

*unvealing the
monumentality of
protection*

THE JAPANESE INFRASTRUCTURAL NETWORK AS AN URBAN DEVICE

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*"It all starts with a datum, which is not a fact, nor a message but a question.
Every research starts from a hypothesis that, before any rational examination, springs from
a stimulus."*

*_ Andrè Corboz, *Ordine sparso*, 1998.*

Abstract

In Japanese culture there is an extremely contradictory dichotomous relationship between man and nature. While this is a matter of veneration, spectacularization, even mythicization, on the other hand Japanese society has always tried to control, harness and anthropicize the natural element.

In this context, the greatest imposition on the landscape is the protective infrastructure, designed in order to defend the Japanese territory from the destructive force of nature, tsunamis, typhoons, earthquakes, landslides, floods, volcanoes that continuously threaten its safety. A vast and widespread infrastructure network aimed at protecting cities has created an involuntary contemporary Japanese landscape, a continuous monument.

This same imposing approach on the territory and on urban space has inspired the metabolist brutality, crucial in the development of contemporary Japanese architecture, through which the centrality of infrastructure is exacerbated. Art and photography have admired its monumental scale, its role as the protagonist of a territory increasingly marked by anthropic action, but freezing the landscape and the city in an image, taking a conceptual distance from it.

This thesis aims, instead, to recognize, describe and investigate the architectural value and potential of this infrastructural system as an urban device. The infrastructure is seen as an activating and engaging element of urban dynamics, in continuum with the city's soil, as a support matrix for practices and collective uses, stimulated by the inclusion of micro architectural devices, *pet architectures*, unveiling a potential heritage.

A historical, cultural and architectural analysis can reveal the monumentality of objects born for safety but potential in the world of hedonism, if this same potentiality were recognized to them.

Contemplation of a Monument



Preface

"The conditions have changed: designing today means facing problems, using methods, expressing intentions that are different from those of a recent past."

_ Bernardo Secchi

This thesis aims to recognize, describe, investigate and reveal the architectural value and potential of the Japanese infrastructure system as an urban device.

The infrastructure can be perceived as an activating element of urban dynamics, an engaging device, in continuum with the city ground, as a matrix of support to practices and collective uses, behaviorology, stimulated by the insertion of architectural elements.

A historical, cultural and architectural analysis is the tool through which the monumentality of objects born for security but potential in the world of hedonism can be revealed, if this same potentiality is recognized to them.

In Japan, an extremely contradictory dichotomous relationship between man and nature has profoundly influenced many aspects of society. This relationship has always wavered between two opposites: veneration, spectacularization, and also mythization of the natural element, on the one hand, control, exploitation and perennial anthropicization of the territory, on the other.

In this socio-cultural context, the most massive imposition on the landscape is the defensive infrastructure, designed to protect the Japanese territory from the destructive force of nature that continually threatens its security. This vast and widespread network of infrastructures has unintentionally created an element that is both imposing and monumental, a "continuous monument". This concept, typical of the Italian avant-gardes of the 1960s such as Superstudio and Archizoom, considered purely utopian in Europe, has found its realization in a hybrid between architecture and engineering, a *super surface* that extends over the territory and creates a balance with it,

being on such a scale as to impose itself as the protagonist of the landscape itself.

If, therefore, the infrastructure is designed with an extremely functional perspective, its weight in the contemporary landscape goes beyond.

The role of the infrastructure system must be extended, recalculated and renegotiated from the outset, as a technical element but also as one of strong urban, social, architectural, landscape and nerve-cracking value, not only for the achievement of resilient forms of development, but above all as a right to a sustainable form of life.

By highlighting and revealing these characteristics, the infrastructure assumes an economic, social and political role, but also its civic and aesthetic terms remain imperative, as a place for the community, as a potential void, as a monument.

The evolution of the relationship between the urban fabric of coastal cities and the sea is a peculiar example of the dichotomous perception of nature and the overlap on the landscape.

The sea.
Why the sea?

Since childhood, this vast, infinite expanse of water seemed to me the only possible counterweight to urban space, the mirror in which the buildings are reflected, the escape point of urban perspectives or thoughts of its citizens, the generator of strength, production, tenacity of the city itself, but also decisive, with its presence so powerful, places of aggregation, community spaces, the sense of identity.

In the history of every coastal reality, however, there is a "plot twist". The productive and economic growth brings with it benefits, but as many adjustments to which the

urban space must be subjected, supine to progress. This process involves a more or less radical permeation of the infrastructure on the territory, often framed in the relationship between urban space and the sea, which until then had been a two-way street. This process can therefore lead to a break between urban space and the natural element, in a progressive fragmentation of the territory.

Japan is an extreme case of control, design and anthropicization of the territory, a country in which the landscape has become a resulting surface, a leftover given by the interstitial spaces of the infrastructure network so widespread and pervasive. The Japanese landscape ends up being like a zen garden on a large scale, composed of heterogeneous elements, arranged and designed with care and precision, in a totalizing panoptic vision, in the presumption of having control over both the anthropic and the natural elements.

This research is based on these postulates, as starting points, demonstrating the thesis through a design solution. The project, however, is not a static situation, a point of arrival, but a process of revealing the potential and monumentality of defensive infrastructures, and their consequent activation through the use of micro urban devices, defined as *pet architectures*, new fulcrum attractors that, inserted in the empty surface of the infrastructure, have the ability to generate other uses, spaces, realizations, urban dynamics.

