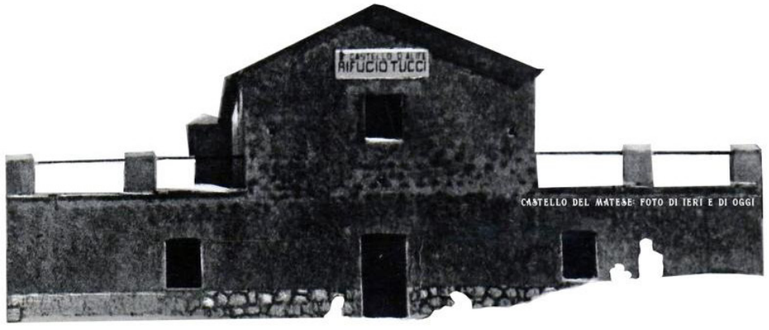


Figure N° 9

5. Well-being, culture, and knowledge: It is essential to prioritize the integral well-being of all beings that share this territory: the human community, flora, and fauna. To achieve this, we must decisively distance ourselves from the notion of technical efficiency and relentless speed that has characterized the development of contemporary infrastructure, redirecting our course toward a pursuit of wellness based on rest, pause, and the enjoyment of free time. This conception of existence should not be understood as a privilege exclusive to our species, but rather as a principle that must be extended to the natural world; it involves granting biological pauses to the ecosystem when soil fragility or seasonal cycles require it, allowing flora and fauna to develop and regenerate around us in a state of balance.

The most important aspect to consider regarding well-being resides in its own capacity to generate, nourish and preserve the cultural identity of a specific community. The desire to improve quality of life, combined with awareness of the environment that molds most of our habits and behaviors, provides the required time and mental —also physical— space needed for distinctive traditions, culinary knowledge, local narratives and practices to blossom. From this perspective, the implementation of the funicular and cable car system between Piedimonte and Castello should not be limited to solving a purely functional transportation problem; it must serve as a catalyst for wellness and a public platform designed to continue cultivating culture through the horizontal exchange of experiences and knowledge among the different generations of the Matese region.

The power of this vision lies in the fact that this knowledge and living memory are neither abstractions nor imposed norms of citizenship but are intrinsically embedded in the daily lives of the inhabitants. They manifest as traditional crafts, vernacular construction techniques, and forgotten trades that —far from being relics of the past— hold extraordinary economic potential for the productive revitalization of the region. Within this new network of activities, artisanal skills begin to intertwine organically with agricultural management systems, botanical knowledge, and the preservation of the landscape's historical memory. Thus, infrastructure ceases to be an instrument of accelerated consumption and becomes a place of pause, an open classroom where time for rest and an appreciation of the territory converge to regenerate the civic and biological life of the Matese communities.



