

The background of the entire page is a detailed topographic map. The map features a complex network of thin, light gray contour lines that create a sense of depth and terrain. The lines are more densely packed in some areas, indicating steeper slopes, and more widely spaced in others, indicating flatter ground. The overall effect is a textured, monochromatic landscape that serves as a subtle yet prominent backdrop for the text.

WHISPERING SCAPES

A PROJECT FOR 2026
OLYMPIC GAMES IN BORMIO

Politecnico di Milano
Architecture, Built Environment, Interiors

Scuola di Architettura Urbanistica Ingegneria delle Costruzioni

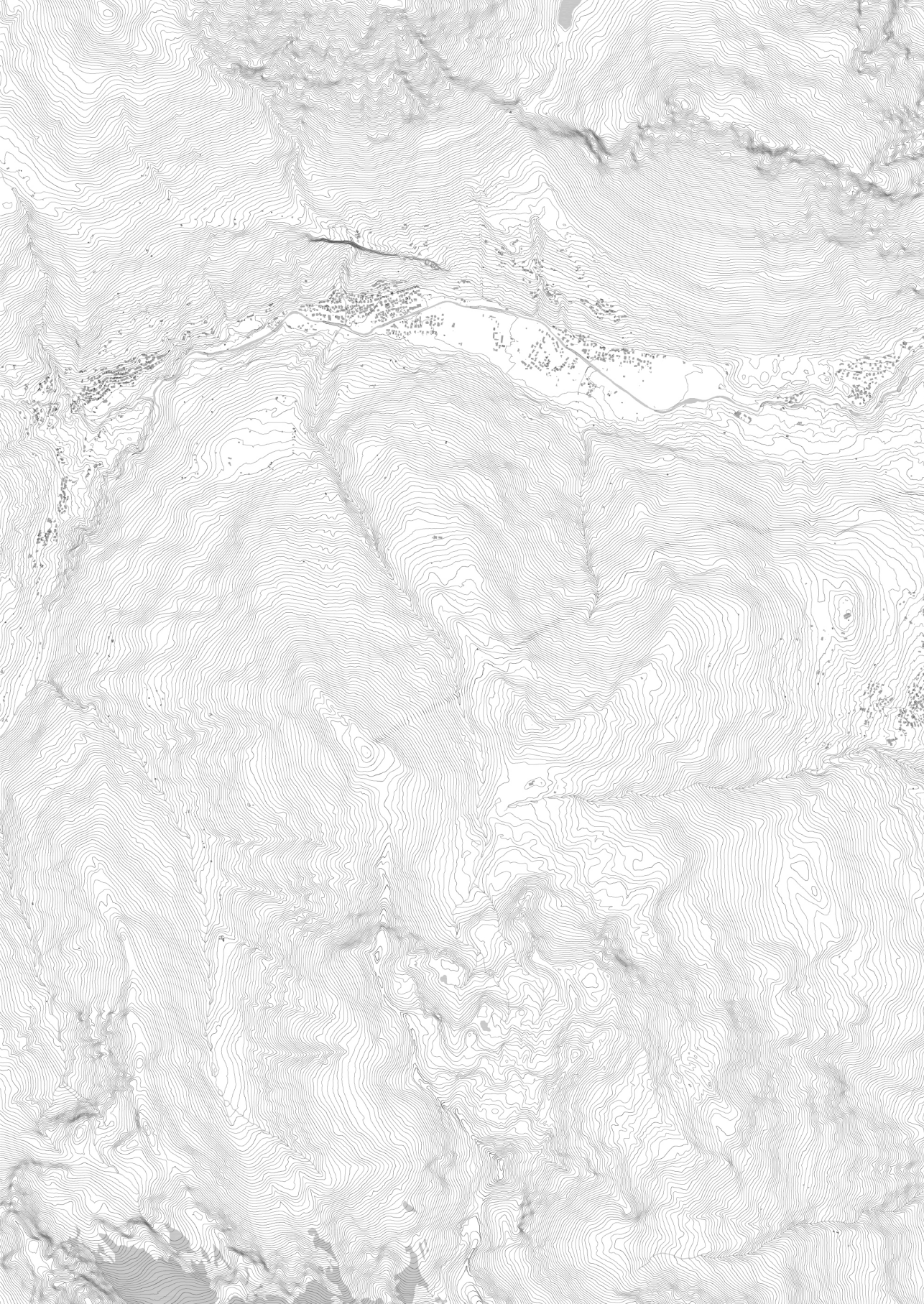
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ABSTRACT

In a context of increasing globalisation, the scope of large-scale international interventions tends to become more and more relevant. Generally speaking, this is a phenomenon that activates complex logics that stimulate a change in the urban and socio-economic character of the host country, but this also reflects in much more local and small-scaled dynamics of the territories that actually welcome them.

In 2026, Italy will play a leading role in such an event, the Winter Olympic Games of Milano-Cortina. Considering the distribution of the Olympic competitions in locations of a drastically smaller scale than the flows that the event will generate, the thesis focuses on investigating a design method that is capable of responding to the contingent need of the Olympics but that, above all, generates interventions for the specific place where they will be held.

The need by the municipality of Bormio, town in Valtellina, to build a new underground car park, a cycle-pedestrian bridge and a tribune to watch the Olympic competitions, provides an opportunity to test a design approach that wants to listen to the essence of places and reinterpret it to restore spaces that are liveable in everyday life and rooted in the territory.

Through a process of observation and study of the Valtellina landscape, the project acknowledges the value of using local elements as architectural tools. The three interventions thus become a single intention to become landscape, where the modulation of the surface and the walls containing it become the design devices.

The result is not intended as a dictate on how to deal with the large project in the small territory, rather it is a research for a possible way of restoring a built heritage that seeks to have the project recognised as part of the local landscape and to bring a stimulus to the interpretation of places by those who live it. A project, a landscape, that aspires to whisper the character of the place to those wishing to listen.

In un contesto di crescente globalizzazione, la portata dei grandi interventi internazionali tende ad assumere sempre più rilevanza. A livello generale si tratta di un fenomeno che attiva logiche complesse che stimolano un cambiamento nel carattere urbano e socio-economico del Paese ospitante, tuttavia questo si riflette anche in dinamiche molto più locali e di piccola scala nei territori che queste situazioni effettivamente le accolgono.

Nei 2026 l'Italia si renderà protagonista di un tale evento, i Giochi Olimpici Invernali di Milano-Cortina. Considerando la distribuzione delle competizioni olimpiche in luoghi di scala drasticamente inferiore rispetto ai flussi che l'evento genererà, la tesi si focalizza sull'indagare un metodo di progettazione che sia in grado di rispondere all'esigenza contingente delle Olimpiadi ma che soprattutto generi interventi per il luogo specifico in cui sorgono.

L'esigenza da parte del comune valtellinese di Bormio di realizzare un nuovo parcheggio interrato, una passerella ciclo pedonale e la tribuna per assistere alle gare olimpioniche, costituisce l'occasione per testare un approccio progettuale che vuole ascoltare l'essenza dei luoghi e reinterpretarla per restituire spazi vivibili nella quotidianità e radicati nel territorio.

Tramite un processo di osservazione e studio del paesaggio valtellinese, il progetto riconsidera il valore dell'uso degli elementi locali come strumenti architettonici. I tre interventi diventano così un'unica intenzione di diventare paesaggio, dove la modulazione della superficie e dei muri che contengono quest'ultima diventano i dispositivi progettuali. Il risultato non vuole definirsi come un dettame su come affrontare il grande progetto nel piccolo territorio, piuttosto si tratta di una ricerca su un possibile modo di restituire un'eredità costruita che cerchi di far riconoscere il progetto come parte del paesaggio locale e portare uno stimolo all'interpretazione dei luoghi da parte di chi li vive. Un progetto, un paesaggio, che aspira a sussurrare il carattere del luogo a chi desidera ascoltare.





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PROLOGUE

In 2026, Italy will once again host an event of extremely significant international scope, following Expo 2015 held in Milano: the Winter Olympic Games. These are occasions that trigger urban development processes and activate complex socio-economic logics.

However, they are historical moments in which a contingent demand for infrastructure and buildings that will serve the event is contrasted by a lack of long-term planning with respect to the legacy that these artefacts will leave on the territory.

On the right page: Olympic venues map

The 2026 Olympic Games are, logistically speaking, unprecedented. The main venues of Milano and Cortina delegate many competitions to locations spread across Lombardia, Veneto and Trentino-Alto Adige. Most of these territories are small mountainous places, accustomed to local dynamics quite different from those that the Games will bring.

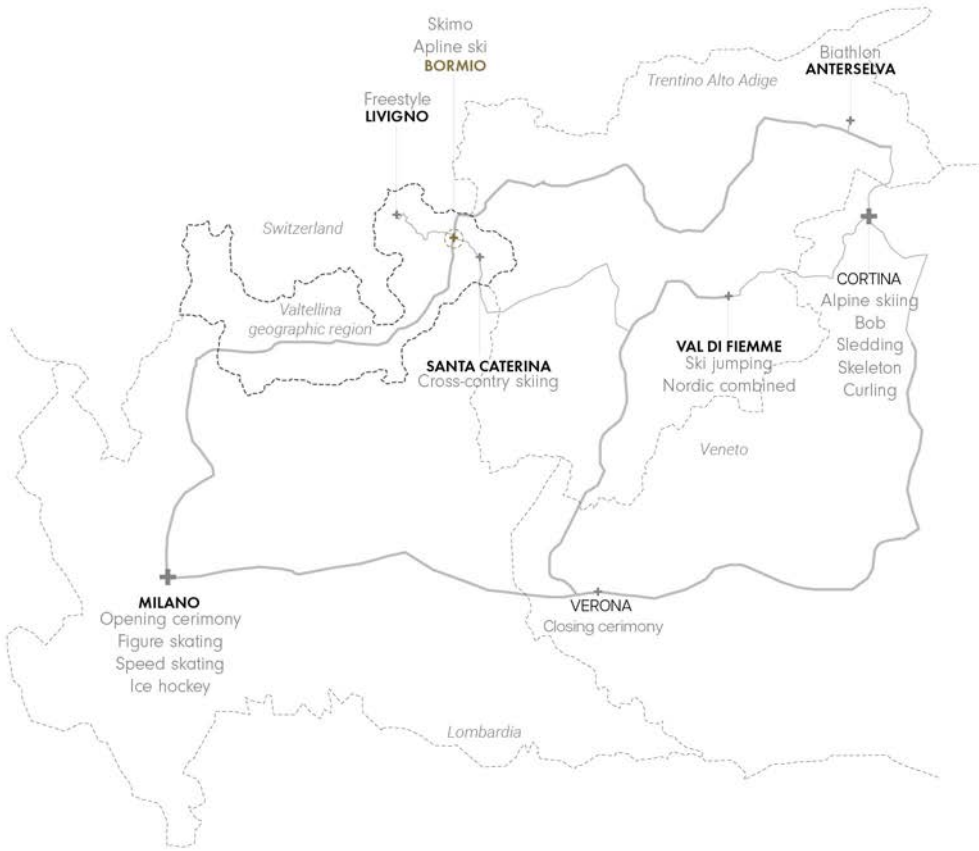
This observation seems interesting in relation to the dichotomy that is generated between an international event that requires types of interventions of a similar nature but always in locations that are extremely divergent in terms of geographical, urban and dimensional context.

This is of particular relevance from a design point of view and raises the question of how to ensure that such an event, with its related interventions, is able to fit in and be experienced by the small local community hosting it, even after the Games are over.

In this regard, Bormio, located in Alta Valtellina and home to Olympic competitions, has provided an interesting planning opportunity. In fact, the municipality has decided in favour of building a new underground car park at the beginning of the town, a cycle-pedestrian walkway, and a new tribune to watch the ski competitions. What is interesting about this type of application is that these are three interventions of an infrastructural nature and of a consolidated and often standardised type.

A project that could be interpreted as being merely technical in nature and yet confronting a specific place. The geographer Edward Relph asserts: *'Being in the place means belonging to it and identifying with it, and the more deeply we are immersed in it, the stronger our identification with it will be.'*

D. Cinalli, "Interpretare il Paesaggio. Qualità territoriale e valorizzazione delle identità locali", p. 83

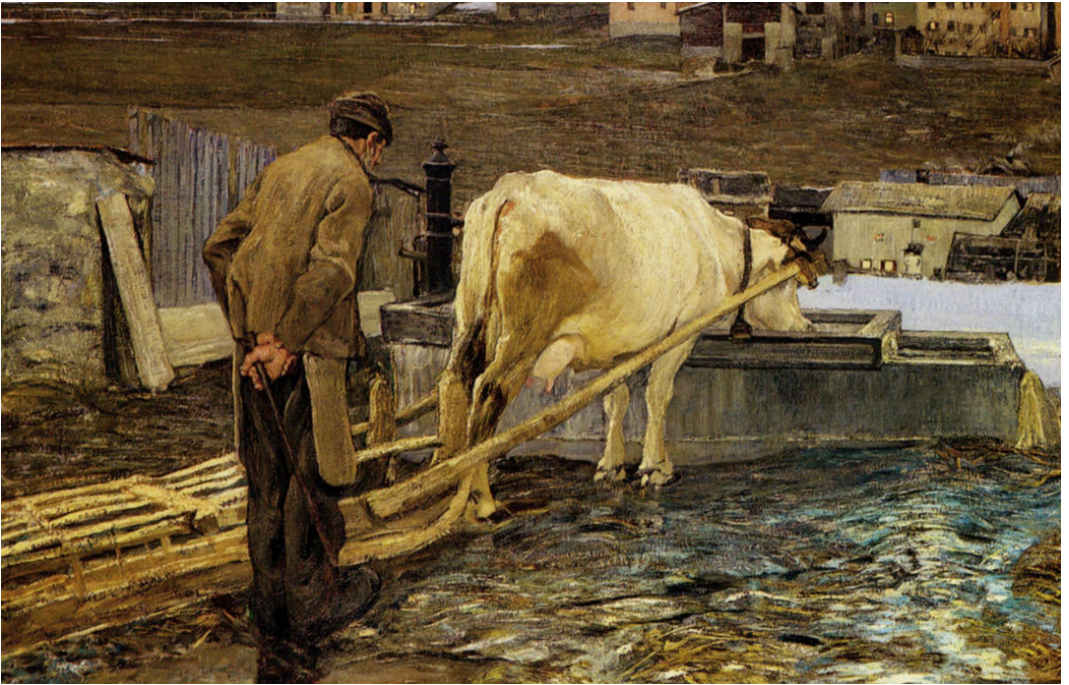


This is the aim of the thesis, to allow an identification and belonging of the project to the place, which is not instead dropped from above as is often the case for interventions of this infrastructural nature. However, this does not mean blending in with the context or taking elements from it and inserting them without discernment to become part of the architecture. Rather, the thesis aims to understand the places, listen to their voices, observe the landscapes in order to draw from these cues for a work of abstraction and reinterpretation with respect to the design objectives and intentions.

The paint of Giovanni Segantini "Allo sciogliersi delle nevi" represents well this feeling and characteristics of the mountains. Places that change in every moment, never looking the same of the day before. This means that when the snow is there the landscape becomes ground for sport activities and stimulate types of behaviours, in summer instead the town acquires a different shape and people adapt to the seasonality to live with it.

This research will follow these approaches, developing scientific analyses flanked by photographic suggestions of moments captured by a watchful eye for observation and interpretations of them. But above all, it is an experimentation that, through drawing and maquette as tools of verification, wants to explore the possibilities that may arise by deciding to interpret the design of the three interventions as an opportunity to bequeath to Bormio artefacts that may be places of life even after the Olympics are over, and that, in so doing, continue to whisper the intrinsic essence of the place to those who will listen.

On the right: Allo sciogliersi delle nevi,
Giovanni Segantini, 1888



THE OLYMPIC GAMES

The Olympics, like all events of international scope, represent opportunities. With more than 200 participating nations and the huge investments involved, the Olympics are the pinnacle moment of the athletes' careers, but so is the host city. A unique opportunity for the nation to show its embellished face and be ready to seduce new house guests. However, in order for the strategies to promote a country's local image to have the desired effect, an effective planning is required not only in the field of sport and related events, but also in the urban settings. As architects, this is precisely the issue that is most interesting to investigate.

The question of the role of architecture in a context of activation of complex logics made up of close relationships between the need to respond to a contingent urgency with punctual and extremely efficient interventions, and instead the legacy that this short-lived event leaves to the places and communities that host it, arises spontaneously. The role, therefore, of architecture with respect to the urban evolution of a city hosting the great occasion.

If, on the one hand, the event and the huge funds allocated by the state and the various entities involved drag with it an enormous flow of tourism capable of activating economic development mechanisms in the area, it is also necessary to consider the overwhelming impact that the event can have, especially in a small community.

A parallelism comes naturally between the change that such an event is bound to bring to a mountainous area that is by nature very sensitive to change and that which, again in an Alpine context, has been brought about by the advent of mass tourism.

Referring to Chamonix, a small Alpine resort on the French border, the well-known mountaineer Horace-Bénédict de Saussure expressed himself in these terms *'This great influx of foreigners and the amount of money they leave behind have somehow altered the ancient simplicity and even the purity of customs of this valley'*.

The meaning of these words does not directly imply a judgement on the phenomenon, but it clearly highlights the change that is being generated in a community that, due to its dynamics closely linked to the territory, is extremely influenced by the phenomena passing through it.

This, in the case of the Olympics, will mean the reception during the event of large numbers of people and an 'extra-exploitation' of the spaces of the town. The need to build

new spaces to accommodate and run the Olympics machine efficiently, places the focus of the organising bodies, the municipality and planners, precisely on responding to a contingent demand concentrated in the two and a half weeks of the event. However, it is crucial to reflect about who will be the main users and beneficiaries of this built legacy that will be left to the host city. Analysing the question carefully, the contrast between the answer that has been given in most Olympic history, namely the athletes and spectators of the Olympics, versus the one that a careful consideration dictates, i.e. the local community, seems glaring.

In relation to the Olympic event, this concept is called 'legacy', namely a situation that has developed as a result of past actions and decisions.

The etymology of the term focuses precisely on the passing on of a bequest, implying the will to let the past live on through the taking into custody of it by the receiver. This is precisely the key passage that the city is also experiencing. Precisely because of the very short duration of the Olympics compared to that of the artefact built for the occasion, it is all the more necessary to plan in advance the transition of the city's spaces from the hands of the users of the Olympic event and the the ones of the community that will have to live with it from then on.

When confronted with this fact, the paradox of ignoring the future fate of the work and its integration into the social and built context, in favour of a design conceived solely for the event and blind to its legacy, becomes apparent.

Precisely for this purpose, in 1999 the IOC -International Olympic Committee- approved at the Third World Conference on Sport and the Environment the Agenda 21 of the Olympic Games indicating the needed actions for the realisation of 'Green Games'. Among the points listed there are the containment of land consumption, the location of interventions in already urbanised areas, the provision of uses compatible with the characteristics and urban vocations for the areas hosting the event, the restitution of vital spaces for the city, and the increase of public transport supply.

What is interesting about these suggestions is not just the practical advice, but the underlying intention, which is to plan a medium- to long-term project in advance.

This is precisely a fundamental point for the success of the event's legacy to the host city and therefore for the research



Comparison between the duration of the events and lifetime of the projects

carried out. In this regard, the examples of past Olympic events are fundamental, which in some cases proved to be attentive to fitting into a process of transformation of the city that had already begun and, above all, far-sighted towards the future of the infrastructure. In many cases, however, what happened was the opposite. In fact, the consideration of momentary needs alone has led to a legacy of abandoned 'wrecks' in the territory.



Piano Regolatore Generale of Torino, 1995

It is worth analysing the case of the last Olympic event held in Italy, Torino 2006, from which Milano-Cortina 2026 will take the baton. The process by which the entire organisational machine moved is very illustrative of the vision behind the organisation. In 1995, Turin launched the new Urban Development Plan signed by architects Vittorio Gregotti, Augusto Cagnardi and Pierluigi Cerri to transform the city towards its post-industrial future. The decision to participate in the Olympics, declared winning venue in 1999, was therefore not a 'cathedral in the desert' but was strategically inserted in a fertile terrain of urban transformation. Clearly, the decision to organise the Games didn't only generate an international stage to showcase the city to the world and attract tourism even in the medium term, but above all, it was an accelerator of a modernisation process that had already begun and was planned. Resources and interventions built were fundamental in this sense, with 1.4 billion invested for the Olympic system.

The concept of planning, once again, comes to the fore. The Olympics were not conceived as a self-referential event, but rather as an opportunity to facilitate the already planned transition. The new metro line, the material legacy and the sense of confidence and new energy given by having won this great challenge, in fact cannot be limited within the walls of the event alone. The vision is therefore the guiding spirit of the actions and projects that see in the Games the occasion for their realisation.

Milano-Cortina 2006 still fits into this groove that saw its very beginning in Turin 2006. It is necessary to broaden the territorial horizon and read in the organisation of the Milano 2015 Expo and the next Olympics in Lombardia and Veneto the so-called 'pulsar effect'. This is precisely the phenomenon of temporal continuity of large-scale events that are aimed at enhancing and prolonging the positive effects generated at an urban and socio-economic level by the event itself. An initiative that follows in the footsteps

G.Caramiello, F.Varone, "Il grande evento e la trasformazione della città: Pechino 2008"

of the Spanish case, which saw the organisation of three events such as the Olympic Games in Barcelona, the Expo in Seville and the nomination of Madrid as European Capital of Culture all in the year 1992, which allowed the entire territory to experience a construction and economic boom. However, we must be cautious in our judgments and, above all, not limit ourselves to the urban-economic aspect that has certainly decreed the success of the Turin experience. If we go down the scale and approach what was actually built, not as a corollary for the city, but for the specific needs of the Olympics, it will be realised that there is no lack of skeletons in these kind of events. One of them is the Bobsled facility in Cortina, built for the 1956 Olympics and left unused since 2008, or the beach volleyball stadium abandoned after the Athens Olympics . Very often it is not only a matter of design decisions that are not attentive to the post-event, but also complex political and management relations over which it is difficult to have control.

However, there are examples, which even with regard to the realised artefact have shown that they can apply valid principles to make them usable over a much longer time horizon than the event itself.

This is the case of the London Stadium , built with a capacity of 80000 spectators for the 2012 Olympic Games hosted by the British capital. The two-ring structure allowed it to be downsized to 50000 seats after the event and become the venue for various competitions from athletics, rugby and football, becoming the home stadium of the London team West Ham. The downsizing of the structure was the key piece that enabled this re-functioning. In fact, the designers of Populus studio thought of the second ring as an independent and removable structure in order to adapt the architecture to the new requirements, without leaving an oversized infrastructure as in many other cases.

Another example, different from the previous ones and interesting in relation to the Turin approach, is that of the 2008 Olympic Games organised in Beijing.

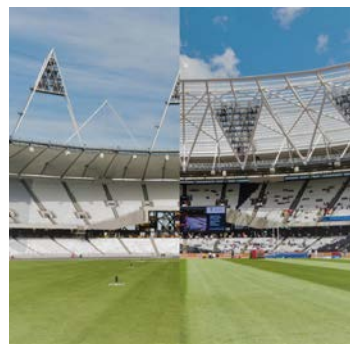
When Beijing's victory was announced in 2001, China's Vice Premier Hu Jintao declared that it was an example of the internationalisation of China, an opportunity to present itself to the world, to show the new image of a modern and cosmopolitan city. Clearly, the intent was that of a city rebranding, which stimulated a still active process of urban transformation that resulted in the loss of more than 90% of



Abandoned bobsleigh facility, Cortina



Disused beach volley stadium, Athens



Transformation of London Olympic Stadium

V. Quirk, "How (not) to host the Olympics"

the original urban character of the ancient capital of the Chinese empire. With almost 41 billion dollars spent, the Beijing Olympic Games still represent the most expensive Olympics in history. However, the perception, especially of citizens, has been that of an imposition from above rather than a positive opportunity as it was intended by the city of Turin. The Bird Nest, the Olympic stadium built for the occasion by Herzog & De Meuron, attracted more visitors than the Forbidden City in the first year after its construction, while remaining unused by those who live in Beijing on a daily basis. In short, an investment that proved to be mainly aimed at tourists, who are numerically the main users of the stadium, rather than spectators of events, which are significantly smaller than the size of the investment made. As it turns out, the visitor-citizen dichotomy is accentuated precisely in the occasion of events that potentially generate a positive opportunity for the city, but too often remain merely an entertainment for passing tourists. If this is valid for a metropolis, it is inevitable to ask what impact this phenomenon can have on a small town where unused infrastructure remains like skeletons on the landscape.

On the left: Bormio's Ski World Cup



BORMIO. A HISTORY OF FLOWS

It is estimated that a world-scale event such as the Olympiad involves a significant influx of people. The “categoric” of the latter will be varied since, in addition to tourists, Bormio will be called upon to host a system of workers capable of carrying out the skiing competitions. Among these, first and foremost, there will be those employed in the construction of temporary artefacts such as the 7.000-guest tribune, stands, television screens, starting and finishing grids. In addition to these, there will be an important number of race staff with diverse tasks such as trackside controllers, track maintenance, timekeepers, etc. As the competition is an internationally acclaimed race, numerous commentators, radio commentators and journalists from different nationalities are expected to be present at this event. Last but not least, an apparatus of sports staff in support of all athletes.

An event of this value will, for most days, attract a large influx of tourists. A conspicuous percentage will refer to the inhabitants of the entire Sondrio province, to which will be added the number of visitors from both the Italian and Swiss sides. There will also be foreign fans who, thanks to the coordination of various regional-national-international transports, will be able to reach Bormio.

This implies that the flow of people in the area will be considerable for the entire duration of the event. For us as designers and for the architectural projects we are supposed to design, it is important to take a bivalent view of the flow. On one side the idea of attendance of a significant number of people and on the other, with a direct relation to the previous one, the involvement of a conspicuous number of vehicles. These, according to site surveys and interviews with residents, will presumably saturate most of the available public space in the entire inner and peripheral area of the mountain village.

If the type and significance of the event could legitimately be catalogued as “anomalous” and unique, the same definition would not be entirely rational regarding the number of tourists and with them the number of vehicles that will reach Bormio. Indeed, surveys carried out throughout different times of the year have revealed a remarkable fact. Every year, the mountain village mentioned, which for decades has had a reputation as an important summer-winter tourist destination, experiences the influx and outflow of significant masses. Upon further research, in this case involving the

We thank the mayor of Bormio Silvia Cavazzi for her contribution on the subject

history of Bormio, it was revealed that this phenomenon has been characteristic of the place since ancient times. Indeed, flows of foreigners, with rates certainly smaller than the present, historically characterised the daily life of the town. The cause of this phenomenon was purely referable to a commercial and partially to a tourist factor.

To understand the dynamics of the area and its rootedness in the past, it is necessary to investigate its history and its geographical location. Bormio is a small mountain settlement in "Alta Valtellina", where the green ribbon of the valley is interrupted by Mount Reit. From here, two valleys, respectively called Valdidentro (west) and Valfurva (east), open up. In the first case, the valley leads to various destinations such as Livigno, St. Moritz and further away Zurich and Innsbruck. From Valdidentro it is also possible to reach the well-known Stelvio Pass, the latter in direct contact with Merano and Bolzano. Equally for the strategic interest is Valfurva, which leads south towards Valcamonica, then Bergamo and Brescia, and east towards Trento. Considering that Valtellina is a corridor in direct contact with Lecco, Como and Milan, it is possible to understand the strategic importance of Bormio.

Presumably founded in antiquity by the Ligurian natives, it would become, throughout history, an important transit and resting station for trade between the Italic states and the northern ones. The village became an encampment for the payment of transit taxes, but also a place of refuge where merchants could rest and restock.

As can be deduced, the village soon began to grow rich and expand in terms of both population and urban development. Since a good percentage of the profit from transit taxes went to the statute system under which Bormio was governed, the village began to be a territory disputed by many liegemen. No less important, being in possession of such territory meant having control over the trade of other kingdoms. These two points justify the numerous conflicts aimed at conquering this mountain area. In antiquity, Ligurians, Etruscans, Cetians and Romans successively formed the sovereign kingdoms of Bormio. During the first millennium A.D., in addition to the Romans, there was the domination of the Goths, followed by the Lombards, the Franks and finally, around 800 A.D., the Diocese of Como. In the second millennium, however, Bormio began to be involved in the war between Milano and Como and later in

B. Credaro, "Storia di Bormio"



Bormio in the past

the disputes between the episcopates of Como and Coira. Around 1300 A.D., the village managed to gain its political independence, which led to its economic flourishing. After 1500 A.D., Bormio once again became the scene of battles between different statutes such as the Grisons, the Spanish and the French; later it became part of the Cisalpine Republic, the Italic Kingdom and the Austrians. It was precisely with the latter that the famous battles of "Bagni Vecchi" (old baths) took place during the years of "Risorgimento", which led Bormio to driving out the Austrians and becoming part of the Kingdom of Italy. The astonishing history of battles aimed at conquering this territory reveals its commercial value and strategic importance.