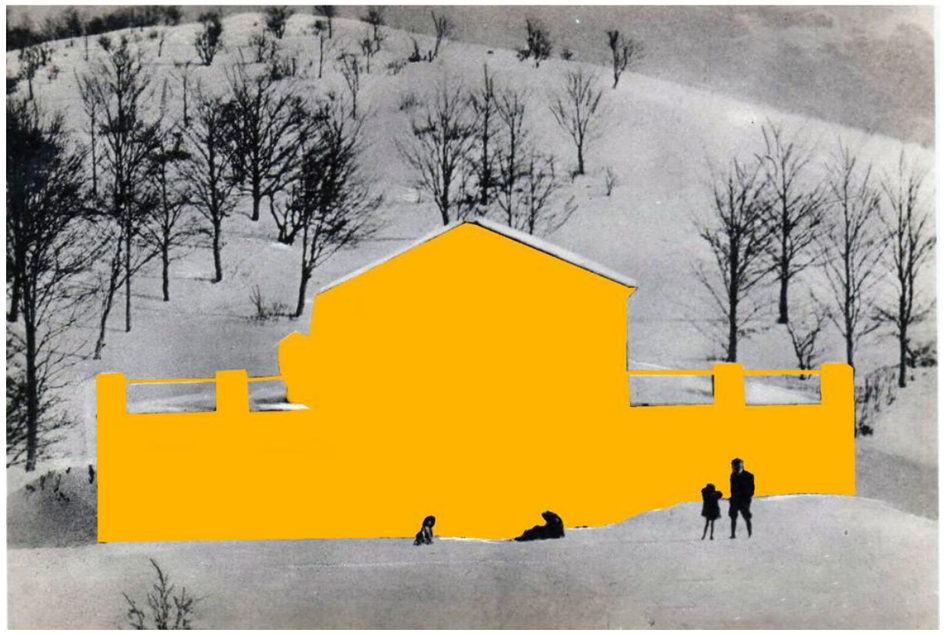


Figure N° 10

6. Regulating Tourism: Although tourism is often presented as an attractive and indispensable activity for the economic rehabilitation and revitalization of remote areas, the reality on the ground shows that it brings with it profound structural problems[16]: gentrification, mass displacement, vulnerability to seasonality, and the promotion of dynamics centered on hypocrisy and market stereotypes. Contemporary visitors often demand an unsustainable contradiction: they expect to find idyllic, unchanging villages frozen in time, yet at the same time demand that these villages be traversed by hypermodern infrastructure geared toward fast consumption. Consequently, instead of allocating resources to the consolidation of community public spaces and facilities for residents, external investment is often channeled into the massive construction of large-scale hotels, asphalt parking lots, and ephemeral attractions that reinforce dependence on foreign financial flows.

It is important to note that tourism itself is not inherently negative; the mistake arises when it is understood as the driving force, the means, or the sole purpose of a territorial project. If the project proposal for Matese had been conceived from the outset with the goal of building a hotel complex, the result would have been socially and ecologically unsustainable. However, when the intervention is structured around sensitive and necessary infrastructure —such as funicular stations and a cable transport system designed for the community's daily life— the eventual flow of visitors that increases the demand for accommodation ceases to be a threat. Tourism then becomes a secondary and organic outcome of a well-executed rehabilitation, provided it is grounded in mutual hospitality among the parties involved and not in the commodification of the landscape turned into a spectacle.

However, even under this integrated model, the arrival of visitors requires strict regulatory measures to control permitted activities, regulate local prices against speculation, monitor buildings intended exclusively for seasonal leisure, and protect fragile ecosystems. These regulatory tools are necessary in order to prevent territorial development from being dictated by the interests and whims of outsiders. The community of Matese should constantly remember: the traveler is always welcome as a guest, but their presence must never take priority over the needs, dignity, and well-being of the local population. This new relationship with tourism restores spatial justice, placing all the actors involved on a common ground of mutual respect and coexistence.

16. *About tourism.*

Let's recap the risky incident in Innsbruck involving the cable and the funicular.

7. Make tomorrow possible. Be flexible: Perhaps one of the greatest disciplinary flaws of architects is the low tolerance for uncertainty; we persist in an obsessive attempt to control every variable around us. Sometimes we do this for financial reasons, trying to guarantee economic viability to investors and developers; at other times, seeking to specify, with millimeter-level precision, the quantities of work and weight balances during the construction process. However, the most harmful tendency of all is the desire to program and determine people's behaviors, reactions, and experiences in relation to the designed space. While architecture has the transformative capacity to enhance human life, reshape habits, and configure daily rhythms, this change should not be imposed with formal constraints or functional requirements, but rather through the community's free choice. Architects' role as designers is to provide the spatial tools, flexibility, and physical support so that this desire for spontaneous transformation can grow organically.

We must allow space for tomorrow to unfold without restrictions, avoiding becoming trapped in a static and immutable vision of the present. This principle of openness applies equally to human dynamics and to the processes of the natural world. We must allow the Matese of the future to emerge free from obstacles, prejudices, and imposed urban planning dictates, positioning architecture as an example of this open design approach.

From this perspective, the conception of the funicular and the cable transport system as mobility infrastructure serves as the project's initial driving force; however, it is entirely possible that, over the years, the system will evolve to become the region's most significant agricultural transport network, or that the stations will be repurposed to establish themselves as the valley's primary cultural and social centers. We must not cling dogmatically to a rigid functional program when metabolic and community dynamics indicate the need to move toward opposite directions.

With regard to the biophysical environment, it is essential to allow nature to express itself, sprout, and occupy the space according to its own logic, without resorting to logging, extraction, or the aggressive sealing of the soil, while always ensuring the integrity and safety of the system's users. The goal is to allow biological cycles to flow and, to the degree possible, to ensure that the Matese community flows in harmony with them.