Bormio not only acquired fame as a transit destination for trade, it also became, during the warm seasons, a destination point for numerous cattle. Coming from Brescia and Bergamo province, these reached the Valtellina's pastures for the high quality of its natural habitat. In this sense, the activity of autochthonous pasture farming constituted a large part of the work, and therefore of the economic income, of the population of Bormio. A deeper knowledge of this practice has made it possible to point out the occurrence of an interesting phenomenon in direct contact with the subject of flows and outflows, evidently already current at the time. If it is true that Bormio is seasonally populated and 'abandoned' by the transit of traders and breeders from the plains, it is also true that the practice of transhumance implies for Bormio a transfer of a part of its inhabitants to the high-altitude lands.

In conclusion, an overall view of history allows us to understand how the mountain village, from the earliest times, has always been characterised by two important features. Firstly, the centrality due to its strategic territorial position, and secondly, seasonality as an intrinsic peculiarity of most of the economic activities of the region.

Differently from the commercial sector, but still indebted to the discoveries in the field of technology, is the history of the tourism sector. For most of the time, from the year of its foundation until the 14th century, Bormio remained a small village, which during the summer months hosted a small circle of nobles who came from the plains or from the Grisons to enjoy the thermal waters. This constancy and inability to develop the sector is caused by numerous social, economic, political and cultural factors. Prominent

Transhumance: a complex of seasonal migrations over a wide territorial range and with a pronounced vertical gradient, by which large and medium-sized animals move, either spontaneously or by human conduction, from lowland to mountainous regions and vice versa. Treccani, "Transumanza".

among them is certainly the knowledge and interpretation of the natural environment. It was not until the birth of landscape painting in the 16th century that the latter took on a different significance. In addition to being a resource of sustenance, nature was also recognised as having an aesthetic value; hence the birth of the concept of "Landscape". The picturesque image of nature, coupled with the development of the Enlightenment culture of the 18th century, allowed the Alps to change their perception from a harsh, contemplative earthen environment to a set of scientific and aesthetic phenomena. The birth of the "landscape" gave the mountains an interest from a scientific point of view to aesthetic one, never seen before. Starting in the early 19th century, but already in the 18th century with the famous "Grand Tour", the Alpine territories, including Valtellina, soon became places worthy of attention by a considerable number of scholars, climbers and nobles. In short time, there was an important development of a tourism commonly named "elitist". For Bormio, the year that marked the beginning of real progress was 1815, when the carriage road that connected the main Valtellina villages with Lecco, Como and Milan was extended to the village in question. Praise for this choice goes to the Austrian administration, which only a few years later delegated the project for the Stelvio road to Carlo Donegani. Both infrastructural operations marked the beginning of a new historical chapter, the latter increasingly linked to tourism, at first "elitist" and later "mass tourism".

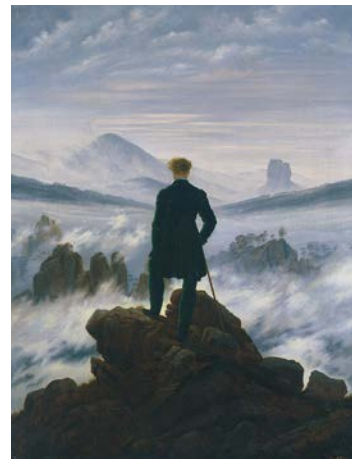
Already in 1834, the local administration, realising the possible profits from the tourism industry, gave orders for the thermal baths to be rebuilt and expanded. Thus began the European fame for the thermal baths, which began to attract the attention of numerous tourists from both the Italic and German sides.

In addition to this, the 19th century was the historical period that marked the beginning of an era linked to the conquest of peaks throughout the province of Sondrio. This new 'culture', initially confined to a narrow circle of nobles, became increasingly popular.

Despite this progress, the whole of the 19th century was experienced as a quiet century, where the population was constantly attached to traditional customs and where economic recovery was slow but steady. It would be necessary to wait until the beginning of the 20th century to

M. Fabbri, L. Masotto, "La nascita del paesaggio"

Treccani, "Grand Tour"



Wanderer above the sea of fog,
Caspar David Friedrich, 1818



Horace Bénédict de Saussure's climb,
Marquard Woher, 1970

see the formation of service system linked to welcoming an increasing number of tourists. Hotels, restaurants, expansion of the thermal baths and in 1909 the arrival in Bormio of the first motor car, marked the beginning of an era that would gradually embrace a form of tourism that could be defined as mass tourism. The end of the 1940s saw the construction of the first ski lift from Bormio to the "Ciuk" resort.

Despite the construction of the latter infrastructure, the local administration declared a state of economic and tourism crisis in the early 1960s. Bormio, in fact, had by that time been overcome by the more modern winter resorts that had sprung up in the numerous Alpine locations. Realising the situation, a team of sports technicians was commissioned to select the appropriate area for the creation of a modern ski station. Thus, in 1969, the 'Bormio 2000' ski resort was born. From here on, Bormio's tourist industry experienced an astonishing revenge, so much so that it projected the village into the Olympus of the most renowned ski resorts. With the 1982 inauguration of the Stelvio slope, the historic mountain village began to be the scene of numerous sports competitions, including the 1985 World Ski Championships. The race was such a success that Bormio entered the men's World Cup circuit permanently in 1993; even today, the downhill, one of the most fascinating of the "Circo Bianco", is a classic at the end of December.

The development of a new ski resort was paralleled by a process of economic development on a European scale. The latter triggered the beginning of emancipations of the middle class, which found itself the protagonist of democratisation processes and welfare programmes. The conquest of the new dimension of consumption and leisure by the urban middle classes resulted in a rapid physical and economic transformation of the alpine tourist areas, including Valtellina. The years of the economic boom definitively marked for Bormio the transformation of "elitist" and "bourgeois tourism" into "mass tourism". Historical analyses have shown an annual visitor influx of 190.036 people in 1962 and 219.244 in 1966 in the Bormio area. With reference to the present day, the data collected show an average winter influx, moreover only referring to the use of the ski lifts, that reaches almost 400,000 people.

Generally speaking, the influx of tourists follows seasonal patterns whereby peaks are concentrated at certain times of the year. Understandably, the latter occur on holidays

Bormio3, "Gli impianti di sci di Bormio"



First examples of cars in the mountain



Ciuk's cableway

A. De Rossi, "La costruzione delle Alpi", p.488

Rotary club di Sondrio, "Bormio : nella storia, nel diritto, nell'economia, nel turismo, nelle scienze", p.32

and weekends of the high season. A more detailed analysis was carried out by various on-site inspections that highlighted the conditions during the months of the year. In relation to the projects treated, the analysis was carried out by surveying the parking areas located in the immediate proximity of the main ski lift.

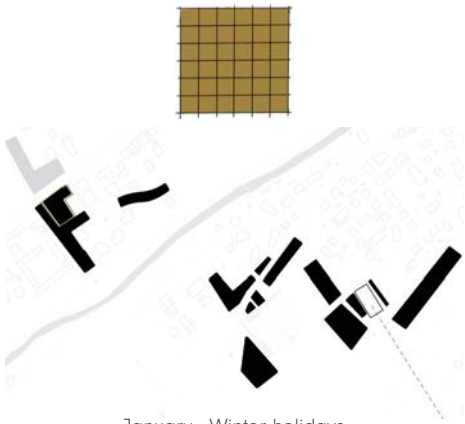
The graphs clearly show the saturation of the parking system during the winter holidays between Christmas and the Epiphany. A slightly different situation was found during a weekend in March where only certain areas were full. Opposite is the condition during the low season months where the parking system is used on average for 40% of its effective capacity. A high number of vehicles on site was again found during the summer months. Of particular interest is the "Parcheggio di Porta", a project area, which, even during the week, shows a quite number of cars due to the influx of workers in the village of Bormio.

In conclusion, as deduced from Bormio's history and surveys, it was realised that mountain resorts of major tourist attraction undergo a succession of flows and outflows of people. In the specific case of Bormio, these were linked in the past to a commercial and pastoral activity, while in the modern era they were linked to the tourism industry. This is reflected in the image of the village, which alternates between moments of crowding and abandonment. The underlying cause, however, is the climatic conditions that constantly alter the physical forms and characteristics of the landscape. This directly determines the use of the land and thus the possibility of skiing, walking and enjoying the alpine environment. Ultimately, it can be deduced that Bormio is part of a system of mountain villages where, unlike the cities, 'seasonality' plays a major role.

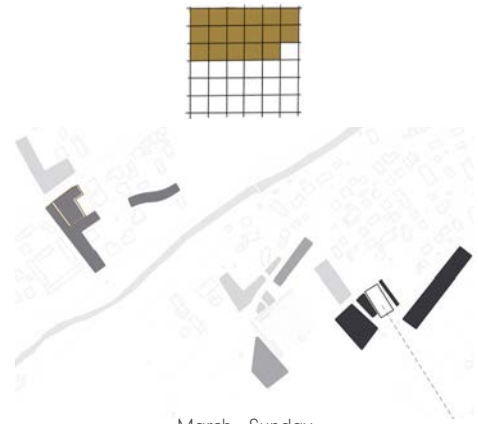
	'21/'22	'15/'20
DEC	73'600	92'200
JAN	77'550	93'500
FEB	84'900	125'700
MAR	66'200	17'600
APR	24'150	/
TOT	327'000	331'000

	'18/'19	'11/'18
DEC	85'500	74'350
JAN	84'300	93'550
FEB	105'300	112'100
MAR	95'600	82'000
APR	25'700	26'000
TOT	397'000	388'000

Attendance of ski facilities of Sondrio's province. We thank "S.I.B. Società Impianti Bormio S.p.a." for its contribution on the subject



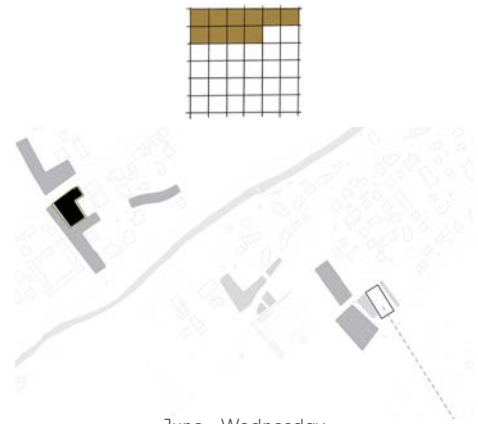
January - Winter holidays



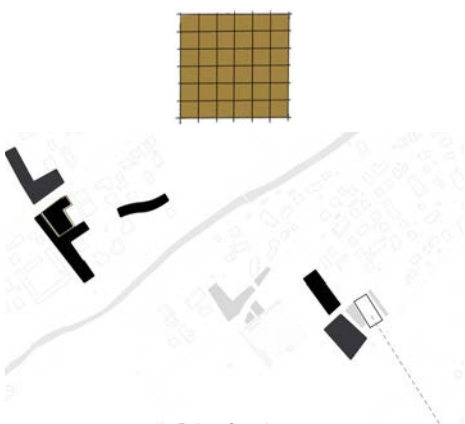
March - Sunday



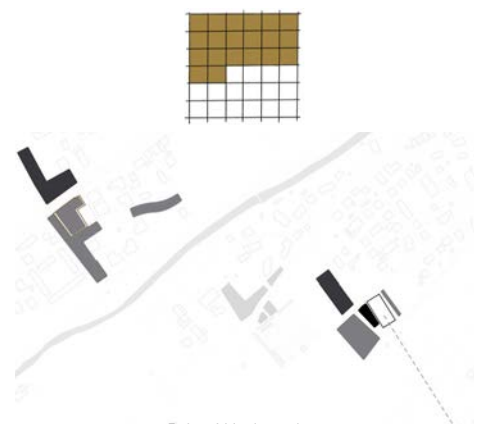
May - Sunday



June - Wednesday



July - Sunday



July - Wednesday

- 100-75%
- 75-50%
- 50-30%
- 30-15%
- 15-0%

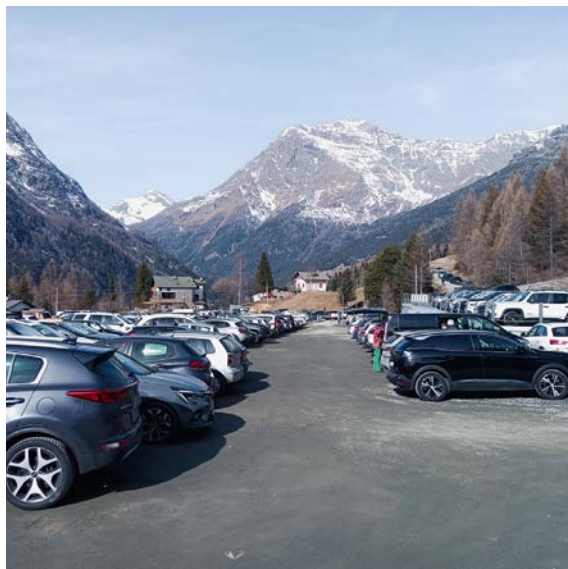


- Permanent uses
- Temporary uses based on the season

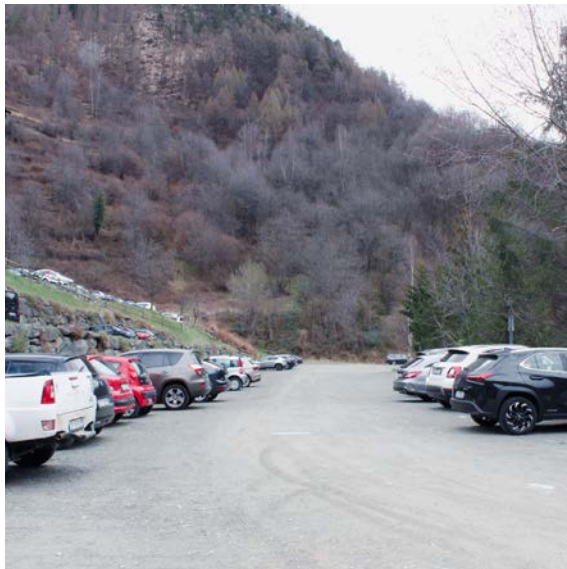


Change of seasons





Change of seasons





PROJECT'S INTENTIONS

The need for new spaces for Bormio has much deeper and older origins than the forthcoming Olympic event. The furrow, which is now being retraced, had already been dug by phenomena that permeated these places many years ago and that induced this territory to be a catalyst for the flows that pass through it.

History is a succession of changes and transformations and certainly some sort of events provide a stimulus for an acceleration of this process. The Olympic piece is only the latest event in terms of time that is helping to transform, physically and culturally, this place.

It is therefore not possible to speak of a 'destructive' event dropped from above into an unprepared context. As anticipated, the history of Bormio is one of flows of different nature that periodically cross the territory and carve the furrow of change. However, it is undeniable that the Olympic Games represent an unprecedented peak in the electrocardiogram of this village's heart. It is a small place that is used to filling up and getting crowded on seasonal occasions, such as the Ski World Championships held in 1985 and 2005 and the various editions of the FIS World Cup, but without ever having reached the level of what is expected for the 2026 Winter Olympics.

Milano-Cortina 2026, "I luoghi"




In fact, the Olympic Skimo races, also known as ski mountaineering, which will make its debut as an Olympic discipline for the first time, and the men's alpine ski races on the Stelvio slope will be held on this occasion.

It is precisely on the slopes of the scenic side, one of the most technical tracks in the world, which is 3186 metres long and has a difference in altitude of 987 metres with a maximum gradient of 63%, that one of the project interventions planned by Regione Lombardia and Comune di Bormio will be concentrated.

The D.G.R. XI/6264 of 11/04/2022 has in fact identified the interventions functional to the holding of the two races and consisting of the so-called "New Bormio Ski Stadium" and "Porta parking area and connection with bicycle and pedestrian network".

The first intervention envisages the replacement of the small tribune present at the arrival of the Stelvio slope with another permanent structure, maintaining a similar capacity to the previous one, of about 200 people. Since about 7000 spectators are expected to attend the Olympic competition, a temporary grandstand only for the Olympic event will



-  Parcheggio di Porta (car pak)
-  Cycle-pedestrian bridge
-  Tribune Pista Stelvio

Location of the projects in Bormio 1:15000











0 5 10 15 20 25m

Situation plan tribune





0 5 10 15 20 25m

Situation plan Parcheggio di Porta and bridge



be placed further upstream, as was the case for the 2005 World Championships. Since this is purely a prefabricated and standardised structure, this intervention will not be discussed in detail in the design proposal of our thesis.

The second project, on the other hand, is functional to serve the proper functioning of logistics. The 'Parcheeggio di Porta' is in fact located along the connecting road between Milano and the rest of Valtellina, right at the entrance of Bormio. The objective is to handle large influxes without having to enter the historic centre. The car park, already present at the same location, will be expanded from a surface car park only to two underground levels, allowing the street level to be converted into a public space for the city. In fact, its strategic location allows a transition to slow mobility by quickly reaching the centre within a 10 minute walk, but above all with a direct connection to the cycle and pedestrian path that runs alongside the Frodolfo stream towards the city and towards the Alute, the countryside at the foot of the surrounding mountain slopes.

It is precisely this existing path that will be upgraded with a connection between the two banks by means of a cycle/pedestrian footbridge, which is asked in the same announcement. This will be the third bridge connecting the two parts of Bormio, which are divided precisely by the Frodolfo.

The new footbridge will therefore connect an area of heavy car traffic, where the new Porta car park is located, and the opposite bank, which opens onto the natural landscape of the Alute countryside and the peaks in the background, allowing access to the area of the ski lifts and the Stelvio slope.

The focus of this thesis is therefore on these three interventions, already financed through the D.G.R. for a total of € 12,955,000.00 and awarded by CAL, Concessioni Autostradali Lombarde. It is precisely the confrontation with a pragmatic reality that wants to demonstrate, through the design proposal of this thesis, how it is possible to relate with needs of an extremely practical and functional nature, not understanding the interventions as three disconnected and efficient single objects only during the two weeks that will host the events, but as spatial moments capable of interacting with the surrounding context, becoming places permanently usable by a community.

Although apparently the three interventions have little



Temporary grandstand, 2005 Bormio World Championships

in common, a deeper reflection allows to highlight the character of inter-relationships they share. First of all, they are all places that serve moments of great influx that are determined in a punctual manner throughout the year, which, as we have seen, is an intrinsic condition of Bormio. However, this use, concentrated only in a few moments, brings with it the question of how the spaces can instead be used when the usual users are absent. These are therefore three places that tend to become empty most of the time when visitors from outside the town are absent and will be forced to change their use in order to remain living spaces. This is not the only characteristic they share, they are in fact spaces that have a hybrid character not only in terms of their possible functions but also of their location. The surfaces are what identify the essence of the mountain and the landscape. Soil, grass, gravel, earth, wooded surface, is what determines the use of the landscape in the mountains. Each soil implies characteristics that make different activities possible. This is what makes it possible to identify suitable areas for ski slopes, mountain bike trails, walks or agricultural land.

The surface, in a car park, walkway or grandstand, is also the place where everything takes place, where cars park or people sit. One understands, therefore, that the character of what is on the ground level plays a fundamental role at the design level too.

For this reason, a mapping of all surfaces in the municipality of Bormio was conducted. An analysis aimed at determining, with objective methodology, the intrinsic character of places to be used as an element of design clarification.

The research was structured in two progressive degrees of depth. The first aims to highlight the difference between permeable and impermeable terrain in the territory. While in a city this type of analysis would highlight a pronounced presence of artificial, and therefore impermeable, surfaces, this is not the case in a mountainous territory. Hence, an analysis of this type allows to understand the relations that are established between areas that have been anthropised and those that maintain their original character as natural spaces.

What is evident in the municipality of Bormio is a concentration of hard surface areas where there is also a higher building density, branching out towards the municipality's most recently expanded areas. The three project areas are



- ⊙ Permeable soil
- Impermeable soil

Surface permeability analysis 1:20000



located in these more peripheral locations, if this is how an area in a municipality of just over 3900 inhabitants and 41000 km² can be defined. Areas where the boundary between what is urbanised and what is natural blurs in unclear definitions.

This hybrid character can be recognised even more in a second level of detail, shown by the mapping of all the different surfaces present. Once again, the historic centre is the one with the greatest cohesion, evidenced by the homogeneity of the cobblestones paving.

This gradually gives way to a heterogeneity that leads to the juxtaposition of asphalt, gravel, sand and green surfaces. This is in fact what is found in the vicinity of the car park, bridge and tribune, where not the uniformity but rather the diversity of the ground texture suggests a generic, hybrid character, even at the level of function and use of space.

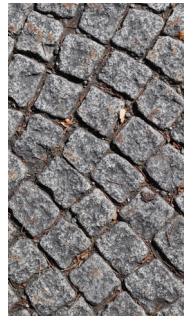
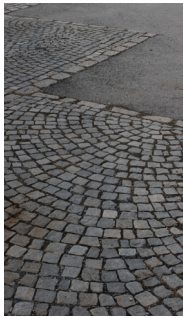


- Grass
- Woods
- Sanpietrini street
- Sand
- Asphalt
- Gravel
- Sanpietrini soil
- Rubber

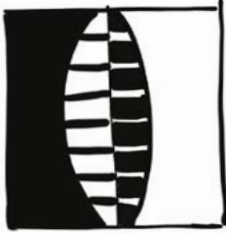
Type of soils analysis 1:20000



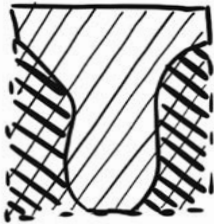
Soil



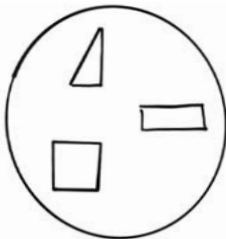




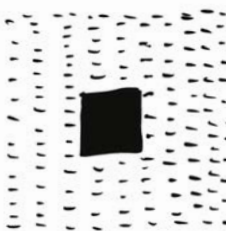
BOUNDARIES



CHANGE



HOMOGENEITY



CONTINGENCY vs. LEGACY

The analyses conducted thus verified, with a more scientific methodology, what had been initial hypotheses, intuitions. Design conditions that can be condensed into four fundamental concepts:

- The boundary condition, places belonging neither to the category of natural nor artificial but spaces that hybridise these definitions.
- Change, i.e. places that already exist in a condition determined by seasonality and the flows that pass through them and then adapt to these by transforming themselves.
- Homogeneity, apparently not present due to the diversity of the three interventions. In reality these share several characteristics and can be interpreted as a single design system.
- The contingency vs. the legacy, a challenge in responding to very specific needs for the Olympic event and, through the same project, leaving public places, i.e. affecting a community even after the event.

The very fact of not constituting three interventions that were independent of each other but instead collaborative, suggested a design strategy that would relate the three sites as a single project, in the sense of a single intention, located at different points in the city.

Currently divided by the Frodolfo stream and a communication network that is currently only car-dependent, the car park and the tribune have the potential to become initial and final destinations for large numbers of people, both during the Olympic event and in the future. Among other things, this is also the intention of the municipal administration, which has planned the construction of a pedestrian-cycling footbridge precisely to encourage a transition to slow mobility that can lead directly to the ski areas. A system that is further strengthened by the presence of numerous parking spaces along the new road that will be created and that can be integrated as new needs arise.

The intention represented, however, is not only to refer to a physical connection of the areas, but above all to the conceptual level of the intervention, which will present the same methodology and will allow these places to express their close relationship not only on an abstract level, but also on a physical, architectural level.



A PROCESS OF GROUNDWORK

The three projects, as shown, share several traits that conceptually allow them to be interpreted as a single intervention. What unites them once more and looks at their functional essence is their infrastructural character. Therefore, works that are necessary to carry out an activity and necessary for urban settlement.

This definition applies perfectly to what the three projects actually represent. Namely, infrastructures that are useful for holding the Olympic event and therefore complementary to it. It is precisely the fact that they are places normally traversed rather than experienced, that has led over time to a lack of interest in design research in their regard, which has been replaced by an assimilation of the infrastructure project to that of a mere technical and structural exercise.

This is paradoxical when one considers the perceptive importance that these places instead have. The tribune is the place that acts as a theatrical backdrop to the unfolding of the competition, it is the space where the show is actually enjoyed. Just think of the role that Greek and Roman theatres played in the past. Especially in the Hellenic ones, this is evident. The chosen venue and the theatre itself constituted two inseparable and fundamental elements for the performance itself. The nature behind the stage was as much a protagonist of the performance as the actors, as were the seats set in the landscape. Design mechanisms collaborated to generate an experience by integrating the performance venue within the performance. It arises spontaneously to compare this attitude to what is possible in a mountain scape. Can the functional and efficient grandstand, present in most ski races, be replaced by an architecture that fits into the landscape and derives its *raison d'être* from its surroundings?

A similar discourse can be made regarding the small cycle-pedestrian bridge that connects the more urban area where the Porta car park is located and the natural plain of the Alute, which opens up towards the spectacular mountain backdrop. It is not impossible to think that the connective element between two banks can be interpreted with a design value rather than merely a technical one. The Bagno di Bellinzona, completed by Aurelio Galfetti in 1970, exemplifies an attitude towards interpreting the design of an infrastructure as an architectural space. The pedestrian walkway that connects the different baths and their rooms, a linear and functional 'street', is transformed into a place

Hidden Architecture, "Bellinzona Bathhouse"





Bagno di Bellinzona, Aurelio Galfetti

S. Henley, "The Architecture of Parking"



Garage in rue de Ponthieu, August Perret

of spatial perception. The width, which allows space to pause and admire the landscape, and the calibrated physical connections with the baths, as well as the visual connections with the landscape, allow to experience the place rather than merely cross it.

In the case of the bridge to Bormio, the dimension of transition from one point to another in the landscape, from the man-made to the natural, constitutes a further component that demands to become a project, to increase the perception of the act of crossing a physical limit such as the Frodolfo stream.

The need for a project, understood as research and focus on the essence of the place, sees its climax in the case of the car park. Indeed, we experience the paradox of the popularity of the car as a means of transport with the unpopularity of the infrastructure that houses them. In contemporary cities, the question of logistics has become increasingly resonant, pitting the desire to get as close as possible to one's destination, often in the city centre, against the modesty of wanting to hide this infrastructure from the eyes of passers-by. Never explicitly mentioned, but evident from urban behaviour, is the common thought that 'cars are attractive, but their garages are unsightly and should be hidden'.

However, this was not always the case in the past. Just think of Le Corbusier, who built the concept of the car for living around the aesthetics of the car, dynamic and to be shown off. Or think of August Perret's garage in rue de Ponthieu, built in Paris in 1905 and representing one of the earliest examples of an architectural typology of this type, in which the search for light through the large skylight in the ceiling and the rose window in the façade, attributing the dignity of a cathedral to a car warehouse, highlight the interest that the garage had in the early 1900s.

More prodigious is the example of Russian architect Konstantin Melnikov, who designed a prototype multi-storey car park above the Seine. A project in which the oblique dimension of the ramps, exposed on the façade, constituted the architect's vision of modernity and dynamism, attributing to the building the intrinsic qualities of the new medium.

Over time, typological research increasingly diverted towards space efficiency, to accommodate the highest possible number of cars. A phenomenon that has gone hand in hand with the development of the concentration

of people in certain places. The first historical example that produced this effect was the proliferation of shopping centres in the mid-1950s. The large influxes generated the need for huge spaces dedicated to cars to the extent that, through a metonymy, the 'shopping centre' was instead named the 'parking centre'.

The evolutionary history of the parking typology traces precisely what is traced by these examples, the architectural research that characterised the early 20th century gave way to a standardisation of the model, which became an expression of efficiency and savings and led to the proliferation of anonymous infrastructures in cities, often insignificant and hidden in basements, mere results of construction technique.

The occasion of designing a car park for an event such as the Olympics in a context with seasonal dynamics such as Bormio poses a new point of view that pushes to reconsider the model that has been outlined.

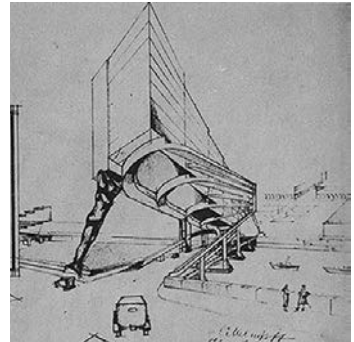
The demand for a large and functional space, a void in the city, to meet the need for the peak attendance of just over two weeks in 2026 and during the peak ski season, at the same time raises the question of what this place will be when its inhabitants, the cars, leave it.

Characteristic of the car park is also that it is a space that is as empty and unequipped as possible, to allow the mechanical movement of cars. However, this generates a plane that becomes merely a vacuum when not in use, a place devoid of any characterisation that might open up the possibility of different uses. And it is precisely this theme that this thesis research sets out to explore.