Finally, another —yet important— sustainable consideration emerges that takes on significance in this contemplation of the future: tomorrow is not built on a tabula rasa or a clean slate; tomorrow is supported, enriched and grounded in the continuity and respect of the present. In architectural and territorial terms, this implies designing and thinking from a deep understanding of what already lies in our views: the built heritage, biological flows, the wishes of the inhabitants, the memories and scars of the landscape, and the logic of traditional agriculture. If we manage to connect with the true essence of the place and respect its tectonic and historical language —which already contains the guidelines for its own transformation— what lies ahead is not a rigid dogma, but rather an opening toward a prosperous, resilient, and adaptive Matese.



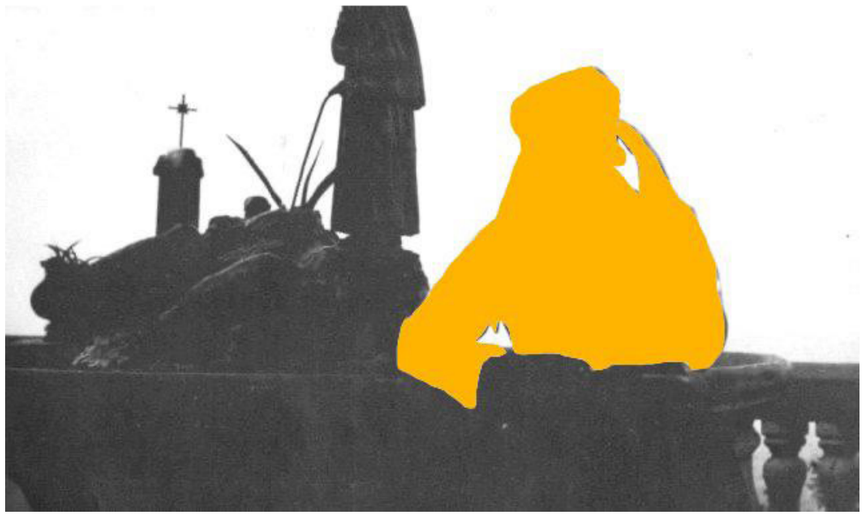


Figure N° 11

8. Getting to Know Our Allies: To ensure the long-term viability of a territorial intervention, it is vital to recognize and map the multiplicity of potential that surrounds the region, whether human, political, or naturally derived. This approach requires learning to coordinate collective efforts, with a clear understanding of both the capabilities and the inherent limitations of each actor in the system. This approach is strengthened when linked to the concept of circular systems, a paradigm that seeks to align closely with geography and its metabolic components to close cycles of matter, energy, and knowledge.

First, with regard to human partners, the participation of local communities must be ensured from the conceptual development of the project through to its final stages of maintenance and management. In this context, the Villard Seminar served as a crucial platform for initiating that first dialogue with the Matese, identifying the population's desires, needs, and aspirations. Consequently, the hiring of labor, the assignment of specialized tasks, and technical training programs must stem directly from the local communities. Often, centralist inertia leads to seeking professionals and consultants in distant metropolises, under the misconception that qualified knowledge resides only at the center, ignoring the fact that just a few steps away there are residents with deep local knowledge capable of providing context-specific solutions.

In the political and institutional sphere, the project has its origins in an economic incentive from the European Union aimed at economic recovery following the pandemic crisis. Public administration thus emerges as a strategic ally not only for initial financial viability but also as a permanent instrument serving the well-being of the community. An illustrative example of this collaboration can be found in the Swiss community of Vrin, where —following the implementation of multiple local-scale interventions led by Gion Caminada— such as housing, shelters, and basic infrastructure—the community promoted regulations to protect the landscape and vernacular architecture[17]. Some laws emerged as entirely new frameworks, while others were adopted as regulatory appendices; however, all shared the common purpose of regulating the transformation of the village. The aim is to take advantage of existing legislative instruments and adapt those that require it through deliberative processes of participatory governance.

Finally, the biophysical environment is the most decisive ally, acting as the primary regulator of the Matese landscape. When working with the topography, respecting the contours and shapes of the slopes and channeling water —a defining feature of the karst landscape— without interfering with ecological and invisible cycles is essential for the smooth implementation and development of any upcoming rehabilitation plan.