Not only does the dynamic of emptying and filling that occurs in Bormio demand to be channelled into a project that follows this logic, but also the longer-term prospect of a gradual abandonment of the places currently used for parking, which would become empty skeletons in the city should there be a change in the type of mobility towards a more collective and sustainable one in the future.

This prompts us to change our approach, to seek new ways of constructing spaces that are efficient for their parking function, but which are also sufficiently generic, or rather architectural, to stimulate people's willingness to use it as a space for living and not just for parking their vehicles.

With this in mind, it seems fundamental to understand how people tend to appropriate the spaces of the city, especially



Parking garage over the Seine,
Konstantin Melnikov

D. Cinalli, "Interpretare il Paesaggio. Qualità territoriale e valorizzazione delle identità locali", p. 71

those which, due to a certain degree of indeterminacy, stimulate interpretations on the part of those who live in them.

It is therefore a cultural geography, theorised by Friedrich Ratzel, which suggests precisely a relationship between human behaviour and place, nature understood as a physical context.

The concept, which originates from Darwin's evolutionary theory, is clearly explained by Giuliana Andreotti:

"Just as Darwin had observed that particular environmental conditions determined the very evolution of the beings who lived in that environment, so happens in geography - so it seemed obvious - one had to conclude that it was the environment, and especially its visible part, namely the landscape, that determined, not only man in the ethnic sense, but man as artifex in all his behaviour."

According to Ratzel it is therefore possible, from certain environmental conditions, to predict and thus determine the cultural development and behaviour of a certain population. i.e. a landscape and its contents can produce, almost scientifically, certain conduct.

This interest in the relationship between place and the use of space has resulted in photographic research aimed at investigating this hypothesis and identifying constants applicable to projects.

Several reflections emerge from the photographs, which have design values that can be applied in different contexts. Firstly, one observes how large spaces, oversized in relation to everyday needs, tend to remain empty. A horror vacui that actually occurs when faced with the absence of space characterisation. This is a particularly interesting fact considering that in Bormio this phenomenon frequently occurs when the presence of tourists gives way to the town's only 4000 permanent inhabitants.

On the contrary, when possible, it is a common tendency to seek a surface that acts as a boundary, as a limit of what is indeterminate. A search, therefore, for intimacy, understood as protection from what is outside, which is implemented by choosing to stop in a place with an element that at least encircles the shoulders, by parking bicycles between two pots that symbolically produce a boundary, or by choosing to create one's own private niche in the space enclosed between one's camper van and a lawn.



Closeness





Paths





The stimulus to use space creatively, outside the patterns of codified use, is instead generated by the abstraction of the spatial object. A flexible object, in the connotation of the Latin term, linked to the observation that tree branches, even if they bend in the wind, then return to their original position. These flexible places are therefore capable of bending, accommodating different uses, and then returning to being what they were built for. This characteristic is evident in what is not extremely specific, but rather maintains a certain degree of abstraction that opens up interpretative possibilities.

These design observations generate a challenge: that of restoring places that are suitable for being a tribune, a bridge and a car park, but that can also become something else, become public, that is, available to all and above all interpretable by everyone.

And if what has been said so far, the characteristics highlighted, are valid in a more general sense and applicable to different contexts, the specific conditions of the place impose instead to calibrate the project in the specificity of the context in which it will be realised.

The mountain expresses its essence through the surface, which with its different inclinations marks the rhythm of the territory. The plain, like that of the Alute di Bormio, tends to undulate in slight bends of the terrain that then become steep slopes. The projects also see their essence in being surfaces.

The tribune, which can be conceptually reduced to a folded surface, a shelf. The same applies to the car park, marked by horizontal and diagonal planes, the former for parking and the latter for circulation, or the bridge: a surface connecting two other terrains.

This element also becomes landscape, it is what unites the different environments that make up the mountain and becomes the interpretative key that allows the three projects to be subsumed under a single common denominator.

Of considerable interest is the example of the Japanese architect Isamu Noguchi, who, with a similar theme, tackled various design researches where the need to define a use of space faded into personal interpretations of place. "Contoured Playground", a conceptual project conceived in 1941, uses precisely the modulations of the terrain to compose a playing surface centred on the experience that each person will want to make of the generated landscape.



Alute, Bormio



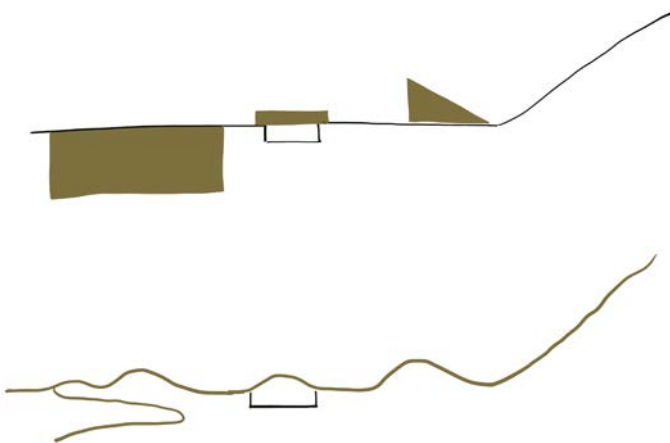
Maquette of "Contoured Playground", Isamu Noguchi

In fact, it is precisely a landscape, with undulations so similar to natural ones, that do not define the playground with tools but rather with invitations to explore and interpret.

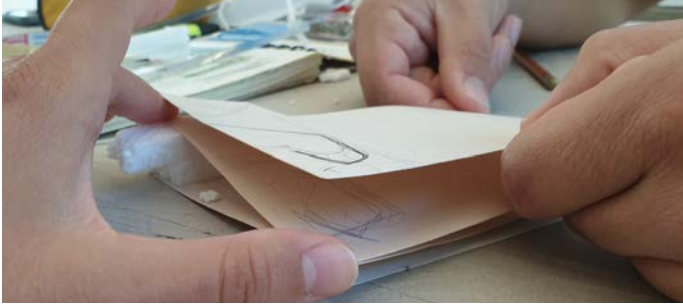
This becomes the fundamental aspect for the three Bormio projects. Projects that avoid the use of equipment to characterise the space but which, through the modulation of the surface, want to suggest, whisper, interpretations. Spaces, therefore, that can allow free circulation for cars or a clear layout for watching ski races, but that also offer that domesticity, those boundaries, that make them habitable spaces, spaces that are the object of the creative imagination of those who live in them.

What were presented as three separate objects, three apparently unrelated projects, become in the design a single landscape, a continuous surface, a movement of the earth that offers interpretative opportunities.

How the surface is modelled according to the shapes and design objectives was the subject of research and 'manual' experimentation. Paper, cardboard and plasticine were the instruments that made it possible to explore in a direct process the outcomes of the attempts to shape spaces in order to generate what can be called 'rooms', areas that reduce the large dimensions of the project. Following Noguchi's example, the movement of the ground, the groundwork, becomes the element that makes it possible to define and at the same time abstract the landscape of the projects, leaving the surface free to be a car park, a grandstand or a bridge but also allowing interpretations and producing spaces of a smaller scale.







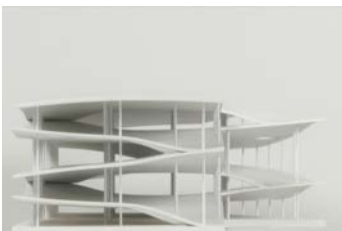
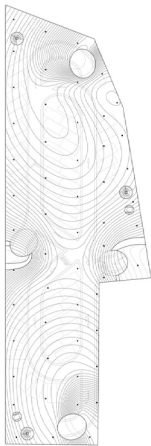
Formal and compositional research was also accompanied by logistical and functional reflections, required by the infrastructural nature of the projects.

Starting with the car park, the first of the three projects that one would encounter on the way to Bormio, spontaneous reflections arise on how it is possible to make the place flexible enough to the seasons that pass through it to in order to be able to transform itself into a space for people, in the absence of cars. Normally, in a multi-storey underground car park, it is common practice to start occupying the upper floors only to descend to the lower ones when the previous ones become saturated. However, in the case of Bormio, this would mean almost always seeing the upper floor occupied, which is a potentially public floor, a space directly accessible from the pedestrian route.

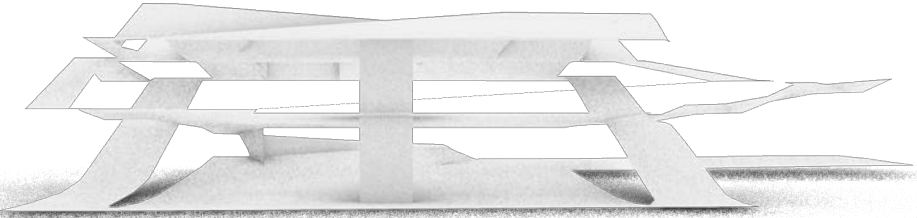
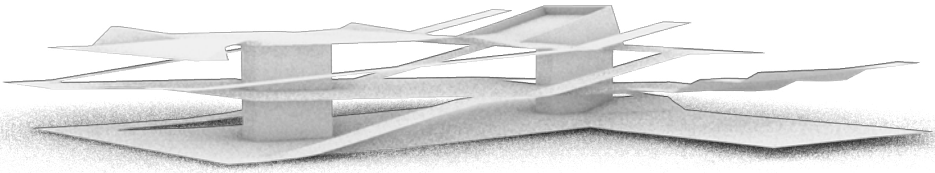
However, the exploitation of the surface makes an alternative possible. In this respect, Christian Kerez's project 'Parking for the Pearl Path', a concept for an off-storey car park in Bahraj, offers an interesting design perspective. Here again, the main theme is that of the surface, which moves continuously, modulating its inclination, through all floors.

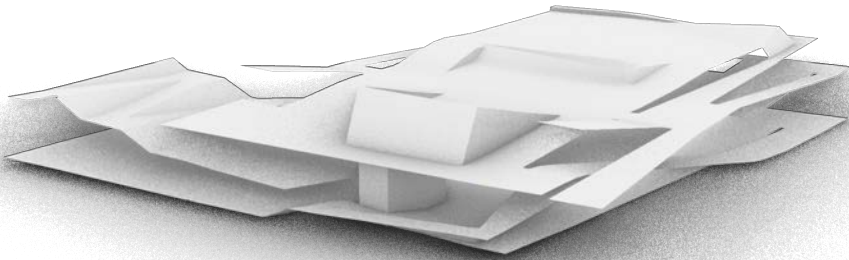
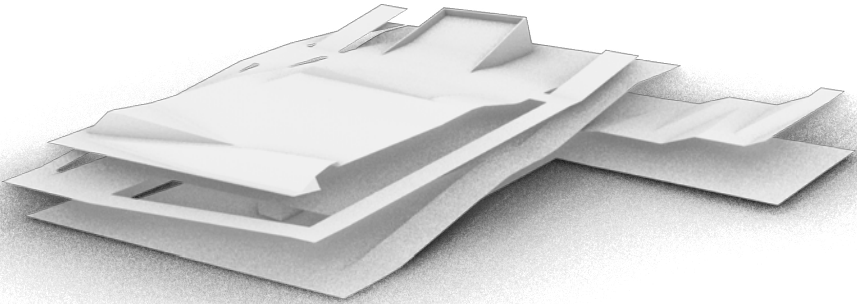
The strategy for the Parcheggio di Porta is very similar. Instead of having three parking compartments, each independent of the other, it is possible to think of a single modulation of the surface that connects all the different floors. The entrance ramp to the car park leads directly to the lowest floor, inviting people to use the lower rooms before the upper ones, which can be reached via another opposing ramp. The interposed floors, which are also slightly inclined with a 3% slope, are instead connected to each other as a single surface plane running from that of the upper public space. The constant inclination then undergoes peaks, as in the mountain landscape, when it becomes knotted pedestrian ramps at double heights that also visually connect the different floors.

The connections, the light, the views, also make the lower floors a continuation of the public space and the parking level is then only occupied by vehicles when the lower floors are saturated, turning into a square, or perhaps a landscape during everyday life.



Parking for the Pearl Path, Christian Kerez





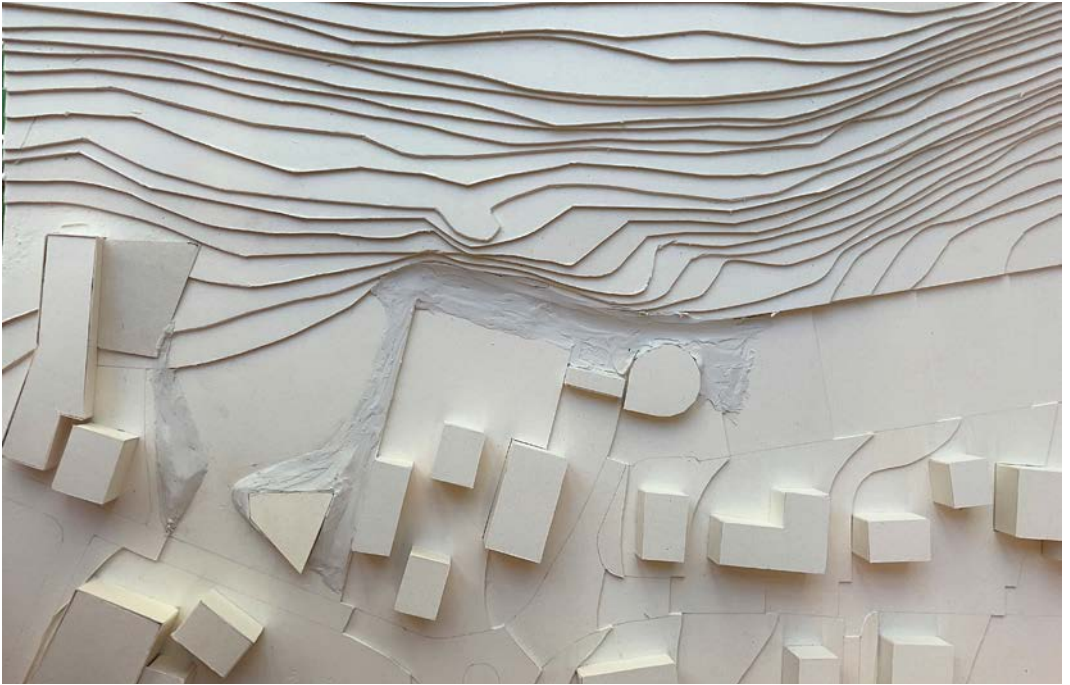
In the tribune, the surface declines as a direct continuation of the mountain. The descent of the pista Stelvio, is currently interrupted in front of the stone seats, a wall on which the natural slope ends. The project instead intends the arrival area, the terrain that marks the transition from the horizontal to the oblique dimension, as a mediating space between urban and natural.

The gradual transition is modulated precisely by the terrain, which ,like an amphitheatre, embraces the central space and traces an inclination opposite to that of the mountain slope, transforming the seating area into a landscape as much as the one in front of it.

No longer a wall, therefore, but rather a funnel that welcomes the road towards nature and the mountain from the city, a landscape that declines into two masses that welcome the confluence of the two realms.

In the two previous pages:
conceptualization of the car park

In the next two pages:
conceptualization of tribune





EXPLORING LANDSCAPE

Having understood that the three projects aim to be landscapes, it is first necessary to understand what is meant by this term and to frame it in an interdisciplinary dimension capable of providing a design framework.

Luciano Bolzoni opens his article "The architectures of elsewhere: aspects of Alpine building in the contemporary world" by posing a question: "how is it that we are so interested in the matter of designing and inhabiting the Alpine context?". This is answered by the interpretation of the Swiss architect Gion A. Caminada, who says: "Probably the concept of Alpine building has something to do with the fact that mountains emphasise architecture in a different way. In recent years, so much has been defaced with concrete in the cities that one no longer realises what relationship there is between the buildings and the landscape." This statement resonates with the provocative idea of L. Bolzoni, who expresses how the mountain exalts the man-made object regardless of its good and bad qualities. For him, in fact, the mountain landscape, designed in turn by the ensemble of natural forms and elements, is in contrast to the anthropic forms and elements. This results in a sort of amplification of the specific architectural artefact's peculiarities. The idea presented embraces what G. Ponti had already stated when he defined "the floor is a theorem" in "Amate l'Architettura". In indeed, the Milanese architect states how natural and architectural forms refer to two different harmonic orders, and hence how they both define a contrast with each other. What is the meaning of this theory if architectural research is directed towards groundwork and landscaping? How and what degree should the relationship between human and natural shape be defined? How does the human artefact "tame" the landscape if it itself claims the desire to be so? To understand the possible systems of approach, at an intermediate scale the possible languages and at a detailed scale the possible materiality, the research was developed through the investigation of landscape projects. The research was not carried out following a linear principle but rather a sudden historical and geographical change involving a disparate sequence of working methods. Autochthonous artefacts belonging to the historical tradition, theories for the "ground connection" shared by the "Ticino school", and contemporary landscape projects belonging to a non-mountainous sphere progressively constituted the background of references. The investigations were

supported by constant bibliographic and physical research within the Valtellina landscapes.

In order to understand how the image of the mountain landscape has developed and influenced landscape or landscape-scale works, the research was firstly developed on the basis of temporal research. The latter allowed the understanding and subsequent subdivision of the historical mountain evolution into four macro-phases. The first referred to the broader historical period in which the first anthropic settlements developed until the 17th century, parallel to the Enlightenment movement. The second, from the 17th century until the last years of the 19th century, constituting the beginning of elite tourism and alpinism. The third from the early 20th century to 1977 represents the era of Alpine modernism. Finally, 1977, the year of the "Discours de Vallouise", marks the starting point of the fourth historical phase (constituting the recent history) in which the Alpine heritage paradigm will be defined, which will result in criticism of 20th century forms of architectural development. With reference to the design's focus, the first historical phase revealed a system of recurring and unchanged constructive references. The latter, memories of a vernacular knowledge handed down through the centuries, represented the only possible expression of mountain dwelling skills and possibilities. The explanation of this lies in the fact that human beings had a constant pragmatic vision and management of the territory. With such premises, the first historical phase marked the evolution of traditional settlements consisting of stone and wooden rural houses. To this period also belong the first forms of land management used to increase cultivable areas and with them agricultural production. In fact, in this historical phase, all the terracing systems in dry-stone walls that were to constellate and partly modify the natural perception of the mountain landscape came to be used.

For centuries, the Alpine landscape, largely composed of wild places and to a small extent of settlements, was a constant image for both native and non-native people. It had to wait until the second half of the 18th century to give scientific and aesthetic values to spaces and phenomena such as glaciers, rocks, forests and lakes. These years define the paradigm of the alpine picturesque imagery and from this the beginning of a real physical upheaval of the mountain landscape. In fact, under the influence of

We thanks arch. Dario Benetti for his contribution on the subject

A. De Rossi, R. Dini, "Manipolazioni metasemiche del patrimonio", in: Archalp, n.02

M. Jakob, "Il paesaggio alpino in quanto oggetto patrimoniale", in: Archalp, n.02

L. Bolzoni, "Le architettura dell'altrove: aspetti del costruire alpino nella contemporaneità"



Tourists in the Alps



Dam in the landscape

British philosophers and proto-tourists, the aesthetics of the sublime was introduced into popular and urban culture, which would allow the Alps to no longer take on the value of an "alien" territory, but of an aesthetic heritage.

Gradually, for the elite class, the Alps acquired more and more fascination and interest. This factor will determine, between the beginning and the end of the 19th century, the development of allogenic building (small-scale cottages), functionally and architecturally in contrast to native dwellings. In parallel with this, the latter would become and remain until the present day the protagonists of a new, falsified Alpine imaginary. The narrative underlying this idea will be at the basis of the literary character of Heidi in which an image of the mountains will no longer be associated with labour and danger, but rather with immediate contact with healthy and playful environments, thus in total contrast to the idea of the industrialised city. The new representation of the Alps will involve an exponential conquest of the natural territory by human actions. The combination of new architecture, the latter defined by a reinterpreted alpine language, and the first modern forms of infrastructural development of the territory will allow a new form of habitability and use of the landscape. Nevertheless, throughout the 19th century and for a good part of the first half of the 20th century, historical practices such as agro-pastoral activities will keep a leading role in the daily life of this territory.

Attention to the new values of the mountains, attracted the interest not only of tourists but also of numerous scholars, engineers and financiers who implemented heavy works such as water regulation and early infrastructures. Of these, the dams would in time prove to be the first modern constructions which have a dialogue no longer with the rural settlement but, thanks to their dimensional scale, with the natural landscape. The absence of historical works to which they refer and the fact that they do not conform to the local architectural language will allow designers to conceive modern structures in their highest technical/material expression.

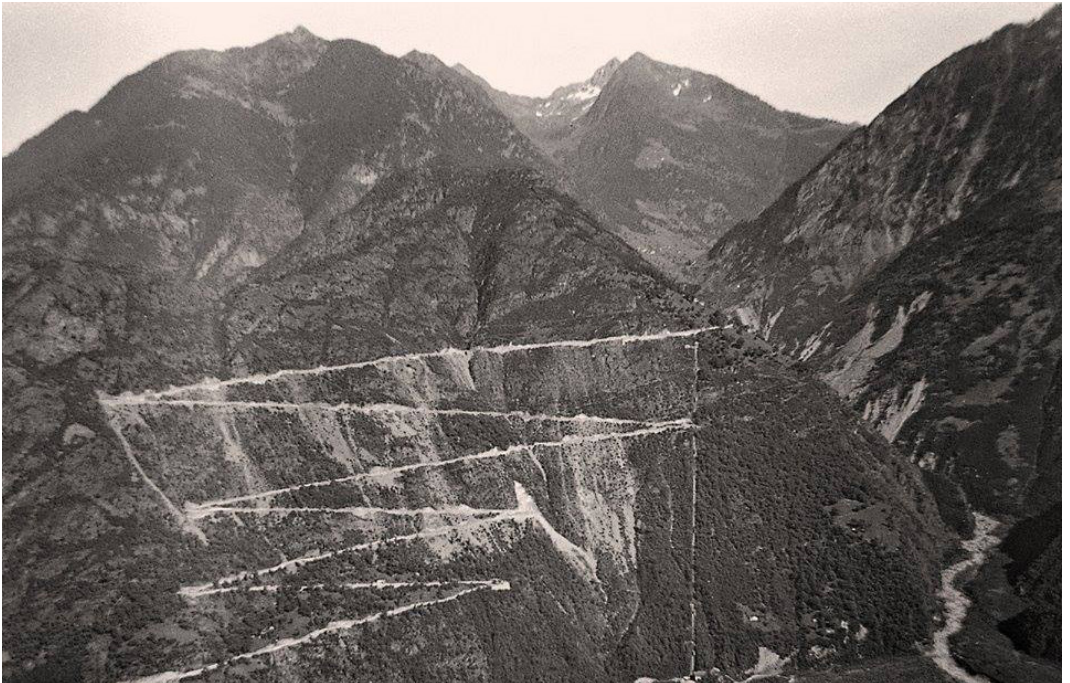
In the first decades of the 20th century, an idea where mountains were productive both in terms of agro-pastoral activity and the hydroelectric and tourist industry, would be approved by both locals and outsiders. For the local inhabitant, this vision will resound as an opportunity for emancipation from an exhausting traditional life. This factor

will initiate a historical phase in which the Alps will slow down their depopulation in favour instead of the acquisition of new actors such as tourists, athletes, hotel owners, ski resort management personnel, managers, etc. Equally important will be all those figures such as architects and engineers who will be called upon to shape a new high-altitude city.

The development of new residential settlements, new road and tourist infrastructures will constitute the archetypal elements for a modern idea of civilised mountains. If for many architects and engineers the pure objective was to make a wild territory habitable, for many others this experience will be perceived as a reason to erect an experimental laboratory. The ultimate aim of this choice can be sought in the desire to overcome the experiential limits imposed by the metropolitan universe, adding, as in the case of the dams, new forms and values to modernity. While a certain caution will be applied to the experimentation of new typologies and architectural languages for housing, the design of infrastructures will not be entirely similar. Guided by the glamour of the so-called "technological sublime", numerous professionals worked on the production of ever more disruptive constructions in terms of shape and dimensional scale. Illustrations produced by artists such as R. Broders, H. B. Libiszewski and N. Stoecklin denounced an image of the modern mountain in total detachment from the picturesque one of the 19th century. In indeed, if previously the protagonist subject was the magnificence of the mountain, now the role is ceded to artificial works that tenaciously challenge the physical limits of nature. Architectural vision and dialogue is no longer related to the scale of the Alpine village, but is amplified to embrace the landscape. From this emerges a historical period in which the destructuring and denaturalisation of the Alpine territory will be defined. An action that for most new actors will be well acclaimed and supported.

Within this "laboratory" there will also be professionals who, although delegated to the design of artefacts for habitation, will take a distance from the morphological typologies of vernacular architecture. If for many, in fact, the living house had to keep resonances with historical artefacts and thus for the custom of the place, for others the architecture could take on new meanings. Already in the second decade of the 20th century, the research carried

L. Bolzoni, "Le architettura dell'altrove: aspetti del costruire alpino nella contemporaneità"





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out revealed examples where anthropic works were seen as a solidifying tool for interaction with the landscape. In support of this thinking, the “invention” of the single-pitch roof was a new device to relate the construction to the surrounding alpine environment. In accordance with this philosophy of approach there were numerous architects such as Heinrich Tessenow, who in 1918, for the Bohler House, tried to stigmatise an idea of a house extruded from the surrounding terrain. Equally important is the research carried out in planimetry where irregular shapes were favoured in order to increase the relationship with the landscape. An important contribution was made by Lois Welzenbacher’s research for the Rosenbauer house and the Heyrovsky house, thanks to which he sanctioned the idea of a landscape that was not pre-existing and extraneous, but rather an internal material of the project. For his works, he opted for organic shapes in order to enhance the interaction with the terrain’s topography. He also studied a so-called “fan-shaped façade”, where architecture is transformed into a panoramic machine. Welzenbacher will in this sense be the promoter of a theoretical strand that will embrace the idea of architecture being literally shaped by the physical and visual interaction of the landscape. No less important will be, in 1927, the arrival station of the Nord-Kettenbahn cable car, where Franz Baumann will implement a strategy aimed at the total loss of any traditional figurative connotation in order to deform and make the artefact take on the appearance of the mountain itself. This type of “topographical” approach, in a certain sense, gives back justice to the mountain imagery offered by Bruno Taut’s early illustrations for “Alpine Architektur” where the anthropic element assumes the same appearance as the natural one.

A. De Rossi, *Op. cit.*, p. 162-169



Residential building set in the mountain
scape

On the overall, buildings constructed throughout the first half of the 20th century and the first post-war decades were invasive and completely in contrast to historical settlements. An idea of housing increasingly similar to the “city house” (in terms of typology and language) developed in parallel with an increasingly uncontrolled growth of modern Alpine settlement, the latter with strong reference to the urban city system. All the new house, hotels, restaurants, car parks, road infrastructures, ski resorts, hydroelectric power stations were the results of a laboratory that for decades experimented a new type of high-altitude civilisation. A

radically different scenario from the contemporary one, where attention to the theme of the limit, empowerment, rethinking and redevelopment of the Alpine space oblige to less heroic desire.

The historical phase we are currently experiencing is in fact marked by the patrimonialisation of mountain areas that criticizes urban and industrial forms of development. The Starting Point of the Alpine heritage paradigm will occur with the already mentioned "Discours de Vallouise," delivered by French President Valéry Giscard in the year 1977. With it, the invasive modernist approach will be abandoned in favor of small-scale interventions, defense and preservation of the environment, new centrality of history, Alpine material culture and unprecedented affirmation of the importance of local populations. A new development system of the mountains is given to a new generation of actors. An intermediate vision that seeks to restore value to the concept and themes of the "pictorial landscape" but does not necessarily reject the image of urbanized territory. For this purpose, the practice of patrimonialism opens a sensitive view toward issues of environmental preservation, tradition, heritage and local communities. Nevertheless, oftentimes, the goal and objective remains unchanged: the only possible and credible form of development for the alps is the practice of tourism.

Our architectural research, confronted with such themes and issues, acquires more and more profound significance. The meaning of such study is amplified by going to integrate not only efficient programs for the constant re-use of the project, but of architectural forms capable of implementing a dialogue with the identity forms of the site. In this sense, historical tradition takes the value of "truth" to be taken as an example, a dividing line between the "beautiful" that embodies adequacy and conformity and the "ugly" that embodies the sphere of a system that is not appropriate to the context. While tradition claims a central role in research, it is equally appropriate to maintain a view of it not as a predetermined "given" but as deriving from an evolutionary process that has generated different thinks over time. From this the meaning of "tradition," as absolute truth, takes on a value that is not entirely true. Instead, it could be argued that the forms of tradition are revisitable through more or less incisive modifications, implementing different actions of translation of the models to which we refer. Such an

architectural approach, defined by many with the adjective "metasenic"(action of mutation and recombination of meaning on heritage matter) , will be the basis of the design choices of the our research.

The investigation, placing its principles on groundwork issues, assumed a double investigative focus. On the one hand an abstract and generic one in direct relation to the definitions of "ground attack" of the "Ticino school," on the other hand one related to the local tradition of soil management.

The possibilities of the relationship between soil and architecture explored in the works of L. Snozzi, A. Galfetti, L. Vacchini, M.Botta and many other Swiss architects gave rise to reflections on how our artifacts, regardless of formal appearance and local tradition, would establish a relationship with the landscape. Terminologies referring to the architectural section such as sit, root, fly, float, and again terms such as join, detach, and stick for the plan view is concerned have gradually formed a design vocabulary.

Having identified the surface as the organizing and modulating element of space, the research has been directed toward understanding how it relates to the vertical element, which in the mountains is declined as supporting the horizontal plane, as sectioning off the territory, or again as a natural element that is juxtaposed.

Within this broad system, therefore, the variety of examples was indentified in order to understand different intrinsic characteristics and be able to consciously convey them to the project.



THINKING LANDSCAPE

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Within this broad system, therefore, the variety of examples was identified in order to understand different intrinsic characteristics and be able to consciously convey them to the project.

This methodology of investigation allows us to first highlight the variety of systems that allow people to shape the land in order to make it livable. Cases of simple land filling and deportation, flush cut or blasted rocks, and retaining walls constitute the majority systems identified on site. The selected photos demonstrate the existence of a biunivocal relationship between natural landscape and anthropogenic construction, which varies in relation to the construction methodology and materials chosen. A wall made of local stone establishes a system of relationships quite different from the same wall made of concrete.

From the site investigations, the design research developed toward the selection of a vertical plane system that could bridge the relationships between horizontal planes positioned at different elevations. The selection was made through a process of concrete and manual experimentation having the goal to reinterpret the elements observed in the landscape.

Through the various attempts made on plasticine model, a certain attention to the retaining wall emerged. Personal architectural sensibility, combined with observation of the design essence of surface area contained by a wall, rejected the choice of modern concrete systems and assuming interest for the stone ones. Although there are various declinations of stone walls, our interest turned toward a well-known element that is part of the historical cultural heritage of the entire valley. It is the widespread system of dry-stone terracing, which, since the 15th century, has constituted a landscape image where natural and anthropic form generate a harmonious and inseparable dialogue. Created in the past as the first "infrastructure" of soil containment with agricultural purposes, they will acquire in time a remarkable aesthetic and symbolic value. In support of this, such objects, already widely protected

by local inhabitants, were recognized in 2018 by UNESCO as an Intangible Heritage of Humanity. Stone terraces, not only is a symbolic cultural value, but it has also an aesthetic meaning of considerable interest. If, in fact, land infrastructural works, since the 20th century, acquire their own formal and material independencies with respect to topography and the natural environment, the definition of terraces with respect to such characters is not as true. A study of the formal aspects of stone retaining walls showed how they have significant links with the morphology of the soils. Each wall delicately and rigorously follows the "plasticity" of the terrain, thus going on to define, more than any other man-made object on site, an inseparable harmony between man-made and natural elements. So often the link between the two is so remarkable that the terraced landscape is read not as a man-made and man-modified landscape, but as a natural fact. Perhaps, in addition to the formal aspect, one should recognize the role of materiality, which, being made of local dry-treated stone, returns an image similar to the rocks and boulders present on site. Having recognized the architectural values of the "stone wall" and in general of the "surface," they will be codified in two cornerstone elements that will allow the three projects to dialogue with each other, but above all to establish an important relationship with the anthropic and natural heritage of the place.

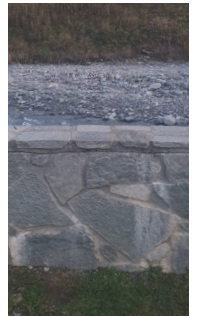
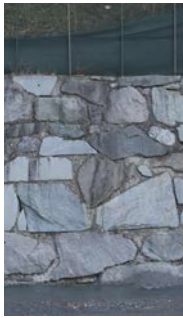
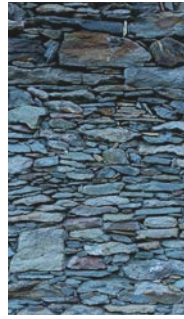
The construction detail employed within the project also experiences a process of observation and reinterpretation of stone walls and their construction process. The research sets itself the goal of returning a constructive system and an aesthetic image indebted to the local tradition but entirely experimental. The codification of inseparable principles turned out to be an essential piece to proceed to the action of mutation and recombination of meaning on the heritage material. Plasticity of facade, archaism and dry system will turn out to be fundamental themes to be maintained.

Prima la Valtellina, "Muretti a secco
dichiarati Patrimonio dell'Umanità
dell'Unesco"





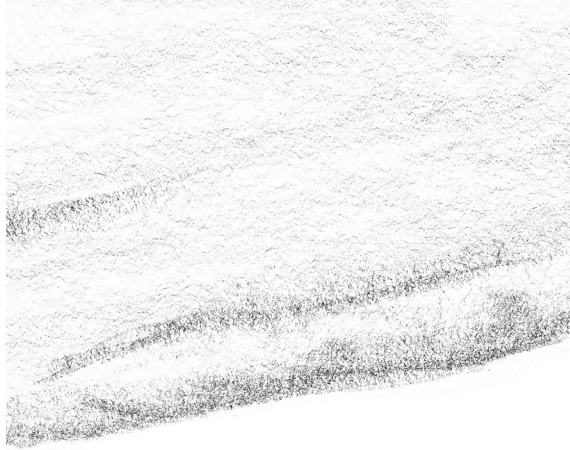
Walls

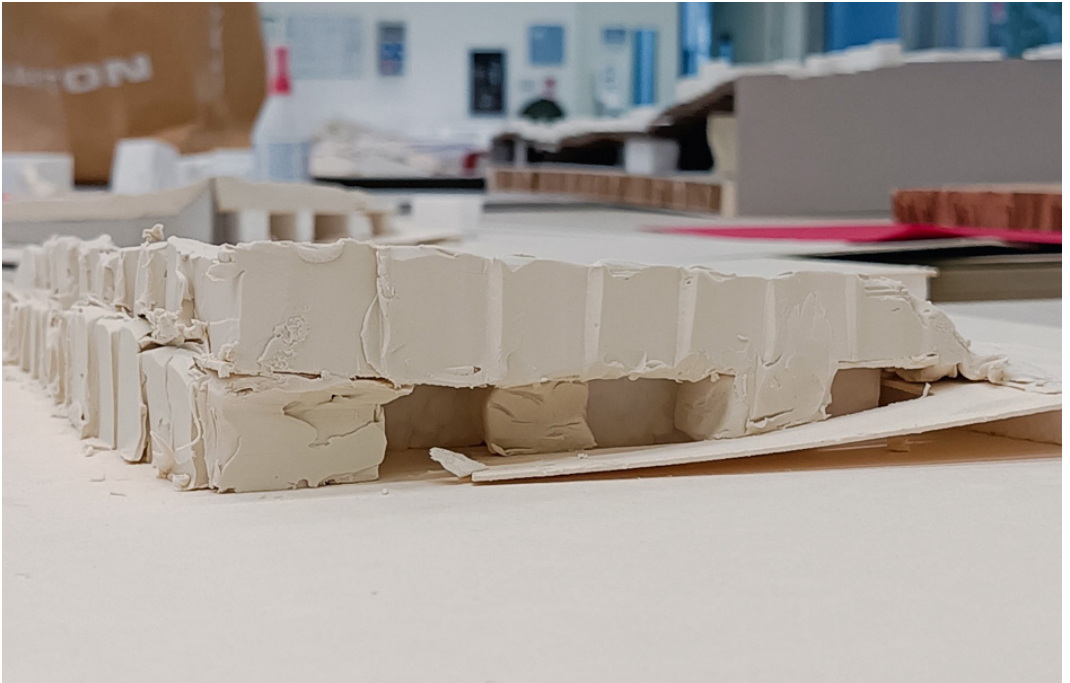


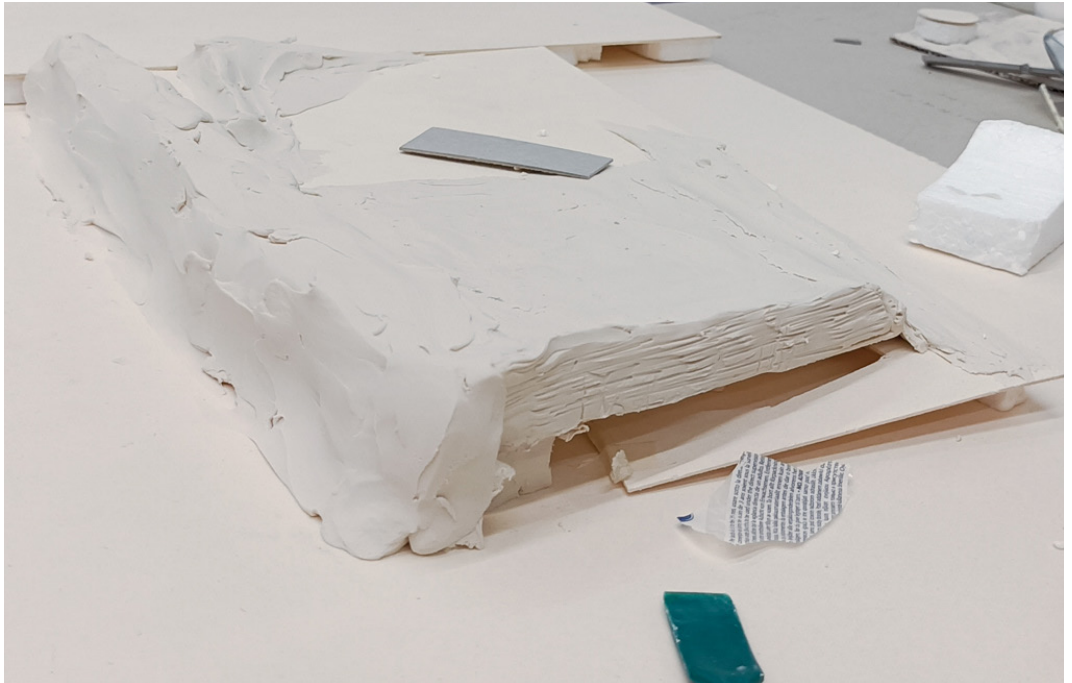


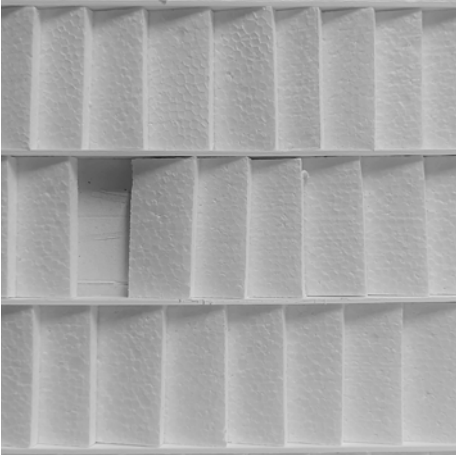
Analogies













Treccani, "Serpentinoscisto"

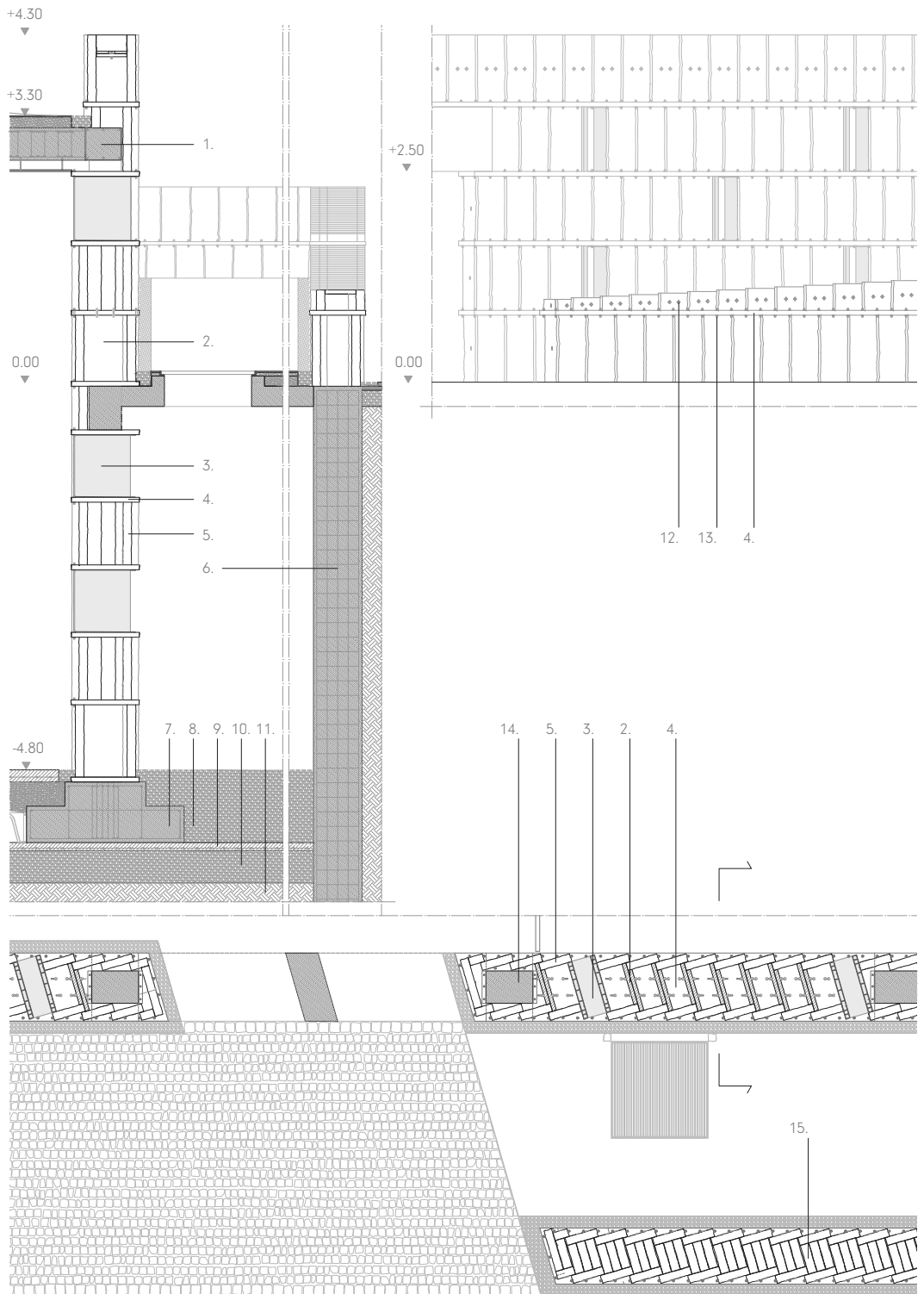
During on-site research, our attention fell on a material constituting part of the material heritage of the entire province of Sondrio. It is the Serpentinoscisto of Valmalenco, a material of high technical and aesthetic value already widespread in medieval times throughout the province. Serpentinoscisto is a type of serpentine (metamorphic rock) with schistosity characteristics and therefore part of the slate family. Formed by antigorite, olivine, magnetite, chlorite and pyroxene, their texture determines the rock's physical-mechanical characteristics, such as fissility. This ability allows the rock to be divided into fine slabs. In this regard, since ancient times, this material began to be used for roofing and paving surfaces. Later, during the 20th century, it began to be introduced inside masonry as well. Intrigued by the physical and aesthetic characteristics of serpentine, research developed through observation of the processing of this material. Beginning with the observation of extraction and ending with installation on the construction site, the investigation was enriched with a series of information regarding the production process. Fascinated by the aesthetics of the quarry and its own vertical cuts and the shadows they produce, a new construction solution was identified. A series of blocks 80 cm high, 10 cm deep and 40 cm wide are slightly rotated and placed side by side in sequence with each other. Together these blocks form true facade bands that are then replicated vertically and staggered. Each band is supported by serpentine shelves having a height of 6cm and a depth of 85cm. The vertical force generated by the entire wall is transmitted autonomously by the facade blocks, without resorting to any other construction element. The means by which the wall was self-reinforced led to the placement of additional (non-visible) internal vertical reinforced concrete blocks having a lay perpendicular to the facade blocks. The plotting of the blocks, termed "a spina," can be easily read on the horizontal section plane as well as in plan. This solution allows stiffening and extinction of possible horizontal movements of the serpentine blocks. Equal to the solution of "dry" laying of the ancient terraces, also in our case, the principle is maintained through the use of burnished brass bolts fixed at the shelves. Each bolt is called upon to dampen horizontal movements of the splitting "costa" (splitting plane perpendicular to the direction of the stone grain) and simultaneously of the splitting planes (splitting

plane parallel to the direction of the stone grain) and vice versa. Possible principles of earthquakes and thus horizontal movements are absorbed by the attachment (by bolting) of the shelves to the reinforced concrete pillars hidden inside the wall and having the function of supporting only the weight of the slabs of the walking floors.

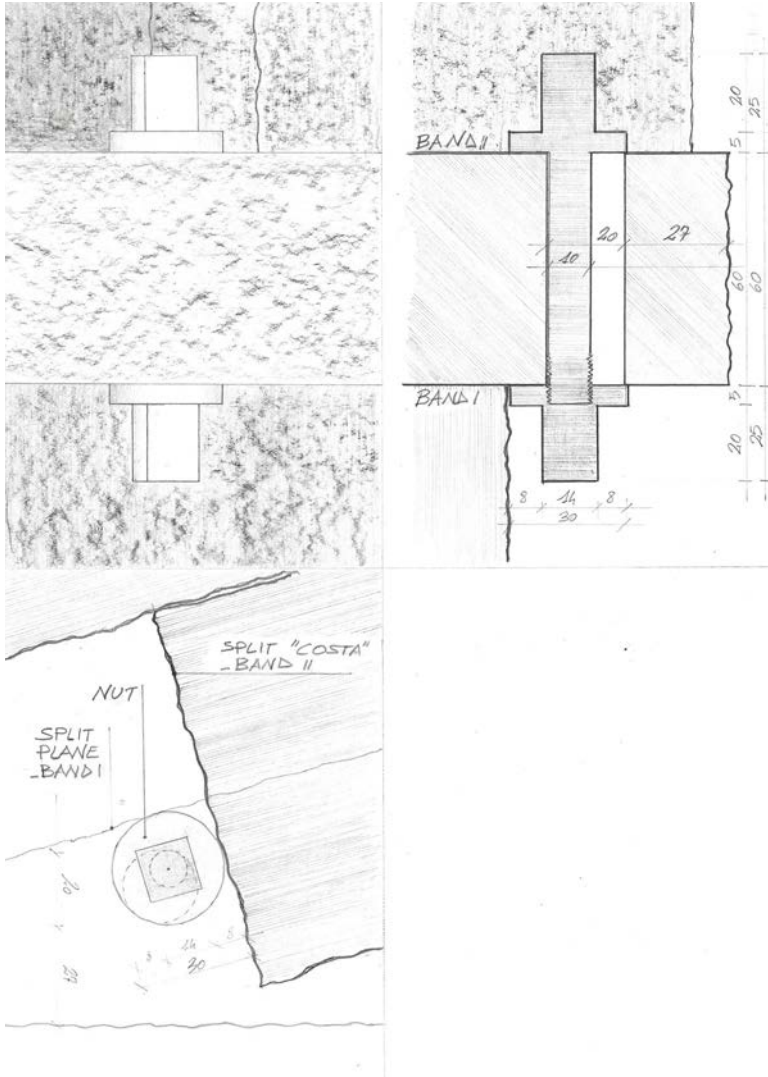
The solution adopted led to the realization of an entirely new and previously untried construction system. Plasticity of facade, archaism and dry system have finally taken a physical declination. The arrangement of the blocks and their inclination give rise to a facade system tinted by the colors of serpentine and shadows. Shade, easily read in the small voids and compressions and expansions of the surface of the historic walls, is indeed emphasized. The archaic sense of historic walls is re-proposed through the use of natural split blocks, respecting the principle of "dry" construction. The technical rigor of historic walls is re-proposed both in technique but also composition.

In the specific case of the parking lot, having the need to ventilate the interior spaces, we opted for the introduction of burnished brass boxes in order to create facade holes. The composition of them traces some of the solutions photographed on site where bands of holes are replicated and staggered from time to time.

Spending time on the Alps' landscape, in addition to providing a rich background of information and data, allowed us to note how anthropogenic artifacts, compared to urban environments, establish an important confrontation with rigid weathering. In Alpine territory, maintenance and refurbishment operations are quite ordinary. As serpentine is a very strong and resilient material, it allows minimizing of possible accommodation operations. In addition to this, our design sensibility is not averse to the mutation and aging of materials and thus of the entire perception of the work. Referring to the desire to integrate the project within the landscape, the research favorably accepts the aesthetic change of the work. Elements of various colors such as lichens, along with black machines given by the flow of rainwater and snow will help with the passage of time to make the natural landscape take over the works. In short, the project takes a life of its own.



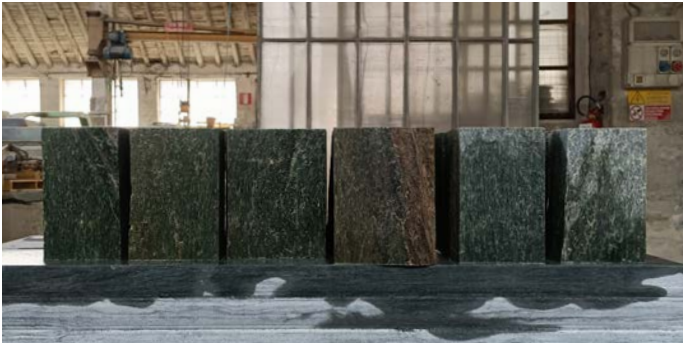
Car parking wall's detail. Scale 1:20



Burnished brass bolt's detail. Scale 1:2

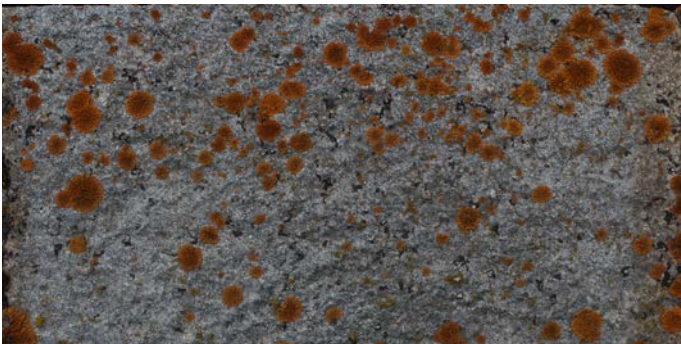
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|---|---------------------------------------|
| 1. Slab in reinforced concrete. Thickness 40 cm | 9. Foundation platform. Th. 10 cm |
| 2. Reinforced concrete blocks. 52*5*80 cm | 10. Foundation Layer. Th. 40 cm |
| 3. Holes in burnished brass | 11. Subsoil |
| 4. Serpentine shelf. Thickness 6 cm | 12. Fixing systems in burnished brass |
| 5. Serpentine block. 40*10*80 cm | 13. Burnished brass bolts |
| 6. Bulkhead | 14. Reinforced concrete columns |
| 7. Foundation | 15. texture of the wall head |
| 8. Gravel | |

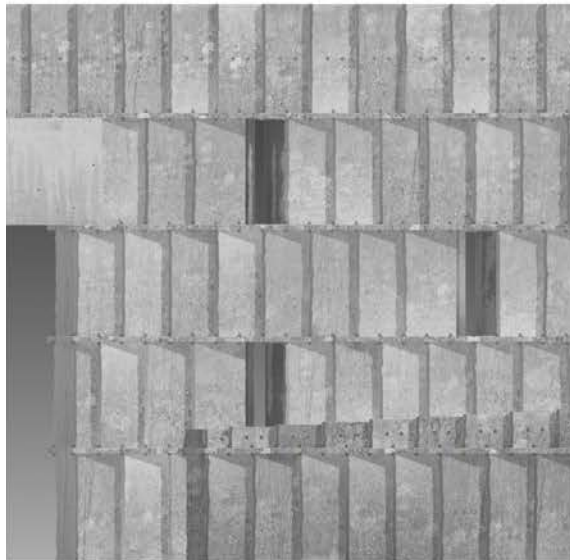
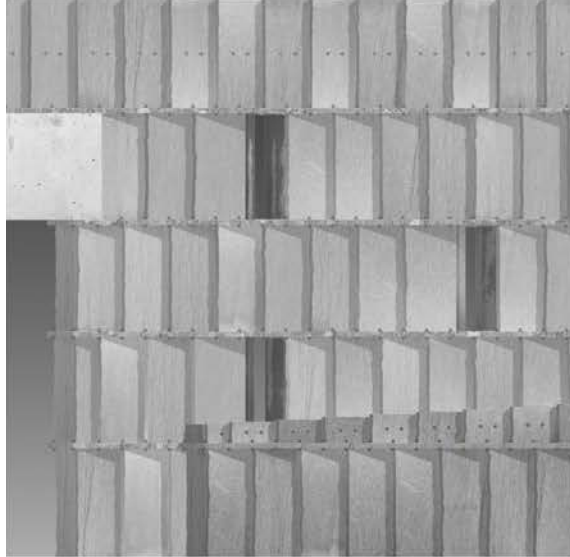
















THE PARKING

Surface and wall, the elements that characterise the Valtellina landscape, become in the project what binds the three interventions and allows them to delicately become part of this scenario.

A project that in its essence is groundwork, a movement of earth that generates an artificial landscape that fits into the natural one by listening to its language and reinterpreting it. It is precisely in a more urban context that the Parcheggio di Porta was born, located on the main road through Bormio and, as its name suggests, at the gates of the historic centre. The residential urban system that forms the direct surroundings, however, suddenly gives way to the hollow of the Frodolfo stream, beyond which the Alute plain opens up. This change also corresponds to a change in elevation that leads to a 2.30 meters drop from the street level from which the car park is accessed to where it ends, on the opposite side.



As with terracing, which is precisely the solution to a problem of managing a slope, the wall and the surface act in the project as mediators to manage a change in level. A system of ramps and baffles in fact accompany the lowering of the surface and become part of the same surface treatment system that is characteristic of the entire car park.

If the pedestrian path allows for a fluidity of movement through the project in a varied way, the car logistics system follows a logic of filling levels from the lowest to the highest. Following the path of the latter, a ramp leads directly to the second basement, which is intended to be filled in this way so as to leave the upper floors as public space when not in use by cars. This is in fact the floor with the largest number of parking spaces, 51.

Despite the fact that this is an infrastructure, where functional logic must influence the design choices, the reflections developed on the relationship with the site, the landscape and local techniques always permeate the desire to build a space with spatial qualities. The car park, precisely because it is dug into a piece of land, draws on the imagery of the quarry, which is very clear to the inhabitants of Valtellina. The vertical perimeter surface thus becomes a rough wall of sprayed concrete, as in David Chipperfield's Cava Arcari in Zovencedo, a performance space that nevertheless retains the qualities of the old quarries from which Vicenza stone was extracted. The same happens in the car park, where the local Serpentine wall reaches all the way down to the



Cava Arcari, David Chipperfield



0 5 10 15 20 25m

Masterplan Parcheggio di Porta and bridge











lower level in the arrival and entrance area of the ramps. A wall that opens up into small cracks where, instead of the stone slab, a prefabricated metal element is positioned to also illuminate the interior spaces. In the same way as in the landscape walls that occasionally reveal small holes.

The other walls, on the other hand, rough and 'dug' into the ground, contrast with the smooth concrete of the pillars, which instead refers to the imagery of the props supporting the excavations while they are made.

The horizontal surface, contained by these walls, maintains its characteristics of the ground, which moves with its undulations to modulate the different spaces. It thus happens that the lower floor also remains a landscape, a continuous surface that connects all three levels.