17. *About vernacular architecture.*

We must not get caught up in the spectacle. Rediscovering and preserving the essentials of life in rural areas is the path to recovery.

Additionally, highlighting the identity of the place by promoting the use of local materials is vital; in the case of the funicular and cable car system: stone, wood, and traditional masonry were used to strengthen socio-environmental cohesion. Living and building in constant exchange with the landscape represents the strongest expression of commitment to Matese. However, recognizing operational limits is essential: people need time to rest and recharge; regulations must not be manipulated for individual gain; and nature dictates the unquestionable limits of human intervention and extraction, reminding us that we must build with what the land provides, giving back resources whenever is possible, and respecting the fragility and logics of the ecosystem.





Figure N° 12

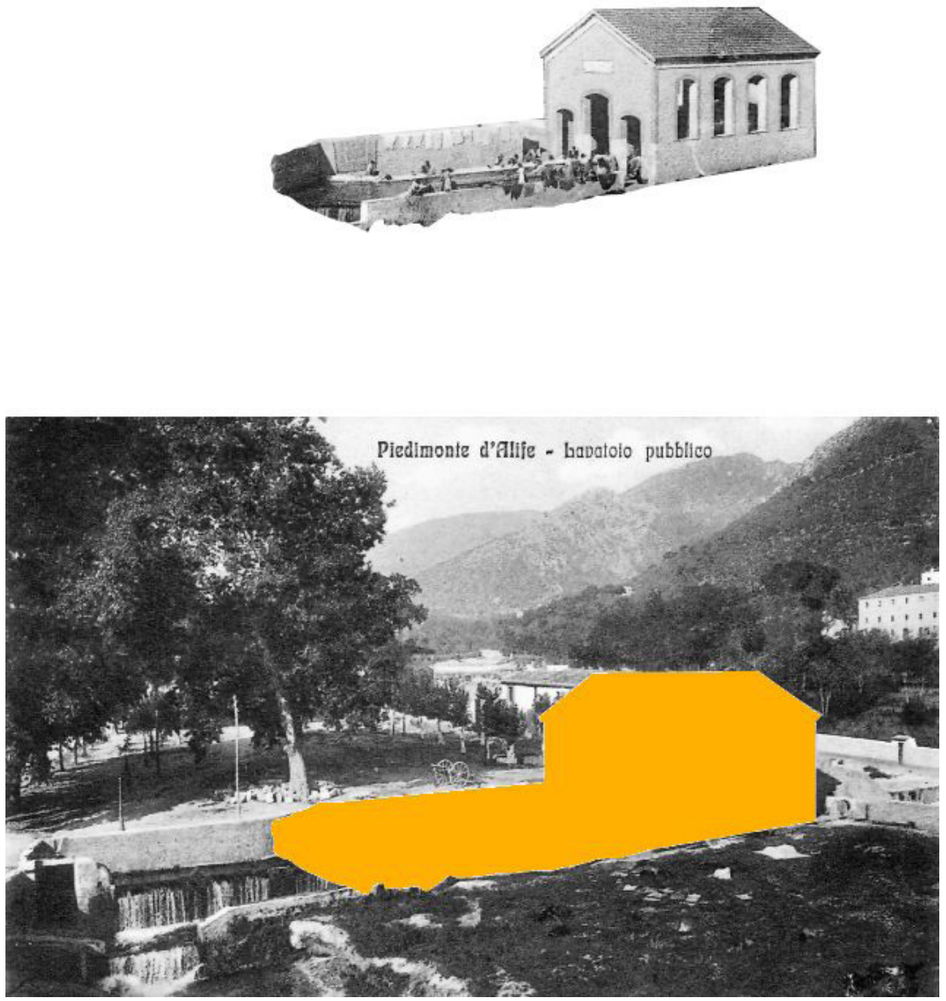


Figure N° 13

,**9. The Model:** The proposed design model should not be viewed as a definitive aesthetic goal, but rather as an open-ended tool created to facilitate the progressive construction of the proposal. It is a versatile tool that adapts to the contours, follows the folds of the existing vegetation, and responds consciously to the social and ecological demands of the territory. It represents one of many possibilities of seeking place in the environment in a conscious, rigorous, and —why not?— playful manner. It functions as a compositional game of operational design that, through variations and reconfigurations of its assembly rules, generates an inexhaustible range of versions on a single theme. Each station of the funicular and aerial cableway could have taken on a different configuration and will most likely change over time, since reversibility and adaptability are an integral part of its tectonic logic. The very structural and material lightness with which it sits on the terrain allows it to be disarmed or relocated without leaving scars on the biophysical matrix.