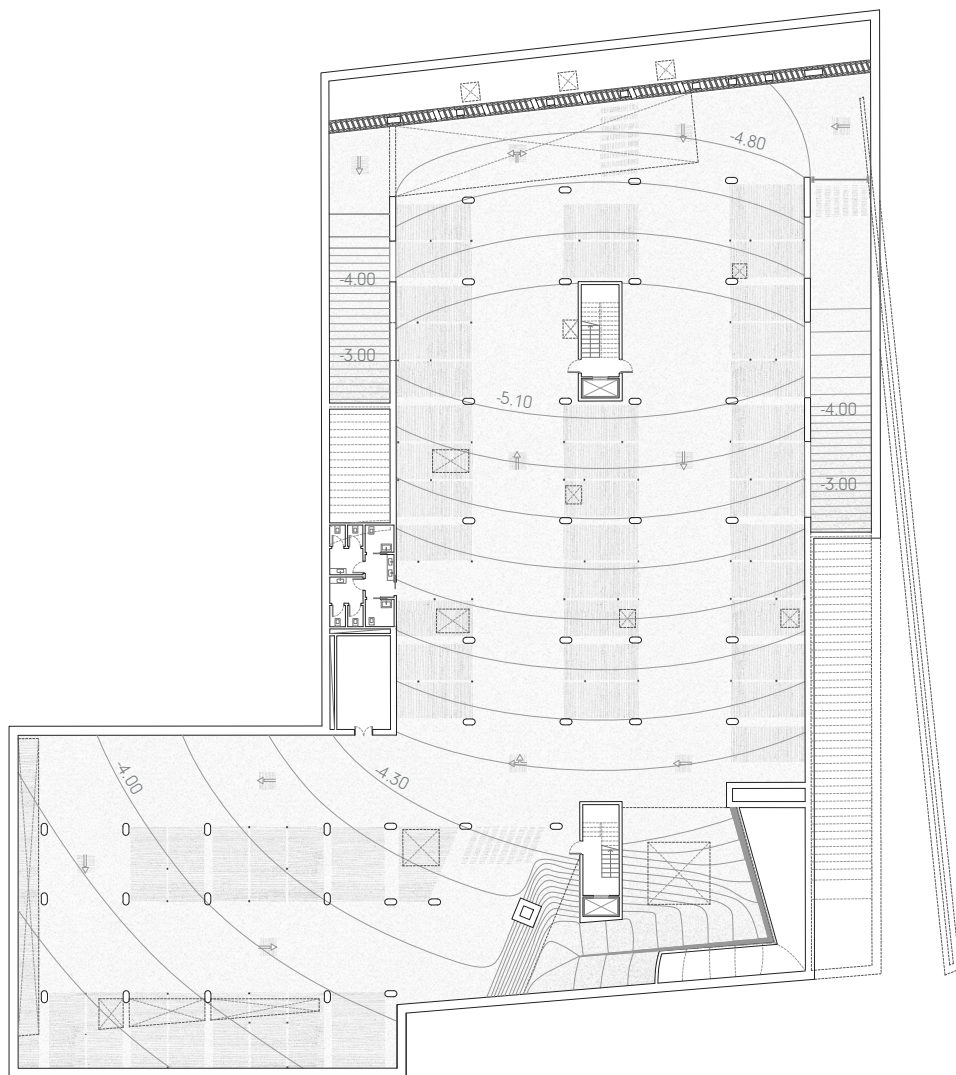
This continuity has also been possible and verified in the face of regulations concerning the compartmentalisation of parking spaces, in order to comply, even in a theoretical design exercise, with current standards.

As reported in Official Gazette No. 62 of 15/03/86. N.d.R. , a compartment may also consist of several garage floors, provided that the overall surface area is no more than 50% of that resulting from the sum of the maximum permissible surfaces for the individual floors in the table provided, nor that the individual surfaces per floor exceed 75% of those provided in the table.

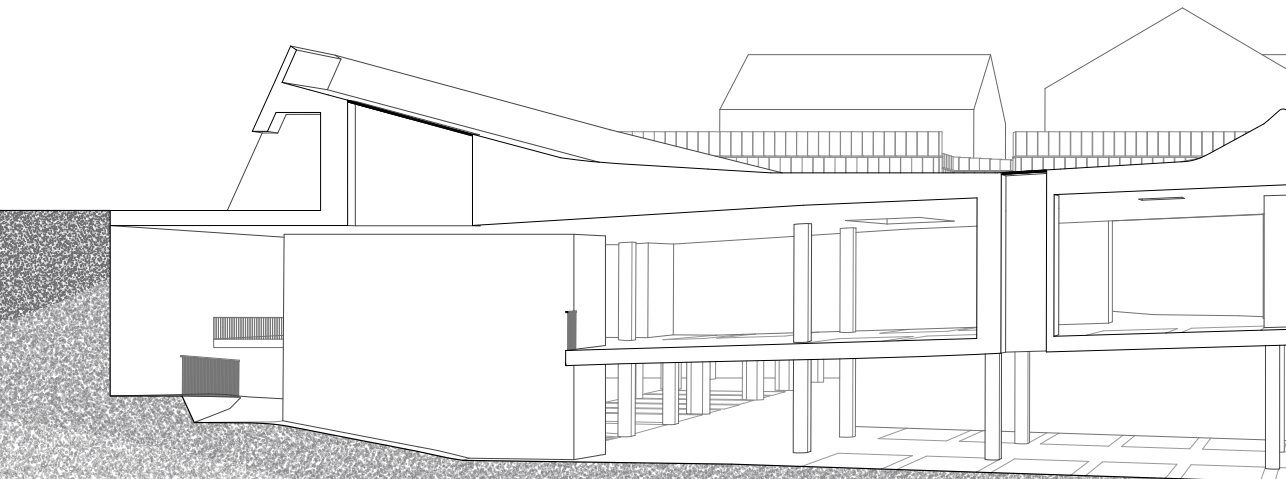
Limited to garages located on the ground, first and second basement floors, the surfaces indicated may be doubled in the presence of fixed automatic fire extinguishing systems.

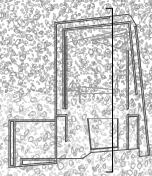
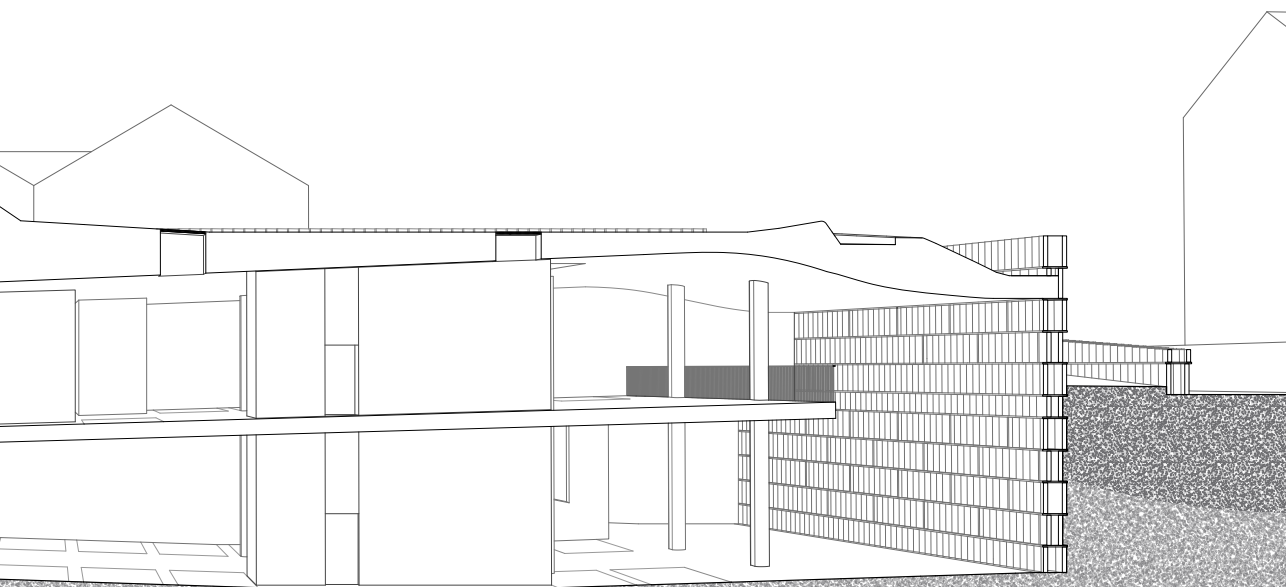
For the type in question, the table referred to indicates a maximum of 5000 m² for the first basement and 3500 m² for the second. Adding up the two maximum numbers gives 5000+3500= 8500 m² to be divided by two. 8500:2= 4250 m² which turns out to be the maximum area that must not be exceeded by the sum of the areas of the different parking levels. Since the second basement of the car park is 2258 m² and the first is 1426 m², the result of their sum of 3684 m² turns out to be less than the maximum permitted size, and it was therefore possible to think of the floors as a single plot running over several levels.

Thus the lower floor, despite its more functionalist nature of maximising the number of parking spaces, retains its essence as a landscape, which increases its slope at the ramps.



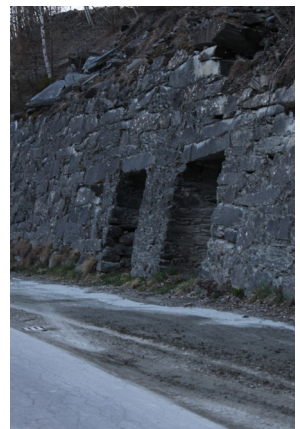
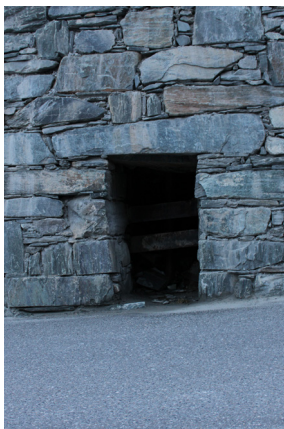
Car parking -2 floor





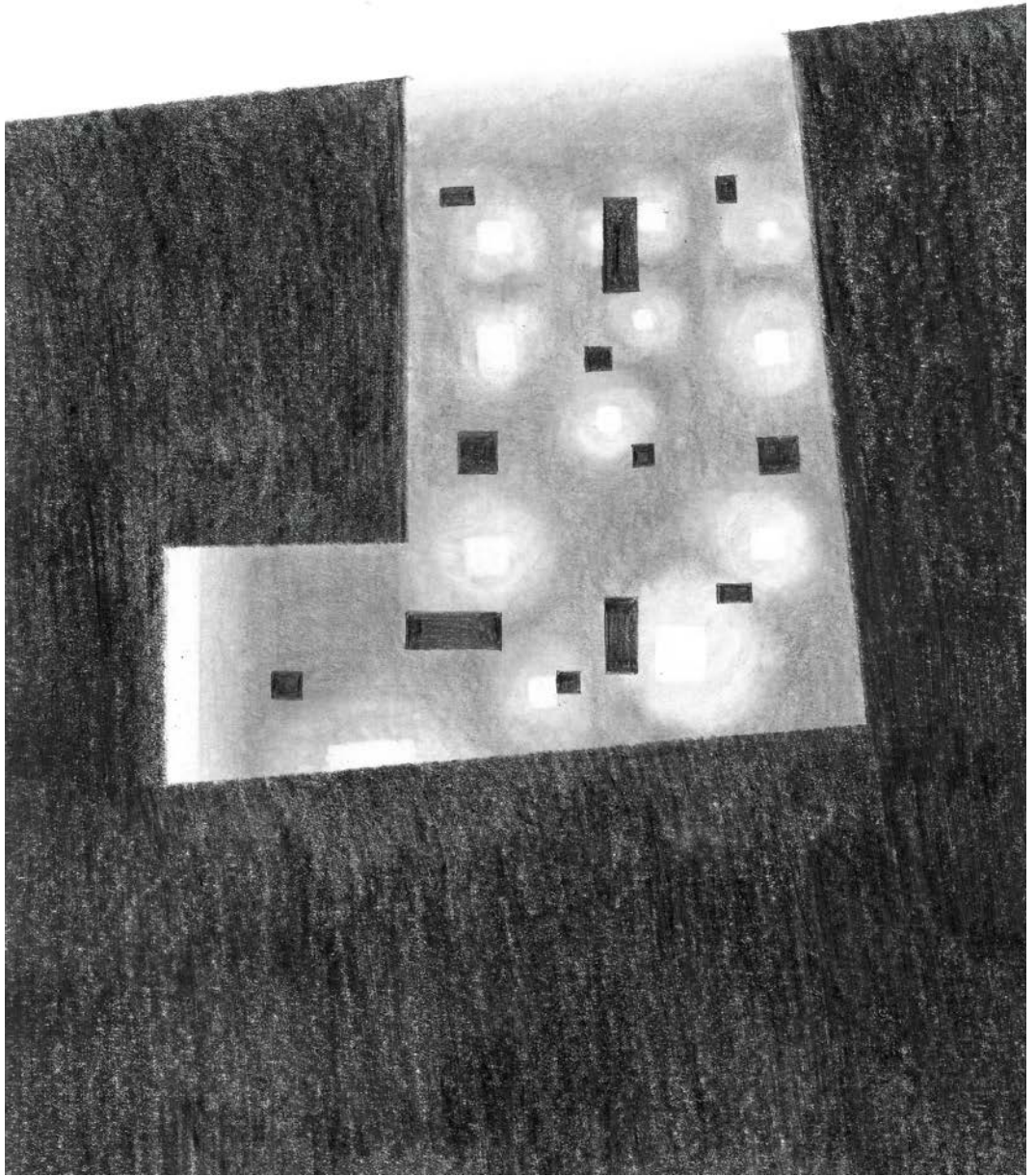
Car park perspective section

Gaps













It is from here, in fact, that the continuity of the horizontal element tends to take on a more oblique dimension, that is the pathway that connects the second with the first basement floor unwinds. Here there is a double height with a chimney of light that illuminates the vertical transition space. In fact, light plays a fundamental role in a project that aspires to go beyond the concept of a mere car depot, but wants to offer qualities such that it is possible to appropriate the place and interpret it in different ways.

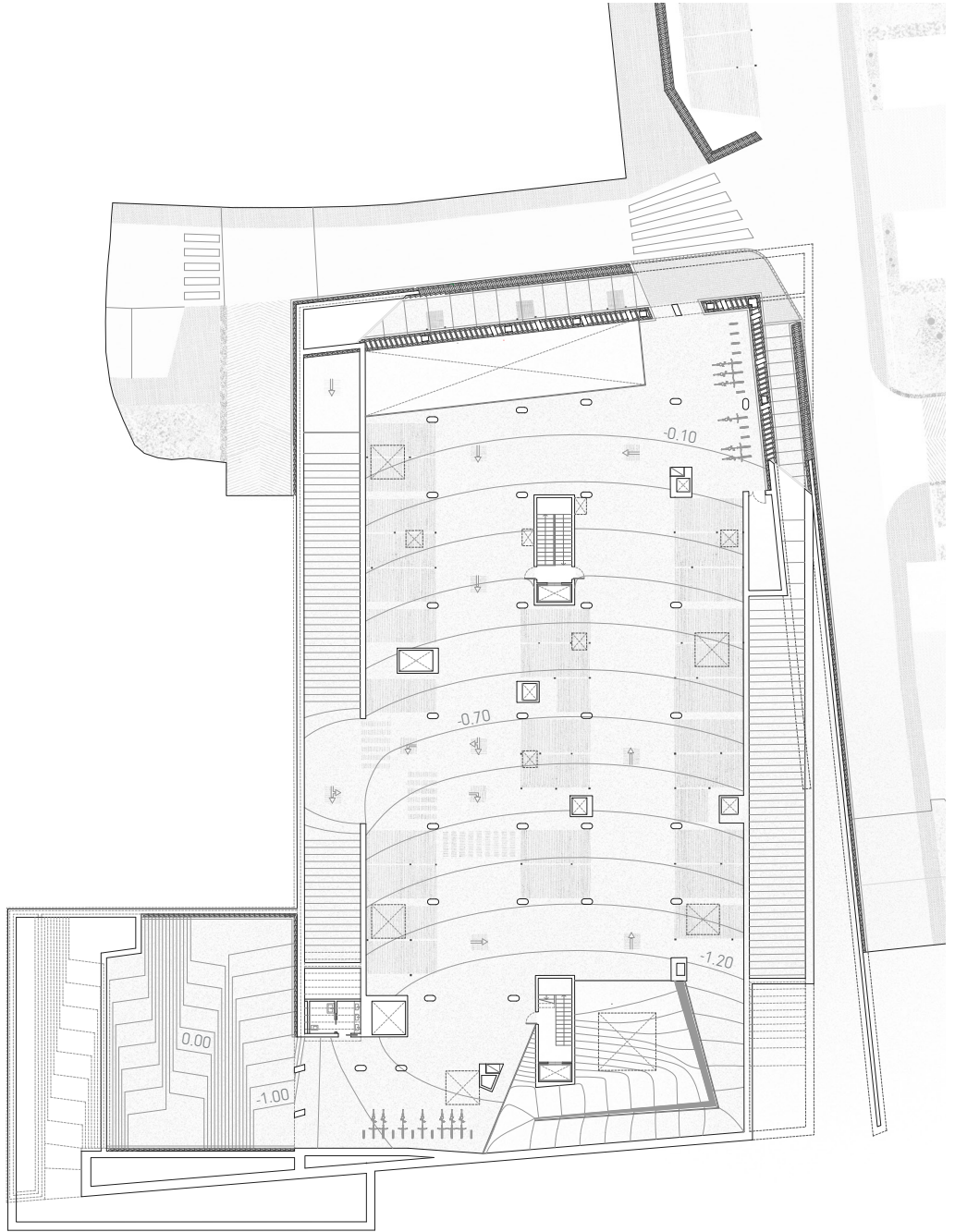
Boxes, with the same materiality as the quarry that characterises the side walls, are distributed in this floor as chimneys of light that also illuminate the lower floor, also providing spatial references that collaborate to resize and compose a space that is typically totally empty, such as that of the car parks. On the other hand, the light is offered in this floor as holes in the ceiling, which directly connect the surface level with the lower one.

In this case, a check was carried out too to comply with the Decreto Ministeriale of 1 February 1986 on "Fire safety regulations for the construction and operation of garages and similar", which requires in basement floors a natural ventilation of not less than 1/25 of the surface area of each floor. The 95.02 m² of floor -2 and the 70.2 m² of floor -1 fulfil this criterion, being greater than 25% of the surface area of the two floors, 90.32 m² and 57.04 m² respectively.

This floor, the -1, shows a transitional character between the lower floor, with the most efficient number of parking spaces, and the upper floor, which for most of the time will be a square space. On the one hand the 30 parking spaces make the best use of the available space, on the other they do not prevent this place from being read as a continuity of the surrounding public space.

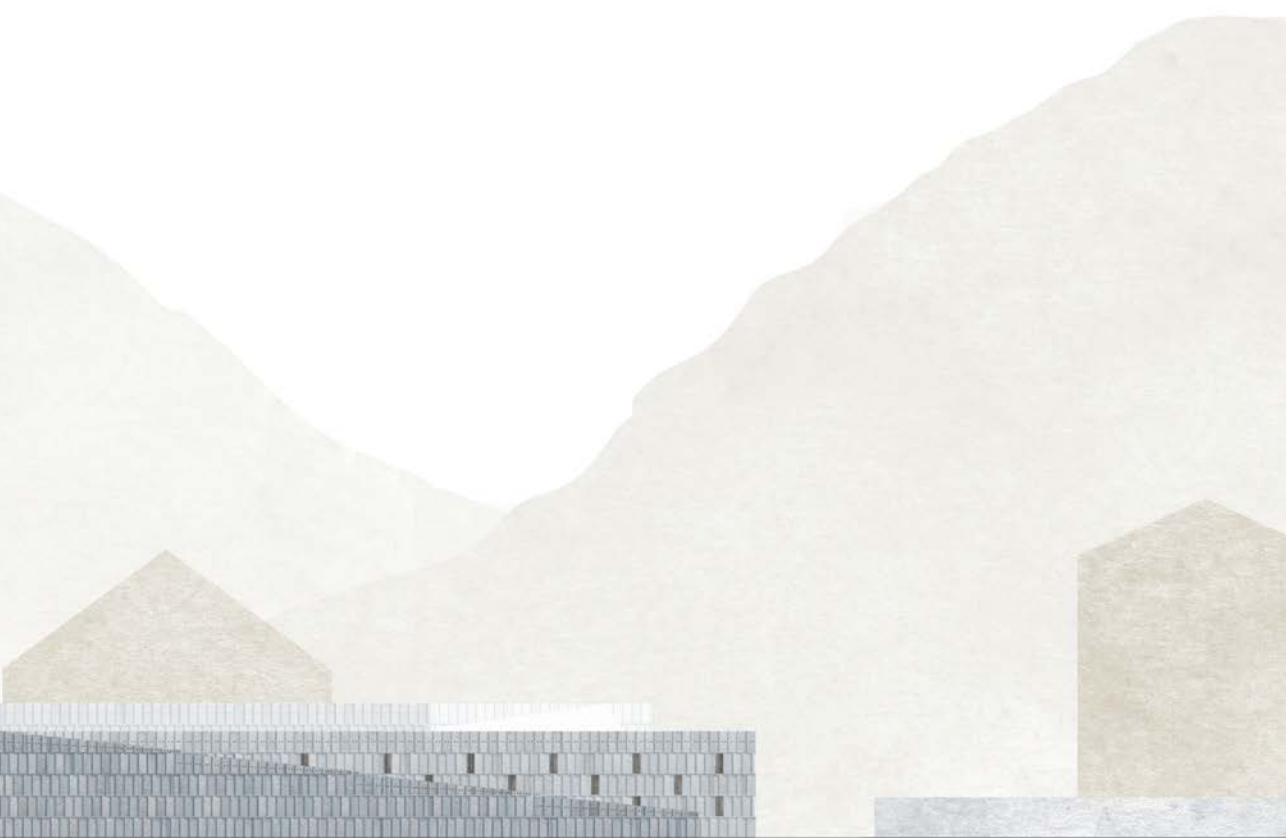
In fact, the pedestrian path leading to the bridge connects directly from here, at the same level, as does the ramp leading to the level of the main road leading to the city centre.

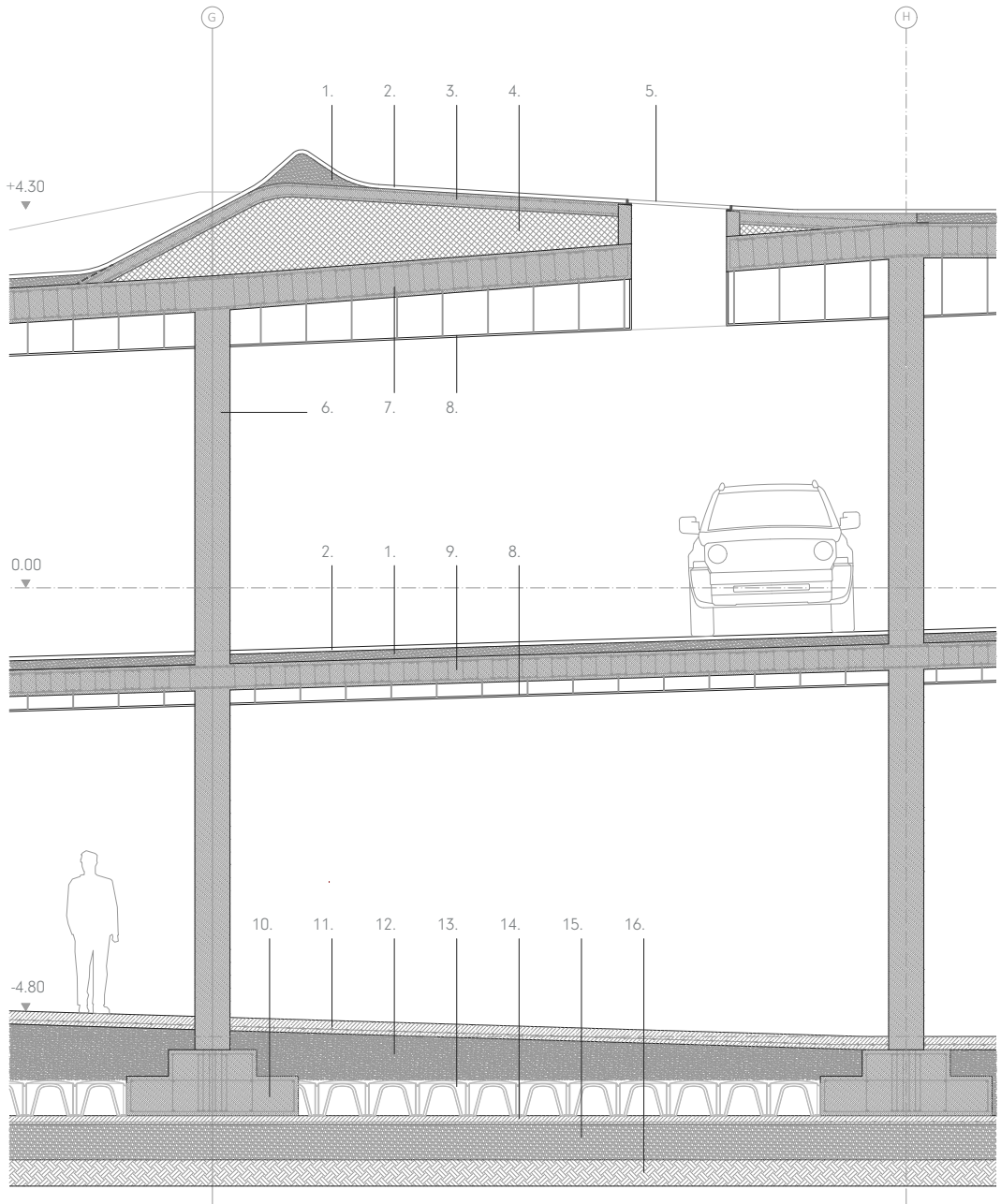
Taking this pedestrian route, one finds oneself on the last floor as far as the car route is concerned, and on the first if travelled in the opposite way by a pedestrian. Here the movement of the terrain, which almost merges with that of the surrounding landscape, is expressed in the clearest way.



Car parking -1 floor







- 1. Surface layer
- 2. Concrete
- 3. Secondary reinforced concrete slab. Th. 15 cm
- 4. Polystyrene
- 5. Ventilation grille. 120 * 120 cm
- 6. Reinforced concrete columns. 80*40 cm
- 7. 1. Slab in reinforced concrete. Th. 40 cm
- 8. Suspended ceiling

- 9. Slab in reinforced concrete. Thickness 30 cm. Inc. 3 %
- 10. Foundation beam
- 11. Industrial pavement. Th. 15 cm. Inc. 3 %
- 12. Foundation platform n.2. Inc. 3 %
- 13. Ventilation crawl
- 14. Foundation platform n.1. Th. 10 cm
- 15. Foundation Layer. Th. 40 cm
- 16. Subsoil

Car parking's detail



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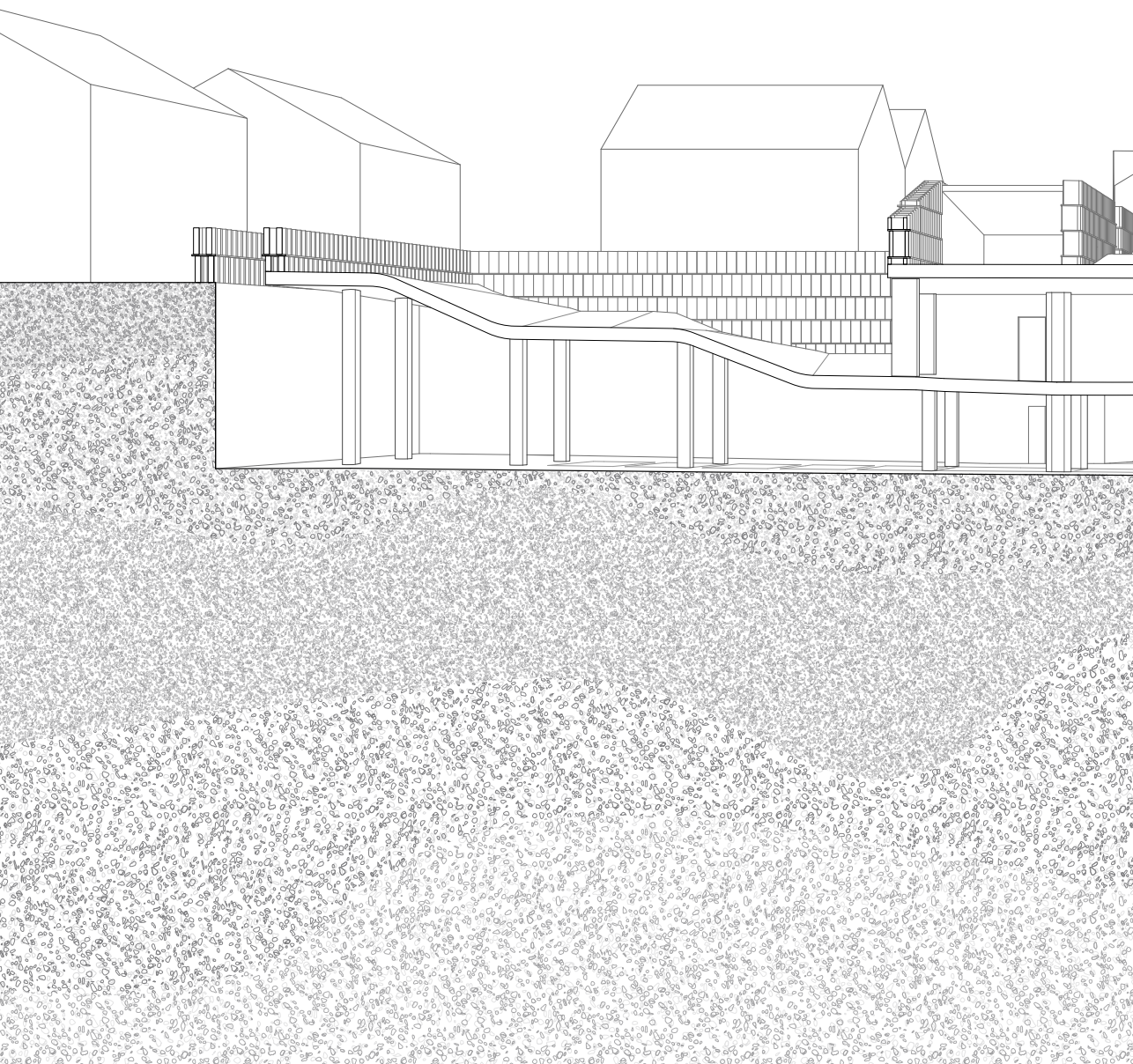
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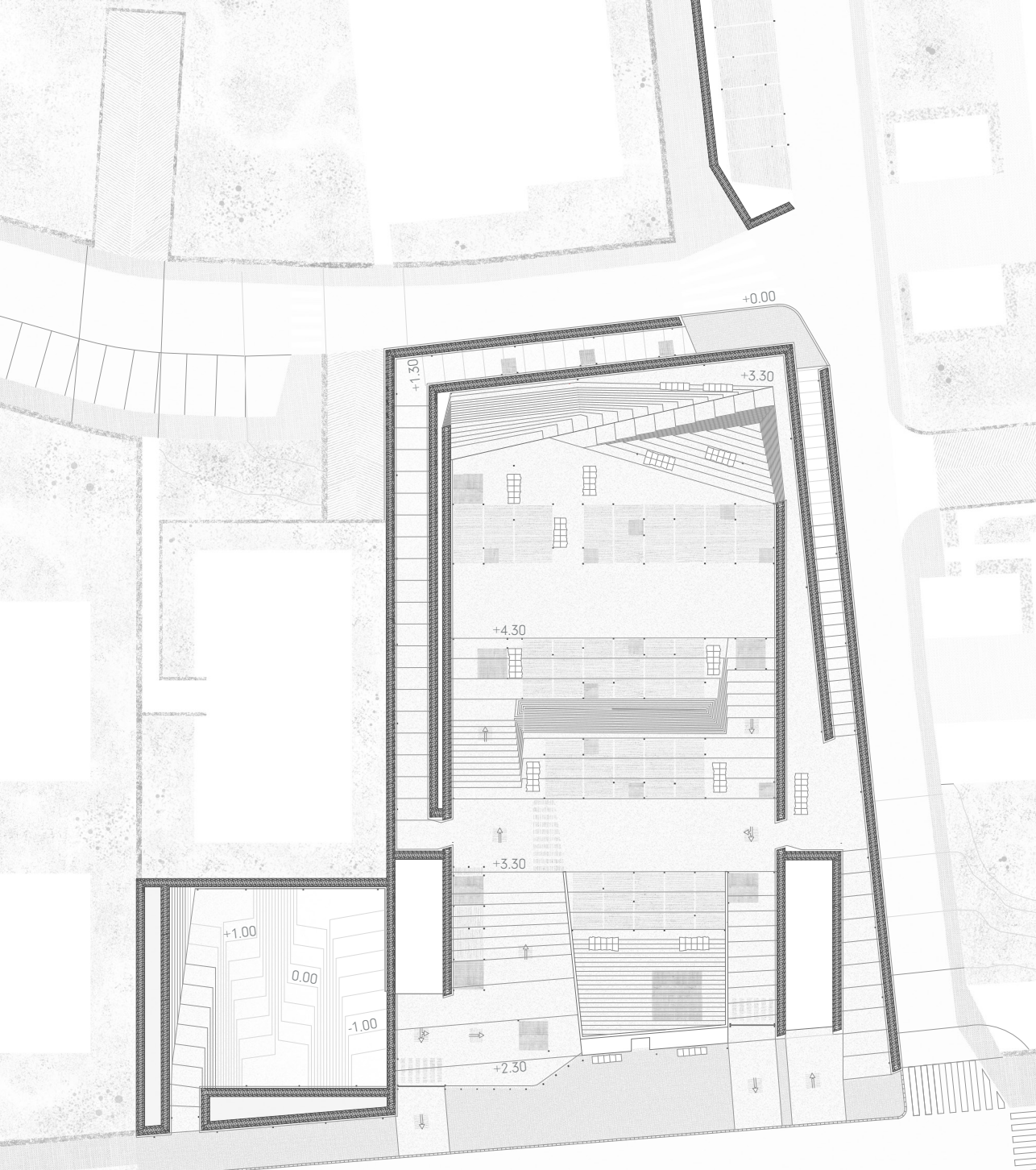
Taking this pedestrian route, one finds oneself on the last floor as far as the car route is concerned, and on the first if travelled in the opposite way by a pedestrian. Here the movement of the terrain, which almost merges with that of the surrounding landscape, is expressed in the clearest way. The research on the surface, on how to modulate the hollows and rises that organise the space, was the result of numerous experiments using maquettes, which is the tool that accompanied the entire design process and allowed the various hypotheses to be verified directly. In this regard, the material chosen is also indicative of the type of investigation that was carried out. In fact, plasticine made it possible to act plastically and modify in the course of the work as if it were a displacement of earth.

On the previous page: east parking facade

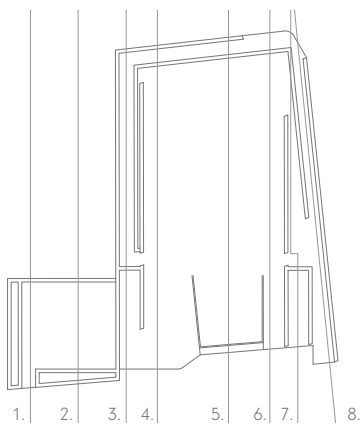
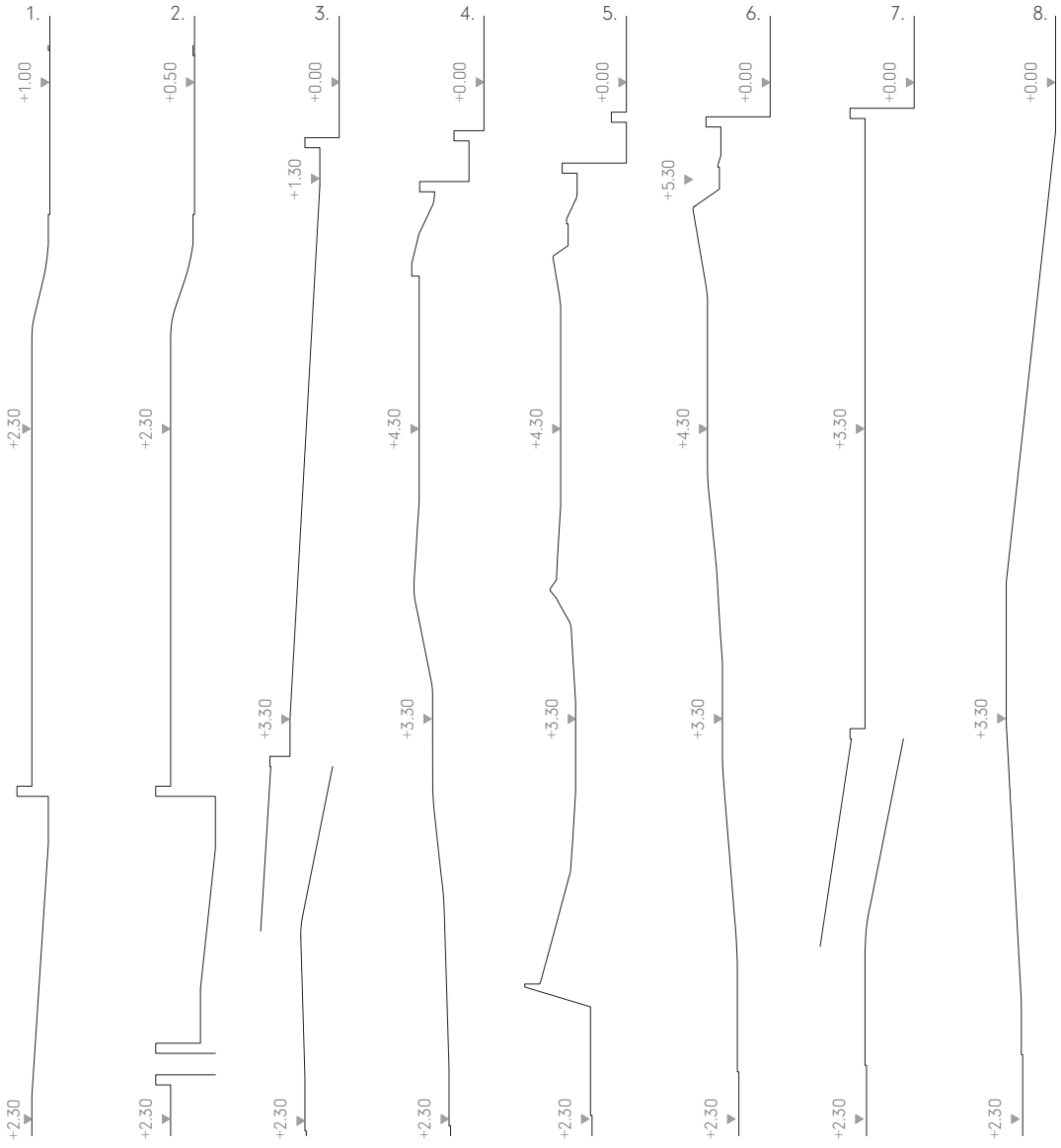




Car park perspective section

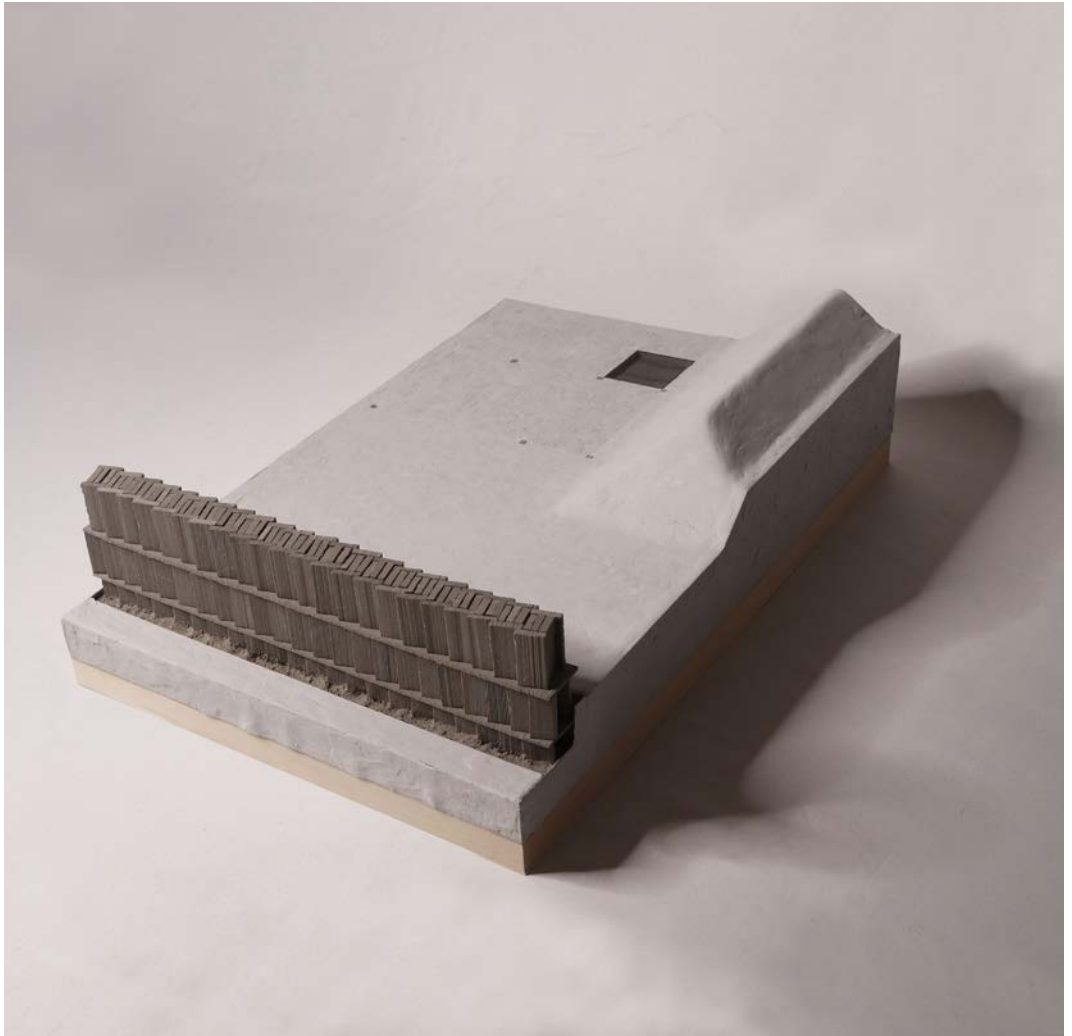


Car parking ground floor

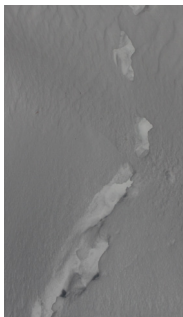


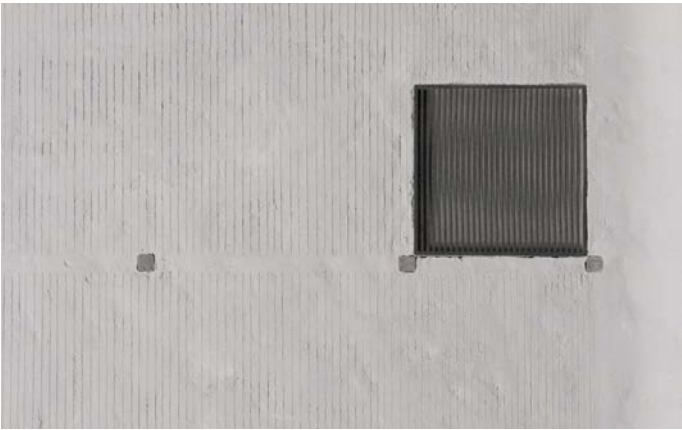
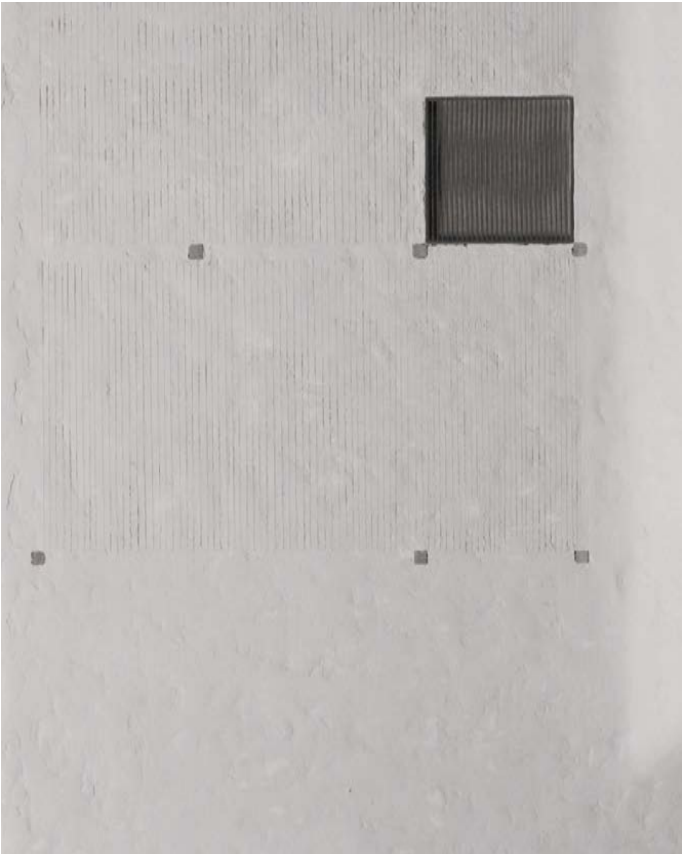
Sequence of ground floor sections





Footprints





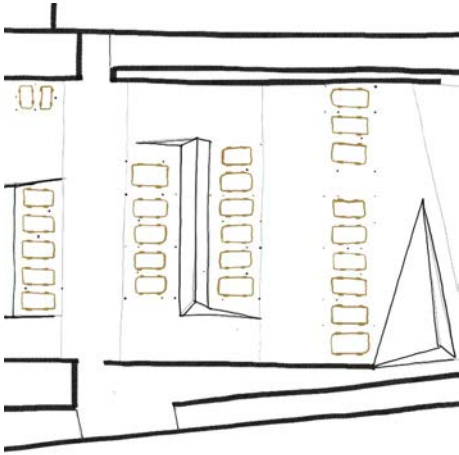
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Here one can also clearly read the constellation of small marks that stain the surface and signal the occurrence of something to pay attention to. It is often the case that in the mountain landscape one can recognise footprints made by wild animals, the fall of an object or left by the passage of a pair of skis. In the same way, it happens to recognise certain elements in relation to the transit surface. The square ventilation grids fit into the pattern marking the position of the parking spaces, characterised by the striped treatment of the concrete surface on which the grids happen to trigger, taking up the same directions. Next to these, however, cobblestones highlight this boundary, visible but blurred, which marks the assigned place for cars but avoids sharply marking these locations.

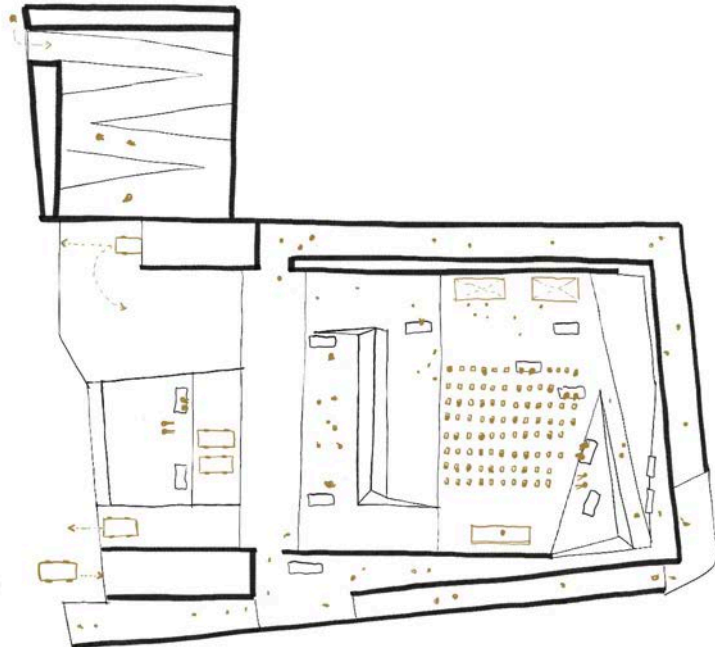
Finally, the lighting, which follows the dimensional imprint of the latter elements, picks up on the bronze details of the nuts that fix the serpentine stone system, a material that also covers the benches that are occasionally present in the landscape built by the car park.

In short, a combination of natural and artificial elements, a contrast between vertical walls typical of the terracing language and the continuous, undulating surface of the ground marked by small footprints that invite and suggest action.

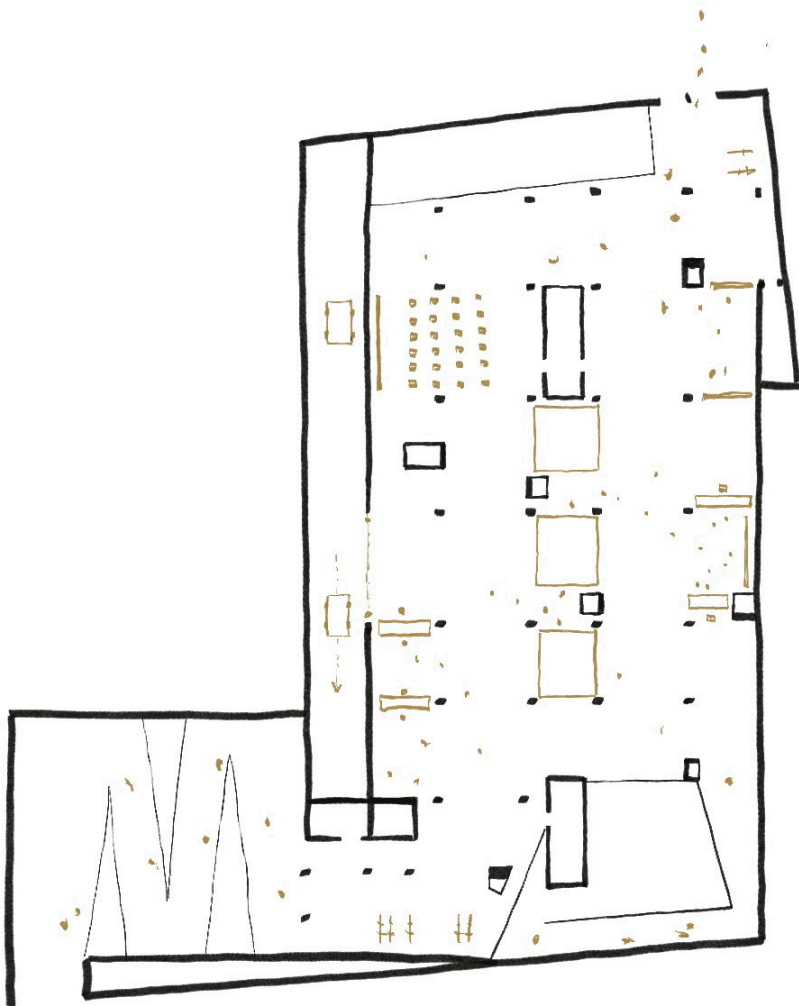


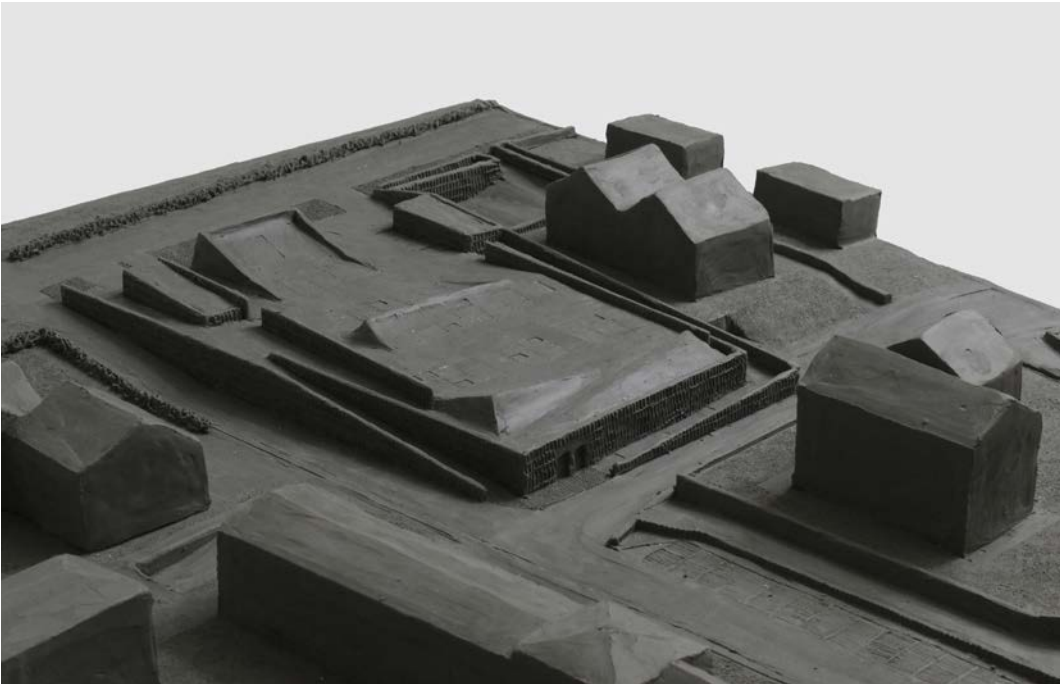


Parking



Plaza









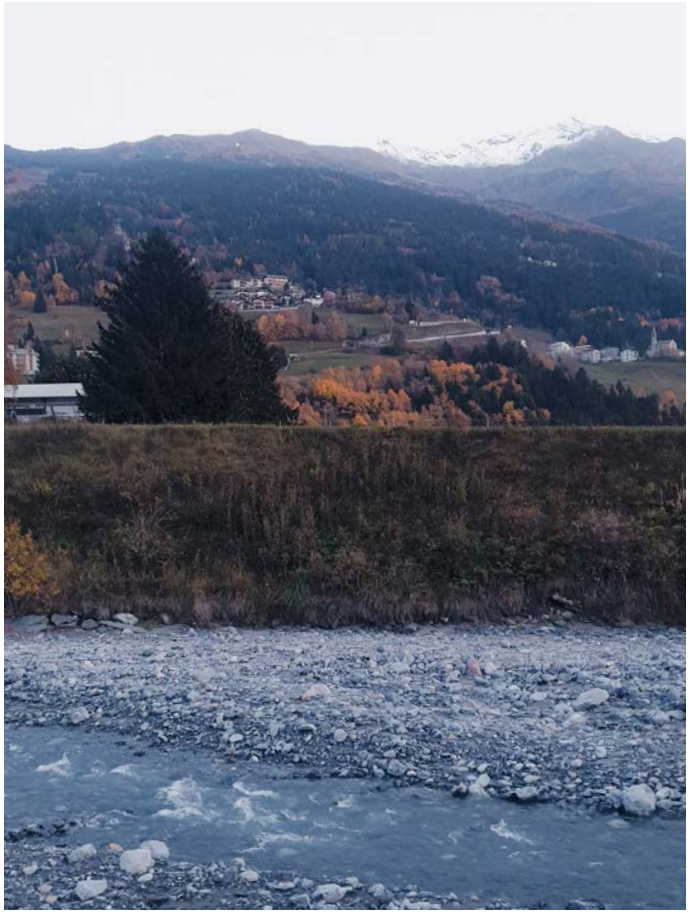


THE BRIDGE

Following the route of a visitor who, leaving his car at the new Porta car park, wants to head towards the ski area, the road that will be taken is the one to the cycle-pedestrian bridge. Between the two points there is a small road that merely serves the adjacent houses, but ends right where the bridge begins. For this reason it was decided to integrate it into the project and relate it to its two extreme points, the car park and the footbridge. Here again, the dry stone wall in serpentino marks the gesture of transition from the residential realm where the former is located to the natural realm overlooked by the latter. The rigidity of the walls of the parking, therefore, gradually give way to a more organic movement, which characterises the hollow of the Frodolfo stream and the Alute plain and the mountains on the horizon. This gesture is undertaken in embracing the redesigned space of the on-street parking spaces facing this street, but it becomes even clearer when the wall becomes the containment of a ramp on one side and of the staircase on the other. This is where the bridge arises, which with its curved line keeps the gentle hill of land and opens up to the soft shapes of the landscape in front. Here again, the patches on the surface, the sanpietrini, which lie along the path of the bridge and the cycle and pedestrian path, silently direct and indicate the lanes of travel. On a visual level, the project is also part of the same language of the wall that characterises each intervention. A cladding of Serpentino piode, with the same technique used for typical Valtellina roofs, brings with it the history and character of the place that the other interventions convey.

Underneath this cladding is the bridge structure, which must span 32 m with a width of 5 m for the bicycle and pedestrian lanes. This is realised by means of reinforced concrete shell, which due to its curved and convex shape guarantees rigidity to the system. On this base are also placed steel structures, with diagonal stiffening trusses, which allow for the management of both the increasing height due to the shape of the bridge and the construction of the parapet and the attachment of the rafters, which gradually degrade until they become soil again. These then generate subsequent bends that become rest stops along the cycle path that approaches the Alute with its scenery and leads towards the area where the pista Stelvio is and so the Olympic skiing competitions will be held.