Consequently, even though the model establishes certain geometric guidelines, proportions, and assembly rules to guide construction, it should be understood as a catalyst for the dynamics of the Matese and not as a constraint or an imposed master plan. What is truly significant about the model lies not in the rigidity of its physical form, but in its conceptual scope: the ability to articulate a spatial system with sufficient flexibility to transform, reprogram, or gradually dissolve, opening up the project's framework so that the community can actively participate in the renewal of its own geography.

A future model could, for example, adjust its dimensions to an eight-by-four-meter in order to facilitate slimmer or taller structures; or it could gradually move away from the material notion of a model to establish itself as a compositional guide without fixing a specific materiality. In this transitional scenario, the apparent form and specific materiality take a back seat, yielding priority to residents' ability to appropriate the space or to the potential for native vegetation to colonize it, thereby creating new biotopes and havens for biodiversity.
It is precisely these tools —perceived as basic, malleable, and low-impact— that succeed in establishing deeper emotional and functional connections with the inhabitants and their daily life. By freeing itself from the obsessiveness of permanence and formal control, design becomes a pedagogical and participatory medium, capable of evolving side by side with the society that inhabits it and the nature that sustains it.

10. Accessibility Above All: Ensuring universal accessibility within an architectural design is, perhaps, the most subtle, generous, and powerful gesture of welcome that a space can offer to human diversity. The ability to experience freedom, comfort, and full autonomy within an environment free of physical barriers and spatial friction exponentially expands the body's experiential perception of architecture[18]. For this reason, the Matese project integrates a multiscale concept of accessibility throughout its entire infrastructure, operating simultaneously from regional connectivity down to tectonic detail.

On a macro scale, access to the stations is ensured by an intermodal network that links regional public transportation, private mobility, and pedestrian paths. Internally, the interior design addresses topographic variations through gentle gradients, continuous ramps with standard slopes, mechanized devices for overcoming elevation changes, and routes free of perceptual or mechanical obstacles. The aim is therefore to ensure inclusive mobility for both people with reduced mobility and users with diverse travel needs.

However, the project would not be accessible if it didn´t go beyond the notion of physical mobility to also explore sensory and cognitive accessibility. The selection of the material palette —characterized by the use of stone, wood, and direct contact with native vegetation— helps mitigate sensory overstimulation, creating calm environments that prevent neurological overload in people with neurodevelopmental conditions or tactile and visual hypersensitivity. Similarly, the intimate scale and strategic positioning of the structural models allow for the creation of spaces for refuge, rest, and privacy. These micro-spaces of shelter enhance feelings of autonomy, psychological security, and a sense of ownership for each user.
This approach takes on significant meaning within the region's geographical context. One of the greatest historical challenges facing the Matese region lies in the physical fragmentation and lack of community connections among its municipalities—a phenomenon largely caused by the absence of accessible infrastructure that facilitates mutual interaction. The integrated system of the funicular and aerial cable car was conceived with the explicit aim of bridging this territorial divide, sparking new relational flows that strengthen the process of regional revitalization.

Even so, it is imperative to remember that this commitment to inclusion extends down to the most detailed level of architecture. The pursuit of accessibility should not be an afterthought or a mechanized prosthesis applied retroactively to a rigid geometry; it must be conceived from the very first conceptual decisions made on the ground. Designing inclusively implies recognizing that architecture achieves its highest degree of rigor when it is capable of accommodating all people, making hospitality an ethical and compositional imperative.

18. *Phenomenology of Perception by Maurice Merleau-Ponty,2002.*

In his work, the notion of access is one of the bodily stimuli that best enable us to understand the phenomenon of architecture.