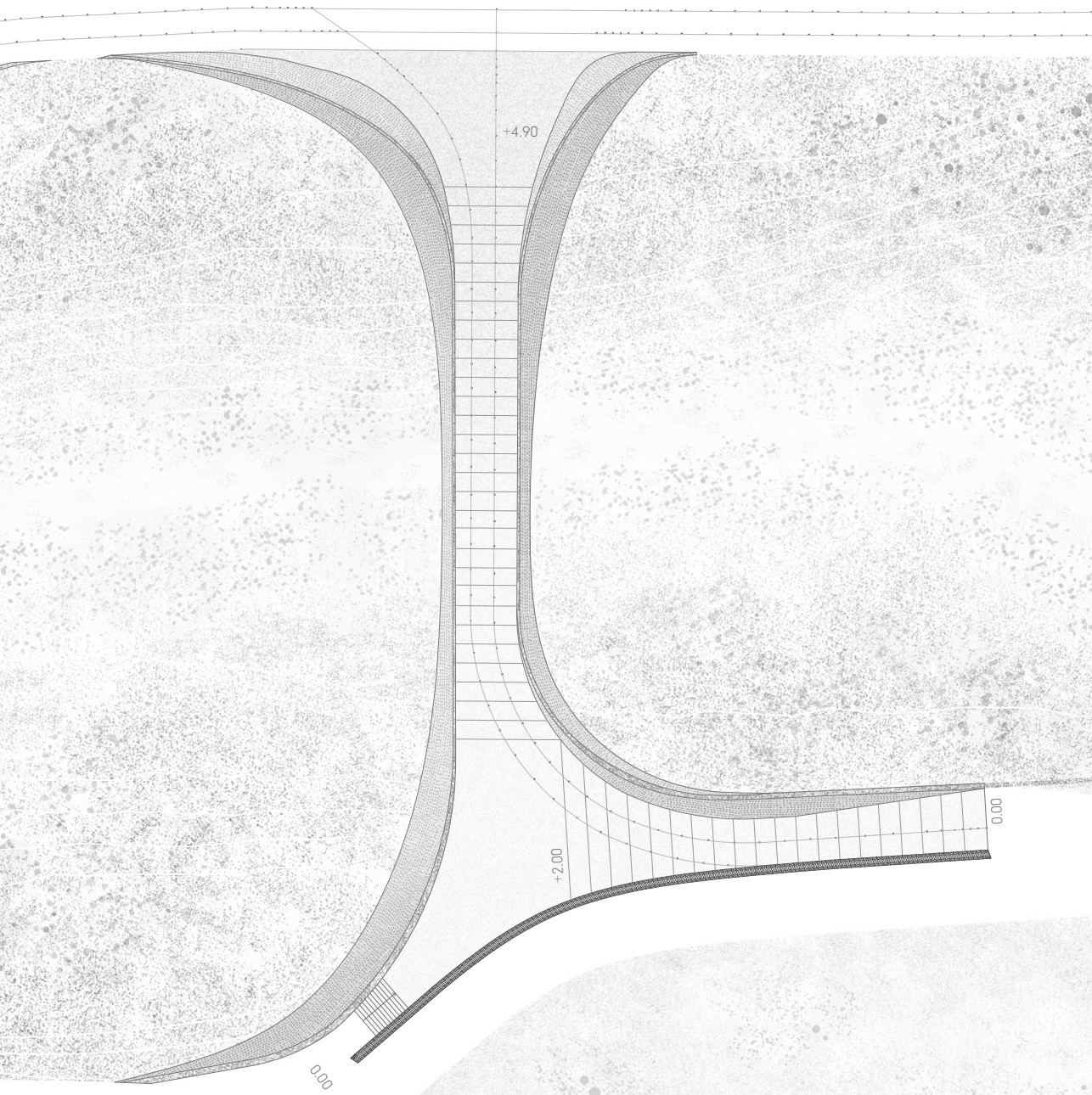




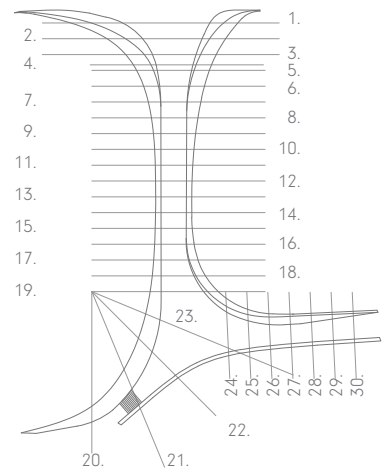
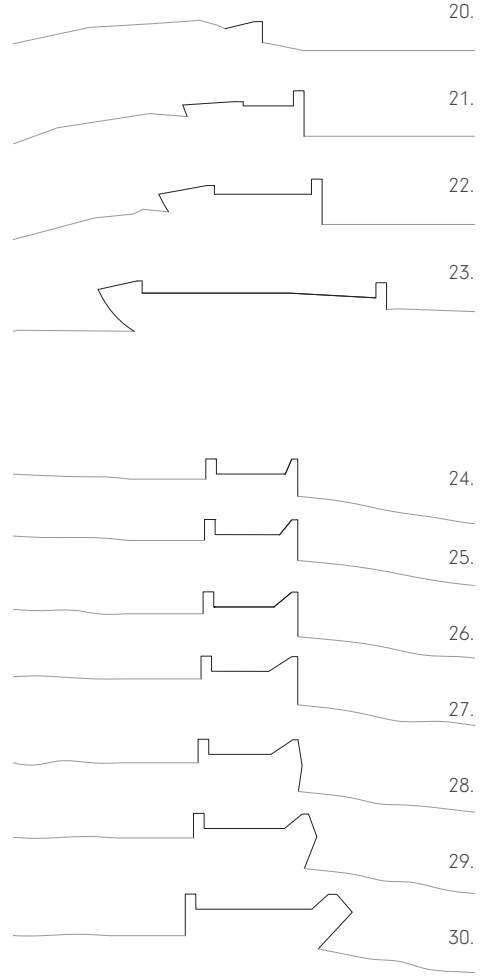
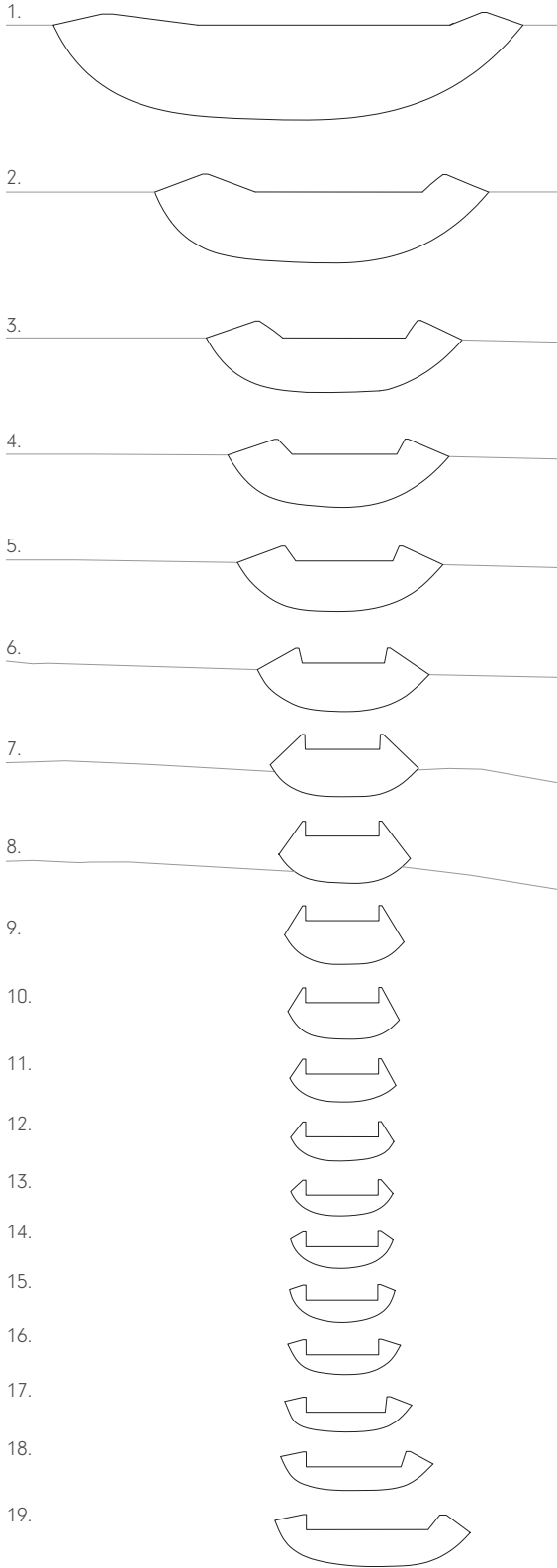


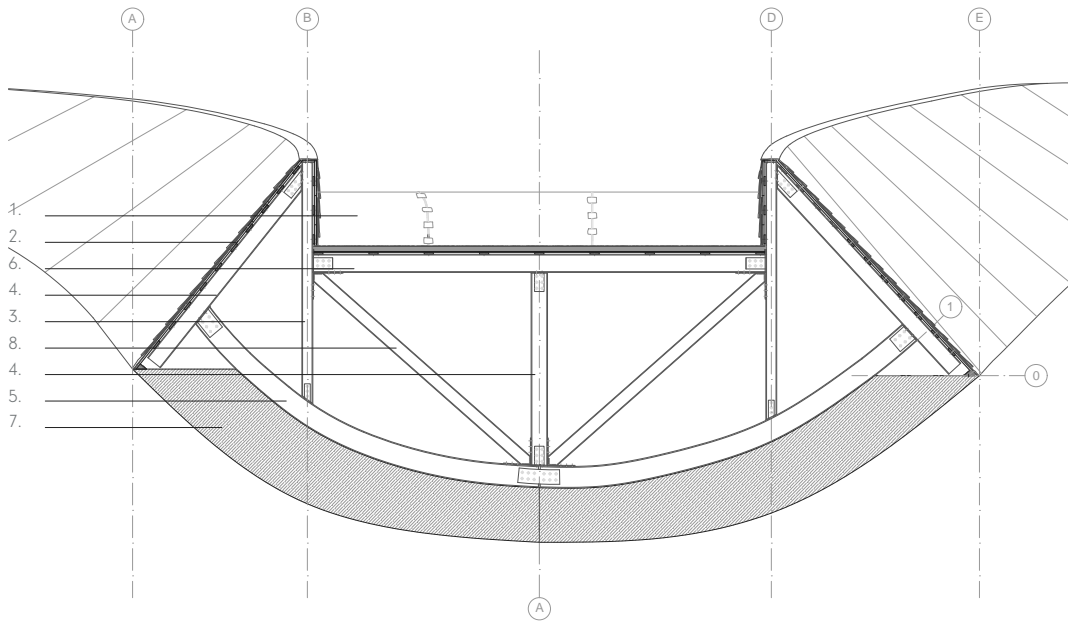
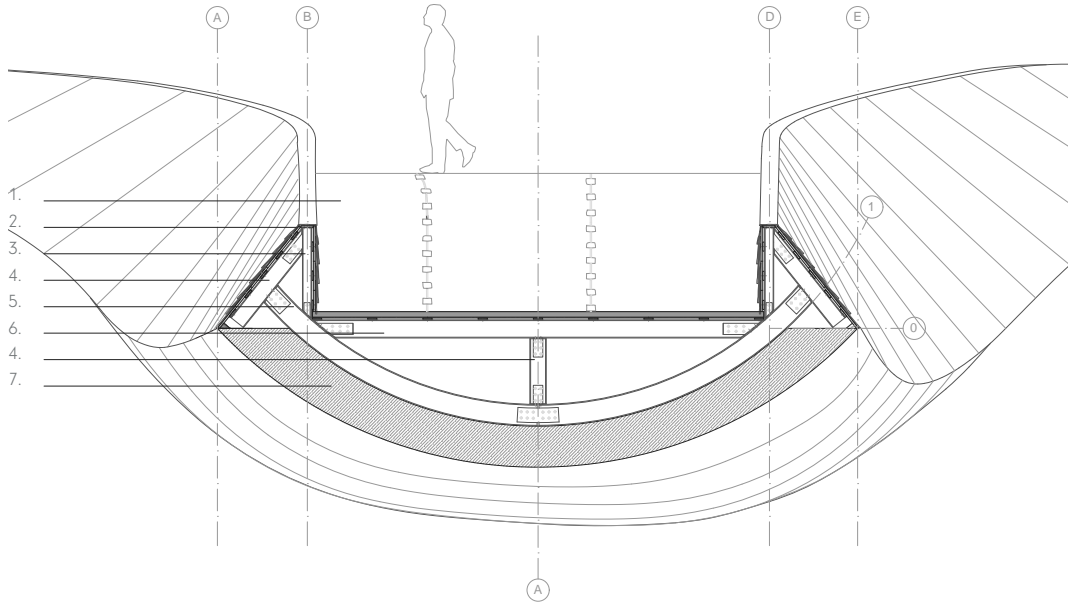






Bridge plan 





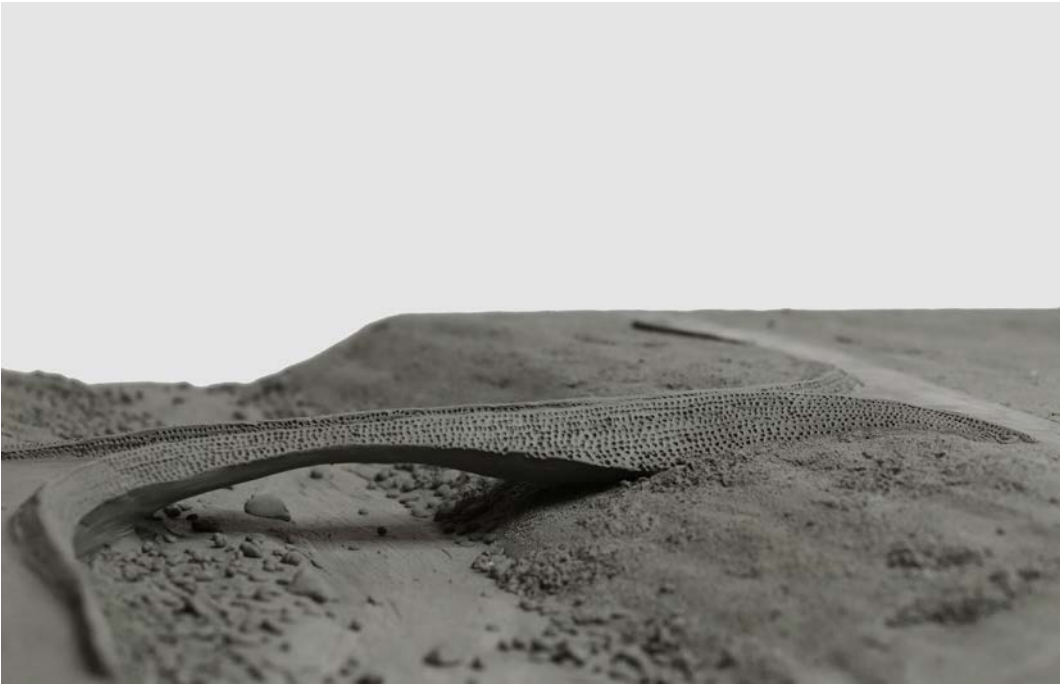
- 1. Concrete floor
- 2. Serpentine tile roofing
- 3. HEA 120
- 4. HEA 180

- 5. IPE 240
- 6. IPE 200
- 7. Prestressed concrete shell
- 8. IPE 140

Bridge's detail

0 1 1.5 2m







THE TRIBUNE

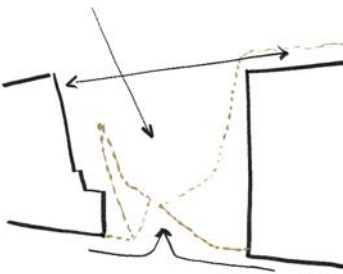
Finally it comes the tribune, which stands in the place that motivates the other two interventions. Along the Stelvio slope, in fact, the men's alpine skiing competitions will take place during the 2026 Olympic Games and it is where the World Ski Championships are held every year.

Here the city gives way to the mountains, which from there on generate a natural scenery where man's building intervention is reduced to the sparse cottages on the slope. This therefore implies a language through which this transition between the built and alpine worlds is rendered in design. If elsewhere the movement of the ground generated stimuli to use places by offering spatial qualities and integration with the surrounding context, here the gesture of the movement of the surface becomes the very essence of the project.

Also in this case the research on how to do this, on how to make the tribune part of the mountain on which it turns its gaze, was conducted through experimentation on a material level, physically shaping plasticine and imagining how the surface would relate to the varying inclination of the ground. From the outset it was clear that the design should help to embrace the central space where athletes arrive during ski races and where scenes of everyday life take place in the warmer seasons, where adults' walks give way to beach volleyball games in the sand, children's games and small mountain bike or inflatable structures.

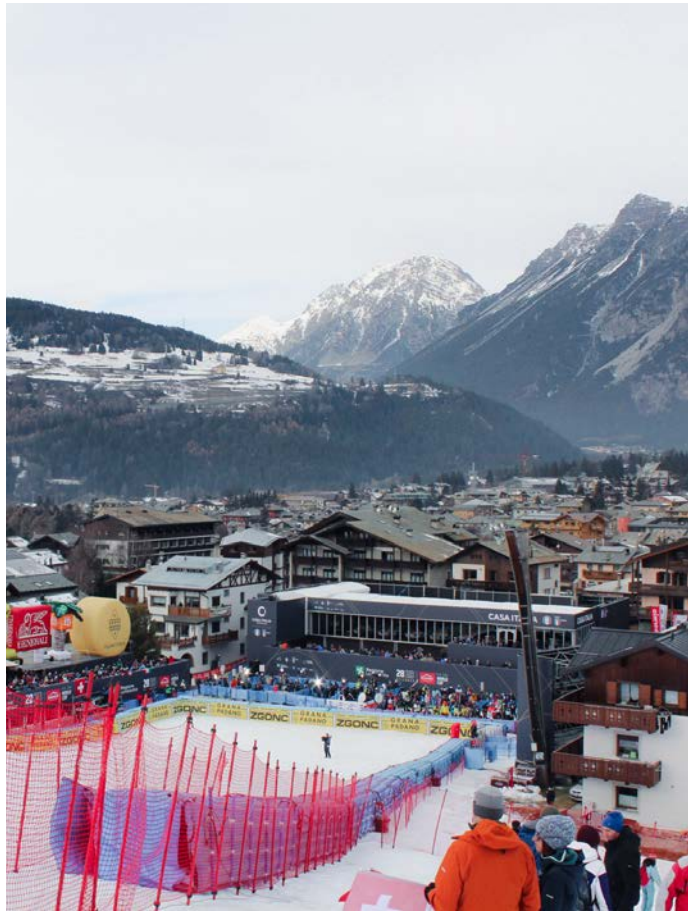
This gathering space is located between different directions. Looking at the mountain, there is a path to the right that connects to the large car park of the Bormio cable car. This also leads directly to the grandstand area. At the end of this way, on the opposite side is also the old Ciuk cable car building, which during the Olympic competitions will become the headquarters for the timekeepers, host the athletes' staff and the media. Imagining a cross to be drawn from these elements, the mountains are perpendicular to the aforementioned trajectory and the road to which the grandstand has its back.

Looking at the current situation, one can clearly see that the current tribune tends to act as a screen between these two scenarios, turning towards the mountain side but closing towards the street front. The design intention, on the other hand, interprets this boundary condition to generate a threshold between the two worlds, maintaining a relationship of mutual invitation.













0 5 10 15 20 25m

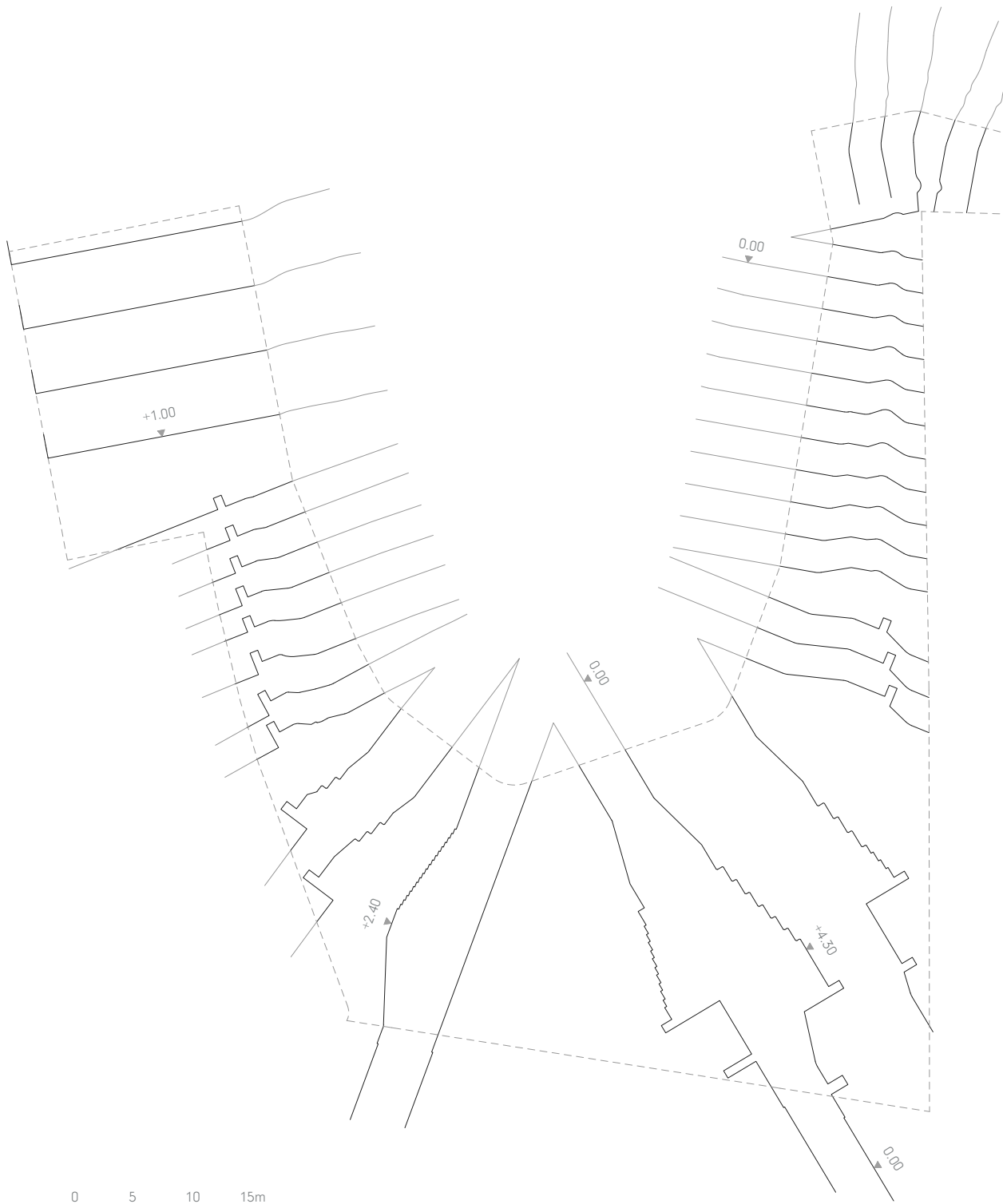
Masterplan tribune





Tribune ground floor





This is why access to this area opens up from the street front, leaving a space that instead stimulates interest and leads the eye towards the funnel that is generated, towards the mountain. The compositional attention is also accompanied by the choice of material, with the sanpietrini pavement that also acts as a physical continuation of the pavement and precisely invites interest in the new widening where the grandstand stands. The presence of the small footprints in the ground, the darker cobblestones, as was already the case in the car park, again marks a direction, suggests a movement. In this case the access towards the place where the ground becomes a grandstand.

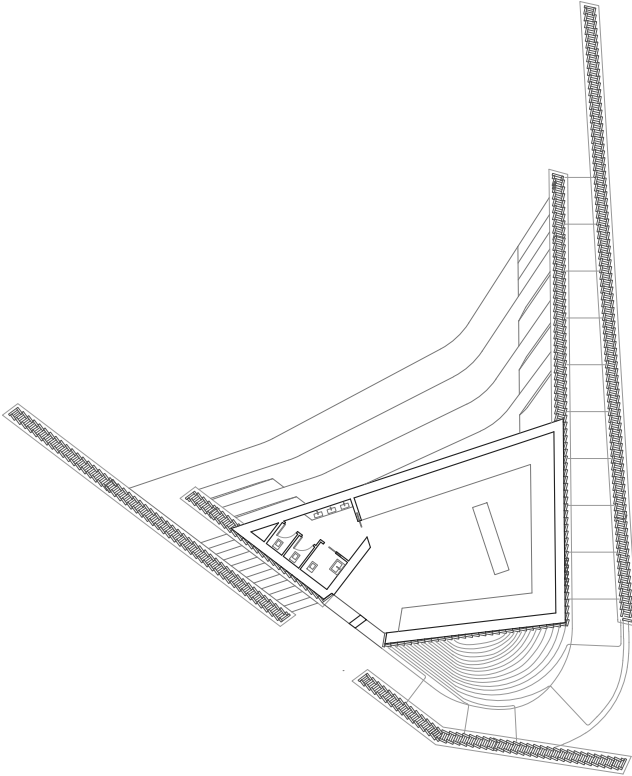
The tribune is thus distributed around two contiguous but different spaces: the threshold and the natural ground in front of it. The concept of the tribune itself changes from what is present at the moment; it is no longer an artefact located in a certain position and dropped onto the site, but rather a movement that arises directly from that ground and is articulated to become a seating space. For this reason, the extension of the intervention also widens and embraces the arrival space like an amphitheatre.

Pedestrian paths run along the masses, marked by the paving and the presence of lampposts. The latter modulate in height to accommodate the occurrence of situations that demand to be marked. Thus it happens that the limit of the sandy terrain is marked at its ends by two taller elements, just as it happens at the end of the route that leads to the small square adjoining the building that will be used as staff quarters during the competitions.

Places that are in fact designed to transform over time, accommodating through the shapes different uses leave freedom of movement but also definition and suggestions for actions.

The grandstand itself is once again conceived with the logic of terracing, where the earth is contained by the walls and the shape of broken lines towards the urban part and curved lines towards the mountain, highlights a transition. The sanpietrino stones in fact surround and articulate the development of the modulated movement that from the ground becomes a grandstand surrounded by access ramps.

Below the widest part of the grandstand is again a hollow space, where the necessary services are located and which may serve as a ticket office for events to be held over time.



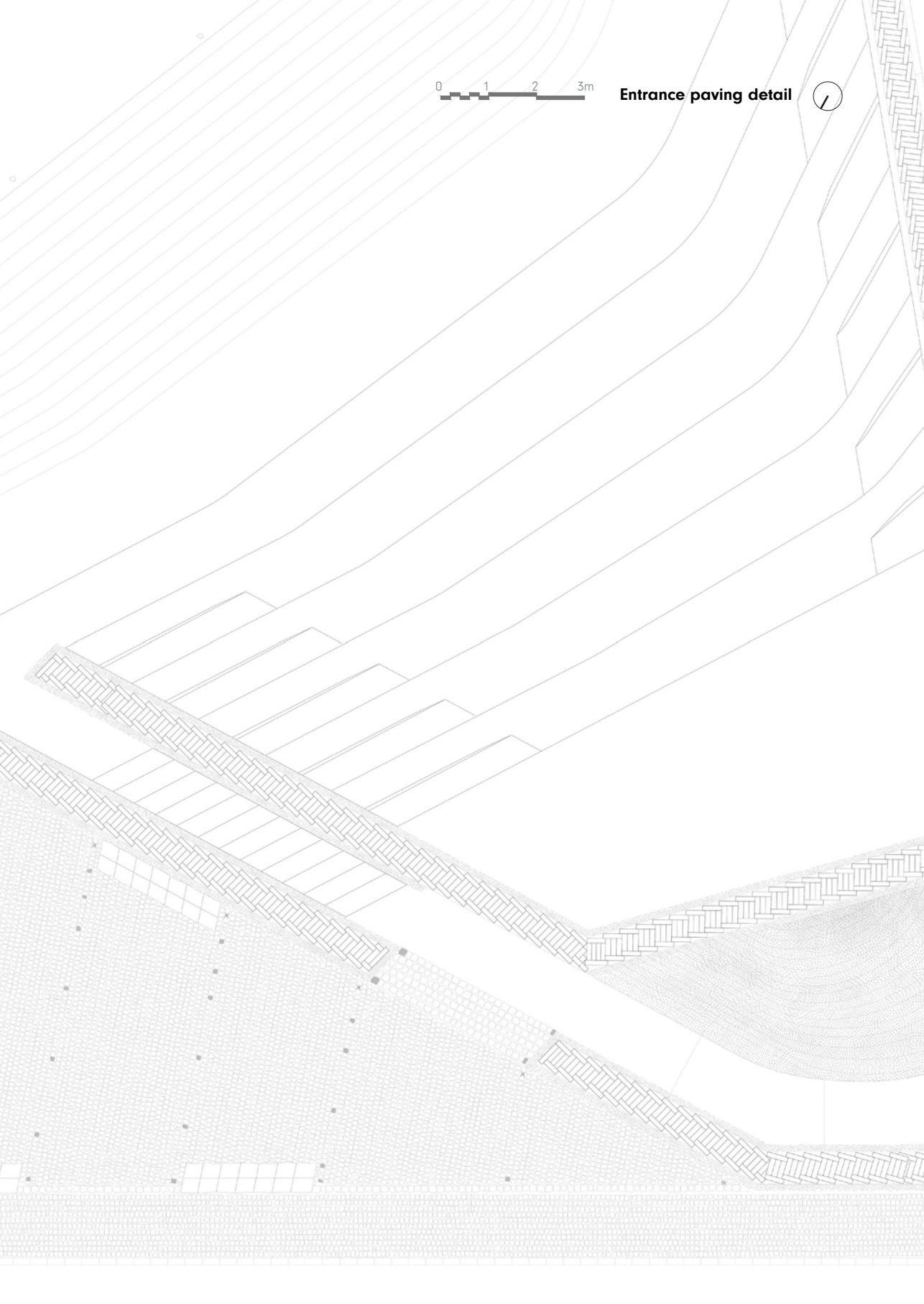
Tribune's underground floor

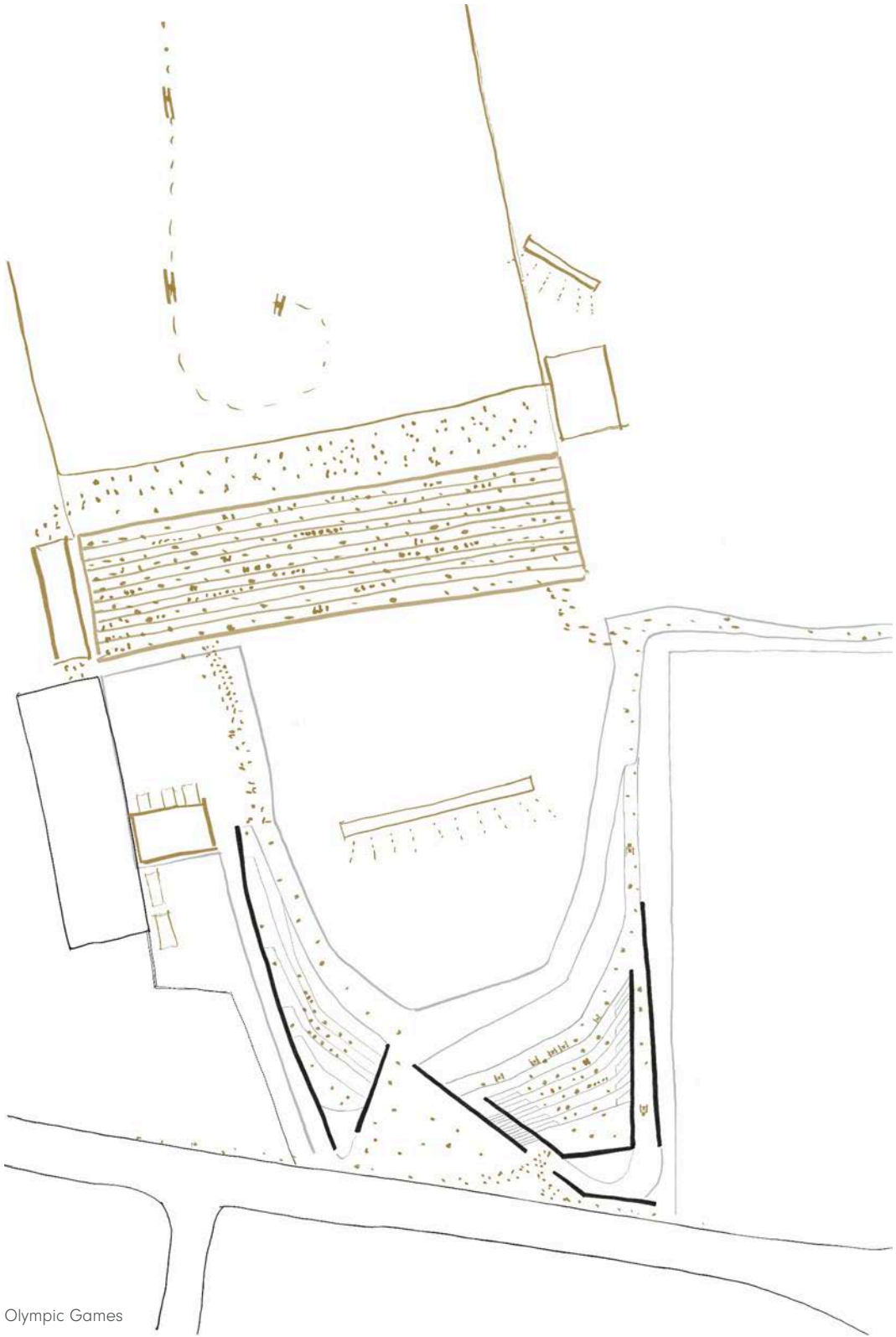




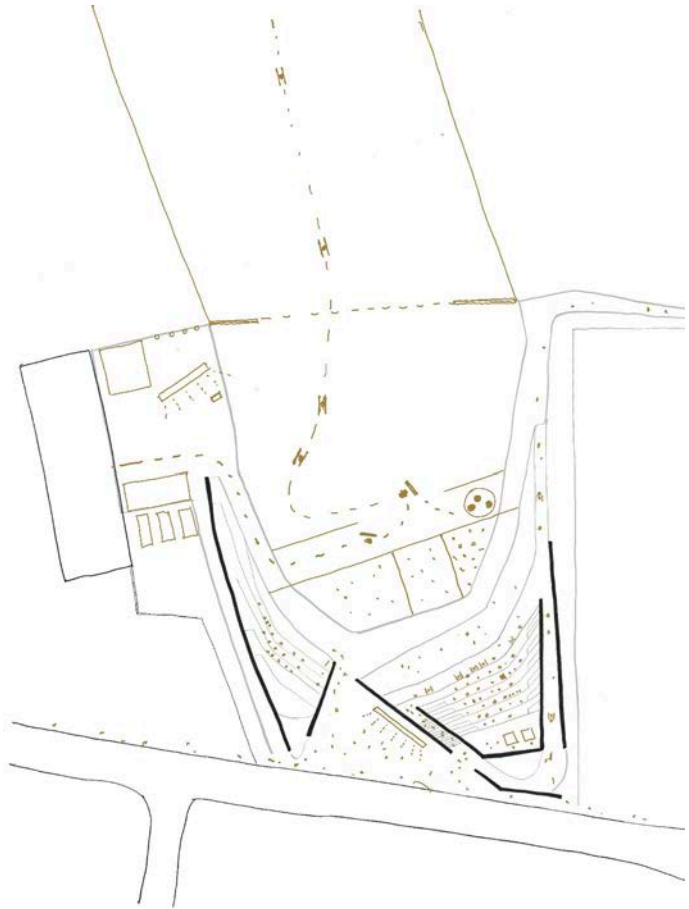


Entrance paving detail





Olympic Games

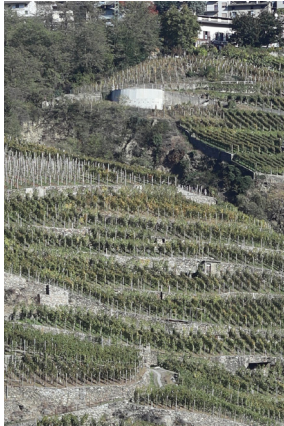


Ski race

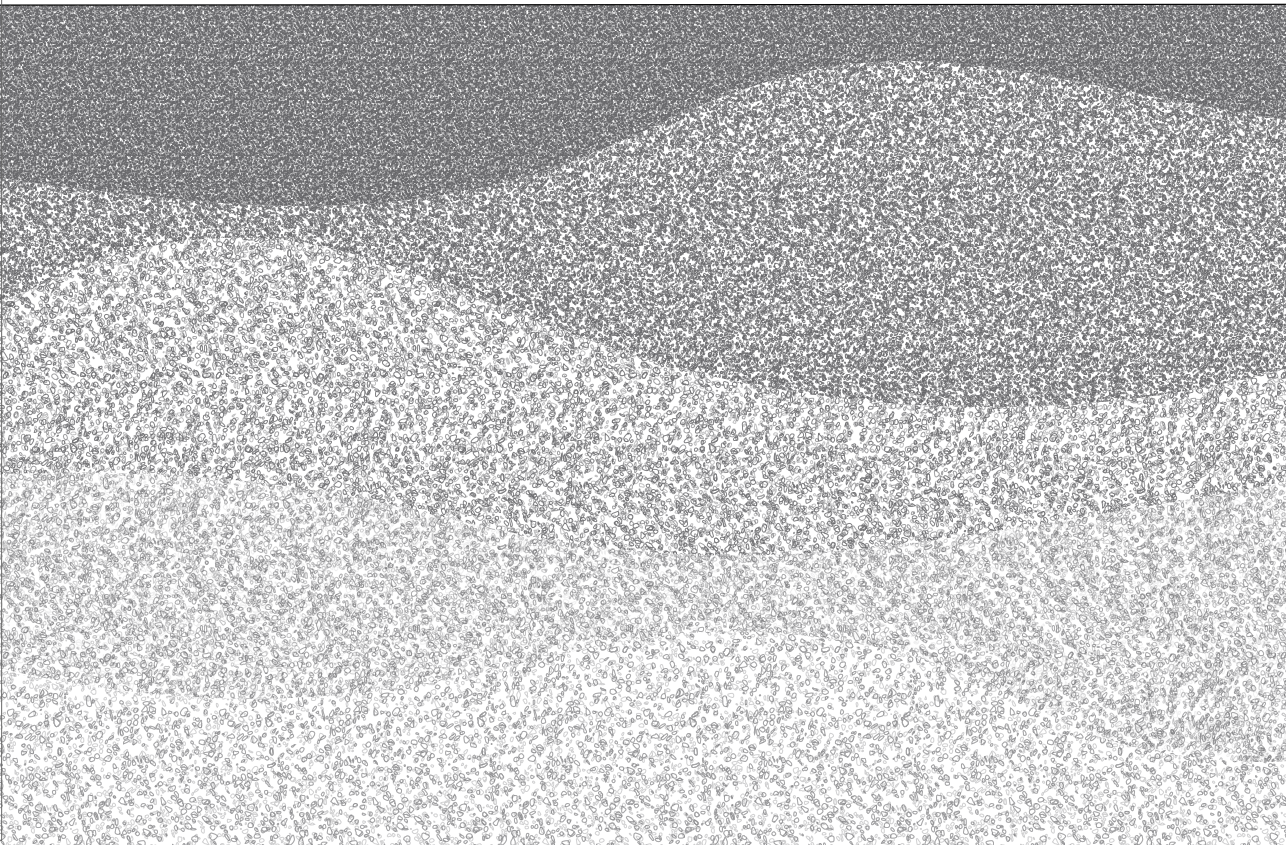
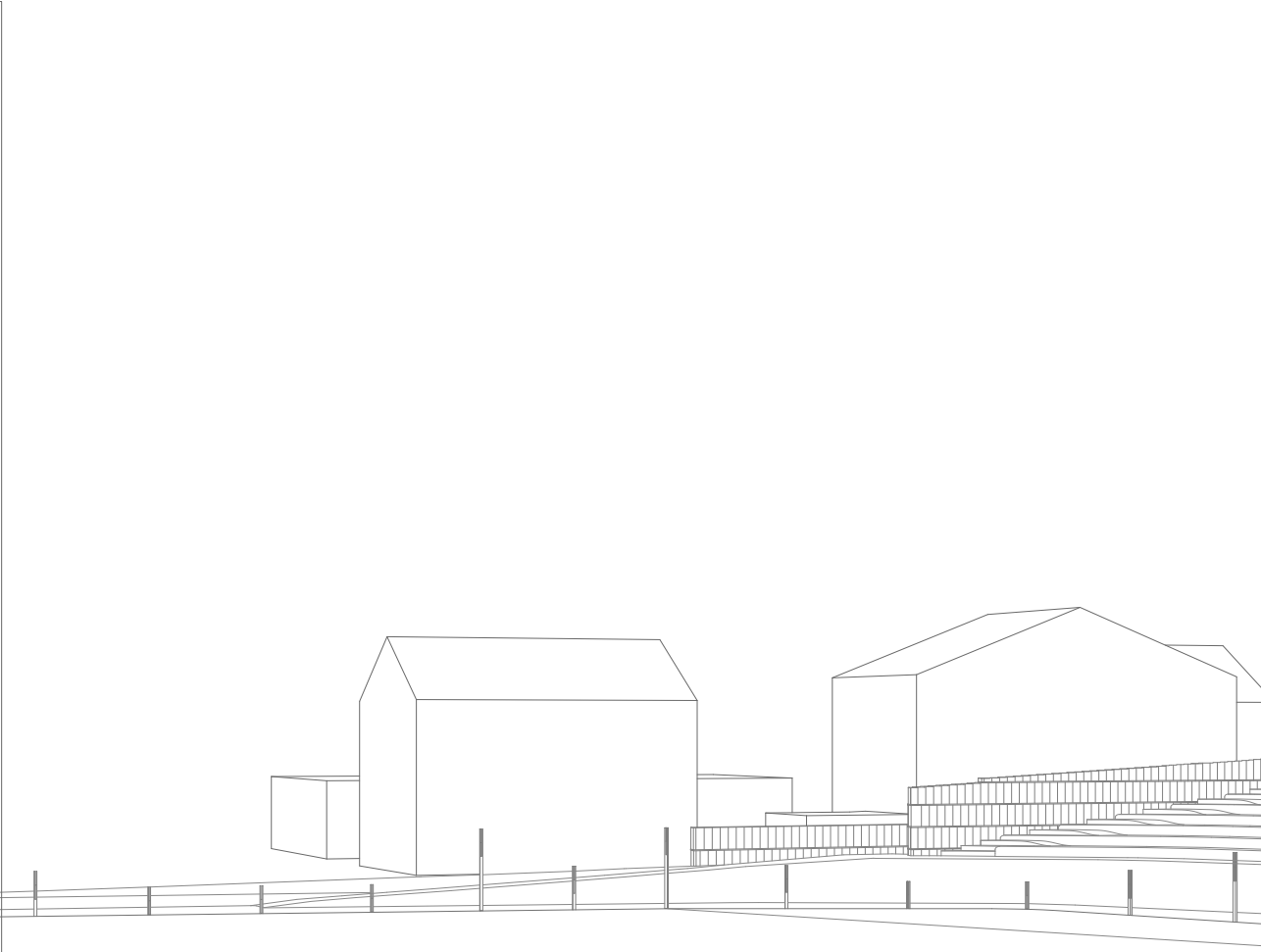
Summer

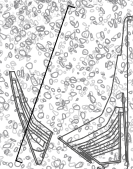
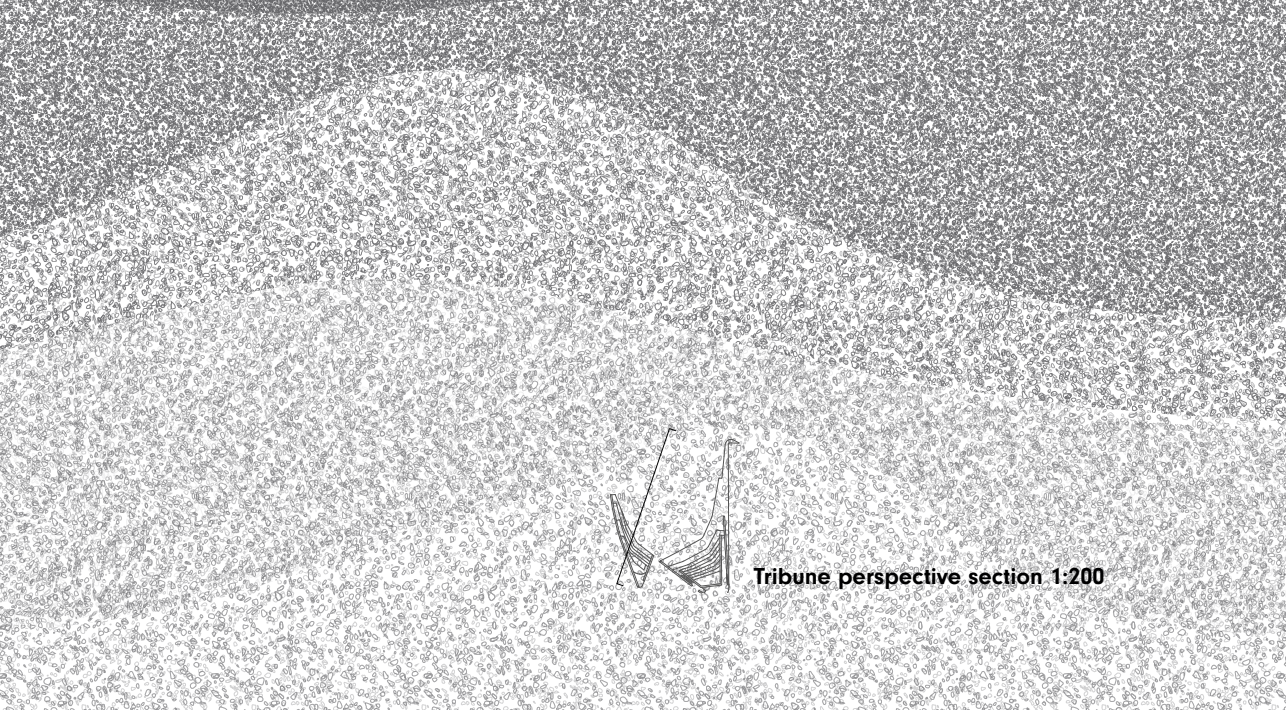
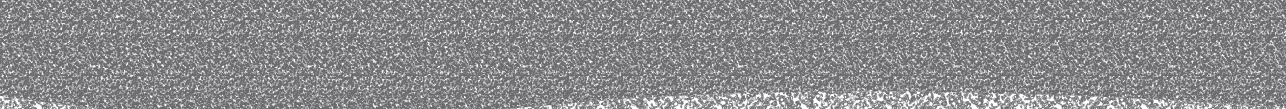
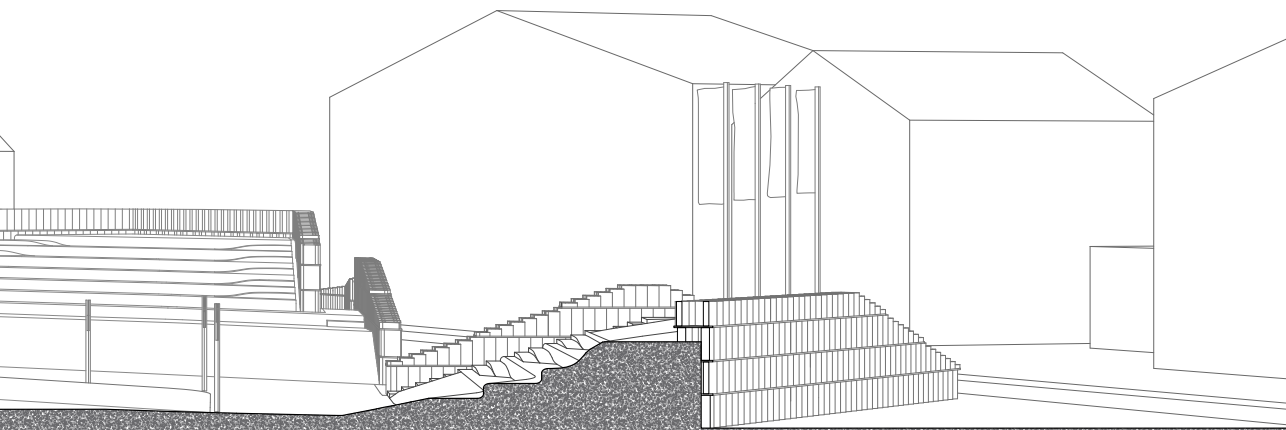


Landmarks

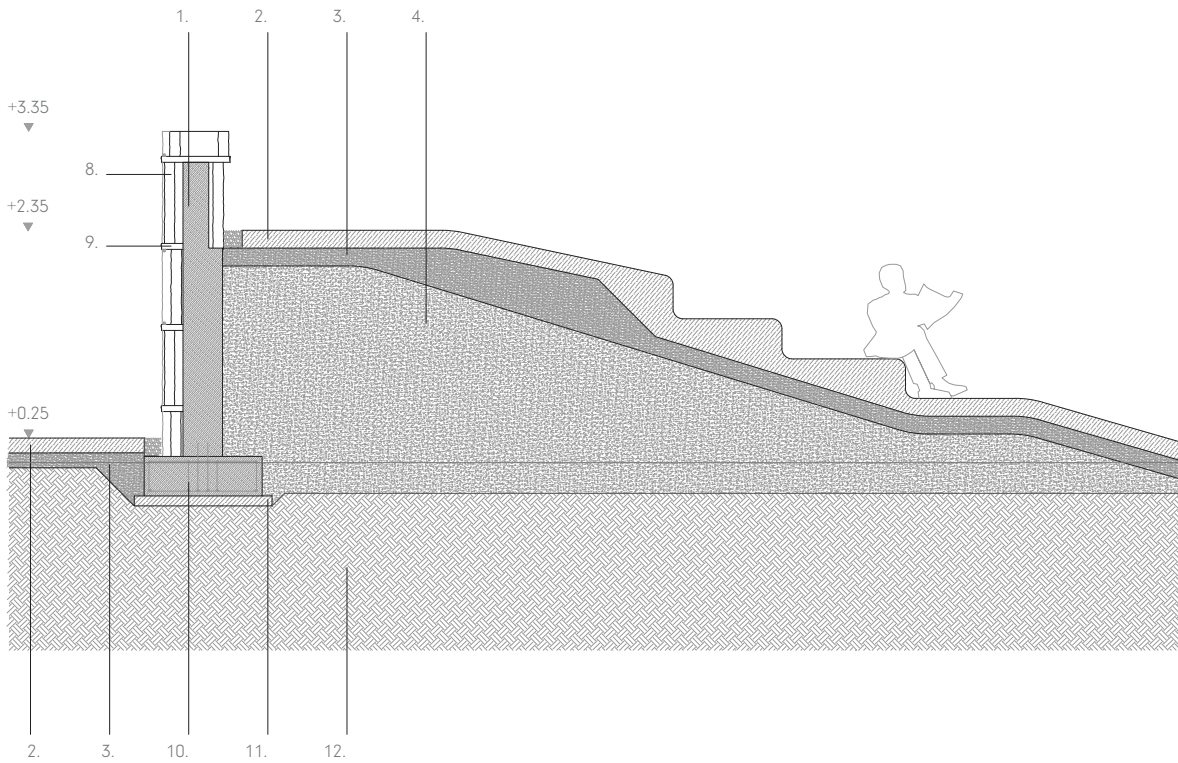








Tribune perspective section 1:200

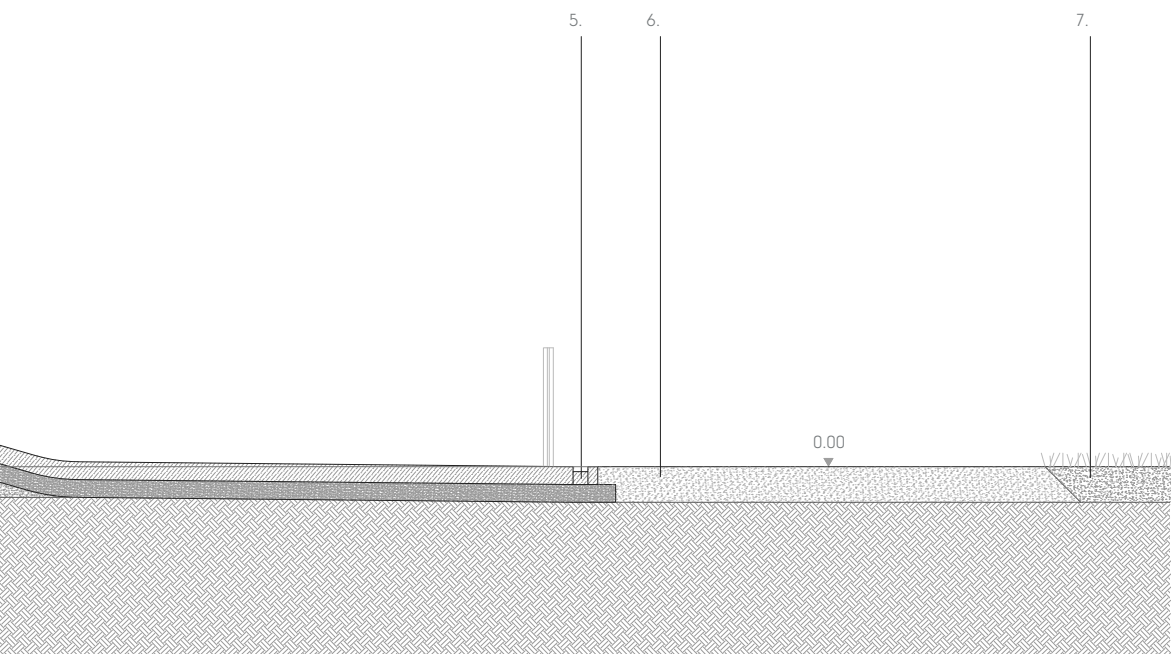


- 1. Reinforced concrete wall
- 2. Concrete surface. Th. 18 cm
- 3. Frost protection course. Th. 18 cm
- 4. Reported topsoil
- 5. Surface drainage
- 6. Sand

- 7. topsoil covered by grass
- 8. Serpentine block. 40*10* 15/85 cm
- 9. Serpentine shelf. Thickness 6 cm
- 10. Foundation beam
- 11. Foundation platform. Th. 10 cm
- 12. Subsoil

Tribune's detail









EPILOGUE

The thesis work has been a process of trial and error, failure, changing assumptions and questioning ways of approaching the project as opposed to 'how it has always been done'. It was therefore a process of experimentation and it is in this light that we suggest reading the work done. As a design research on how to deal with an intervention that is part of a complex logic and enormous scale such as that of the 2026 Olympic Games, and how this relates, however, to a well-defined local context on an infinitely smaller scale such as that of Bormio.

If we rewind the tape and look at where all the work began, the initial condition was precisely that which gave rise to a question about the event that Italy is preparing to host in February 2026. An event that, as we have seen, is capable of generating an impact of considerable urban, economic and social acceleration, but which very often leaves negative repercussions if not planned for the long term.

Observing then the places where the competitions will take place, with the involvement of villages with extremely local dynamics, spontaneously it arose the interest in attempting to respond to the design requirements of a town like Bormio, to investigate and understand how it is possible to design for such an outsized event in a place that is instead so rooted in its territory.

The car park, the cycle-pedestrian bridge and the grandstand are extremely common and frequently realised typologies in our cities. However, on very rare occasions one can recognise a close relationship between these and the place where they are built. They are often the result of standardised construction procedures or merely the result of optimising costs and benefits.

This approach, however, denies the place. It denies the dialogue that, in our opinion, every architecture must establish with its surroundings, with history, with local dynamics and cultures.

The thesis research therefore wanted to start from precisely these conditions, first of all interpreting Bormio and Valtellina in order to absorb the essence of these places and reinterpret them in terms of design. This is a fundamental step. In fact, the project does not tend towards a mimetic relationship but rather an interpretative one, where abstraction becomes the key to making the project belong to the place without taking any object or way of building and transferring it directly to the processes.

This would be a nostalgic approach, devoid of experimentation. Instead, the process that has been followed is one of attentive listening to what the landscape whispers to those who stretch their ears.

The landscape speaks of past events, stories of everyday life, explains the reason for local techniques, invites one to observe and be captivated by its scenery.

Insert landscape photos from time to time

It is not always easy to understand this language of words in the wind, whispered in a different language to that spoken by the city. And this involved a lot of work that with hands on and a thinking head led to a result.

A result that is not intended to be a dogma, an infallible course of action. This research is an experimentation on how to leave a built heritage that seeks to have the project recognised as part of the local landscape and bring a stimulus to the interpretation of places by those who live there.

In our case this was expressed through the language of the surface and the wall, reinterpretations of Valtellina's terracing and ground movements, but also gestures that would allow it to be as efficient as possible for the contingent functions of the Olympics.

Three projects that in our intentions immediately merged to become a single gesture, a single intervention. The rigid forms of the car park's partitions, gradually softening to become a bridge and finally reducing to a mountain with the tribune, are intended to convey the hybrid character that these places share between being small towns but also natural landscapes with values assimilated over a very long time.

What we hope, the desire and final aspiration of this work cannot, however, be reduced to this alone. What this experimentation really wants to convey are interpretations of the whispers that we have picked up from listening to the landscape and that we hope the project will pass on to those who want to listen.

On the next page: facades of the projects





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Process





IMAGE CREDITS

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