Figure N° 14



Figure N° 15

11. Flows, Schedules, and Uses: The most significant design determinants of the proposal do not result from abstract formal speculations, but rather from a careful mapping of the metabolic flows and travel patterns that characterize the residents of Matese. Aspects such as the sizing of areas, the definition of functional programs, and the versatility of the mechanical components of the funicular and aerial cable are directly related to fluctuations in usage. The architecture is conceived as an organism in constant flux, precisely because territorial dynamics lack any static or predictable characteristics. In the daily evolution of the karst landscape, each time frame has its own unique rhythm on transportation, thus altering both passenger volume and the fundamental purpose of their journeys.

During the early morning, the infrastructure absorbs the pressure of commuter traffic from students, workers, and producers who need to arrive on time to connect with the centers of activity in Piedimonte and its surroundings. However, as the day progresses and noon approaches, the absence of productive mobility gives way to activities related to leisure, tourism, and community gatherings. Later, as the afternoon sets in —a time when pedestrian traffic reaches its lowest density— the surplus capacity of train cars and cabs is operationally reconfigured for the transport of goods, agricultural supplies, construction materials, and large-volume logistics items whose distribution is difficult via conventional routes.

However, these temporal patterns should not be assumed to be immutable either. Unforeseen factors, such as seasonal migration, cultural events, or a gradual diaspora of residents toward the wilderness, could drastically alter demand patterns, transforming the ascent to Castello into the central hub of the regional mobility network. It is a priority to understand population shifts in real time, aligning spatial management with the principles of local autonomy and participatory consultation.

Based on the monitoring of these movements —whether on an internal scale between villages or of an external nature toward the wider region— there arises a need to implement adaptive scheduling. The synchronization of operating hours, trip frequencies, and mixed uses of the infrastructure ensures not only the economic viability of the system but also its full alignment with the changing dynamics of the environment. Understanding these behavioral patterns goes beyond mere *last-minute flexibility* —understood as an improvised fix— and involves developing a predictive framework capable of deciphering the inherent potential of daily life in Matese, transforming time and movement into design elements.

19. *Politics and English Language by George Orwell, 1974.*

Orwell believed that the decline of language could be prevented if people used a direct and simple style. In his view, vague words serve to deceive citizens and justify violent actions without remorse. In this way, he demonstrated that confusing and careless language corrupts political thought and obscures the truth.

12. One Last Rule: In 1946, British writer George Orwell formulated six fundamental rules for writing in his famous essay *Politics and the English Language*, published in the magazine *Horizon*[19]. The first five rules offered pragmatic guidelines focused on cleaning up language of any empty pretensions or rhetorical mannerisms: they were direct, concise statements open to each author's critical interpretation. However, the sixth rule stood out uniquely for incorporating an explicit stance of opposition from the principles Orwell had just presented in the magazine. This rule declared: "*Break any of these rules sooner than say anything outright barbarous*".

That seemingly contradictory gesture was, essentially, a welcoming action to the future, acknowledging that even the most accurate diagnoses can lose their critical validity due to social transformations, institutional rigidity, or the evolution of language itself. When applied to practice, a creator who is too rigid runs the risk of becoming trapped in the blind adherence to predetermined norms, to the point of stripping the process of its authenticity and transforming it into a sterile mechanism devoid of purpose.

This lesson in methodological skepticism is fully applicable to the exercise of territorial intervention in the Matese region. For this reason, the final guideline that frames this proposal gives the absolute and necessary freedom to disobey any of the criteria or strategies previously outlined if their literal application happened to compromise autonomy, community well-being, or the integrity of the landscape and its invisible biophysical systems. Each of the spatial, normative, or technical premises formulated throughout this work can, and should be, questioned or refuted; there is no better filter for evaluating the relevance of an idea than the flow of time itself; and all the inevitable changes.

The years will serve as the true judges of the transformations the region will experience. It is essential to remember that this research exercise remains entirely speculative and academic, built upon a working hypothesis among multiple possible trajectories for the territory. Therefore, the proposal does not seek to present itself as a dogmatic truth, but rather as an invitation to doubt constantly and question what is presented as established or coherent. In the most favorable scenario, the infrastructural project will achieve its goals through planned strategies and thought through designs; however, uncertainty —a condition intrinsic both to human nature and to the landscape's own dynamics— always retains the capacity to reshape reality in unespected ways.





Figure N° 16

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Notes

[1]Any graphic element not cited or referenced is my own work.

[2]The photos used in *the rules* section are taken from *Fotod'epoca Piedimonte Matese. The photos capture remnants of what the Matese once was.*

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