At present, the material consistency of the space, halfway between architecture and engineering, does not have its own intrinsic value, but it stands as a homogeneous and widespread white canvas, a hybrid artifact. A landscape of passage is generated, in a condition of continuous periurbanity, where being outside the dynamics

properly connected to large urban centres is in itself a degrading condition, on a socio-economic, cultural and service level. The colonization of the void, both conceptual and physical, can be the solution for the reactivation of the territory, for the reconnection between urban space, infrastructure and natural element, defined by Atelier Bow Wow as *behaviorology*.

The Japanese landscape is typically designed and influenced by individual architectures, unlike the typically European large-scale urban planning that then defines the dogmas of individual architectures. The "continuous monument" is, in fact, redesigned through pop-up micro architectures. *Pet architectures*, defined as "*byo-products of urban development*", fragments escaped a planner's perspective, all-inclusive can be the new actors and activators of the continuous monument.

It is only through abandoning this large-scale approach, in fact, by focusing on specific spaces, that one can record, appreciate and stimulate the richness of the spontaneous practices active in the city, to make them an inductive and inclusive element of future projects.

"Modifying means precisely the search for a different method of design, only in some ways opposed to the past, in which attention is given primarily to the problem of meaning, of relations that is, with what belongs to the context, to its factuality and materiality, to its history, to its function in the process of social reproduction, to its constitutive rule. At a more specific level it means building "finer grain" plans, without a demonstrative character, that do not aspire to transcend the situation in which they are produced, that do not claim to legitimize themselves through an instrumental and bureaucratic use of the discursive apparatus handed down to us by tradition, but that articulate the space of discourse with more limited and defined themes; plans that partially lose their institutional character, normally abstract and independent of specific purposes, that select the themes of design starting from the specificity of places, from their positional character, referring to an idea of limited rationality. More specifically, it means abandoning the large backgrounds on maps, the large architectural and infrastructural signs on the territory, acting on the intermediate areas, on the interstices, on the joints between the "hard" parts, reinterpreting the "malleable" parts, somehow reinventing one and the other by adding something that gives meaning to the whole; that is, to establish new bindings, to form new physical, functional and social clots, new aggregation points that solicit more distant perspectives, more general looks within which broader projects can be given, more convincing and true discourses.

It means to look again for a rule and a semantics, not necessarily a continuation or mimesis of the historical one, but justifiable with public, not private arguments. All this means subjecting oneself to a considerable dose of intellectual risk, perhaps even finding a reason for greater ethical and political commitment."

_ Bernardo Secchi

Hiroshige. "三保のまつ原". 1853



Japanese historical, social, cultural evolution

The first chapter focuses on the processes, motivations that have influenced and structured the evolution of the Japanese village in its relationship with nature, and more specifically with the sea, leading to the current status quo.

In a historical-cultural process of affirmation of the relationship between man and nature, the concept of "いふ"¹ was defined, and with it this contradictory dichotomous relationship in Japanese culture. With the Meiji Era, however, the subversion of the traditional Japanese balances combined with the dizzying economic growth and industrial development, has made this relationship change. ² The physical expansion of urban areas and of the infrastructural system has been so much in the nature-man bond that it has completely cancelled out in some realities.

"The autonomy of the subject cannot be emphasized in excessive ways in an age in which the constructive power of a lifestyle by the society of entertainment and communication, the media, brands and large corporations is of concern.

In the light of an in-depth analysis of daily practices and rituals, contemporary society often appears to be crossed, at least partially, by behaviours that do not appear to be the expression of an irreducible autonomy of the subject, but of his subjection to stereotypes, prejudices, rhetoric, including tradition, proposed and promoted by large interest groups and accepted passively and uncritically."

_ Bernardo Secchi





#japanese mythology _ いふ concept

In Japanese mythology, nature has an ambivalent character: although its beauty, it is also the realm of change, decay and putrefaction, which is opposed to the purification of culture. The female divinity represents the rotten, while the male divinity represents the pure.³



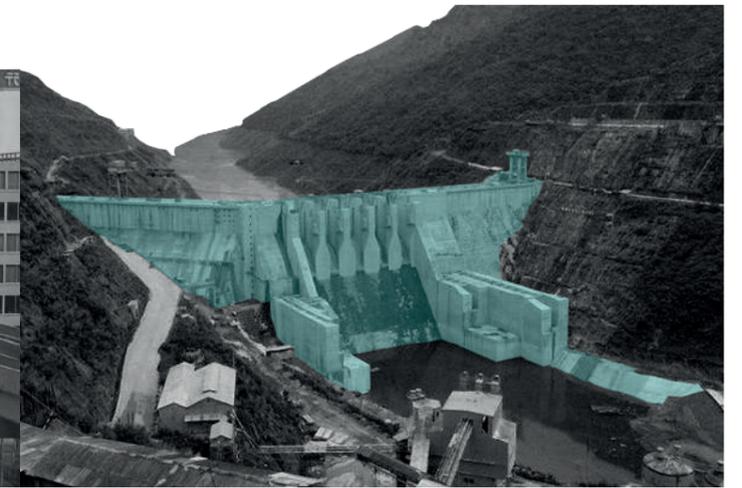
#X century _ humanisation of nature

After centuries of processes of "purification" of nature by the growers and masters of gardens, the first characteristic has been overshadowed in favor of a vision of beauty and purity of the natural element.



#1960s _ infrastructure plans

A series of infrastructure plans have been put in place to connect the country from north to south, to provide Japan with an energy supply and to protect the territory from frequent natural disasters, such as earthquakes, floods, tsunamis and typhoons.⁶



#1970s _ nationwide solutions

This has meant that often the measures taken were not precisely contextual and appropriate to the place, the result of laws, parameters, generic protocols that do not take into account local specifications and possible environmental consequences.

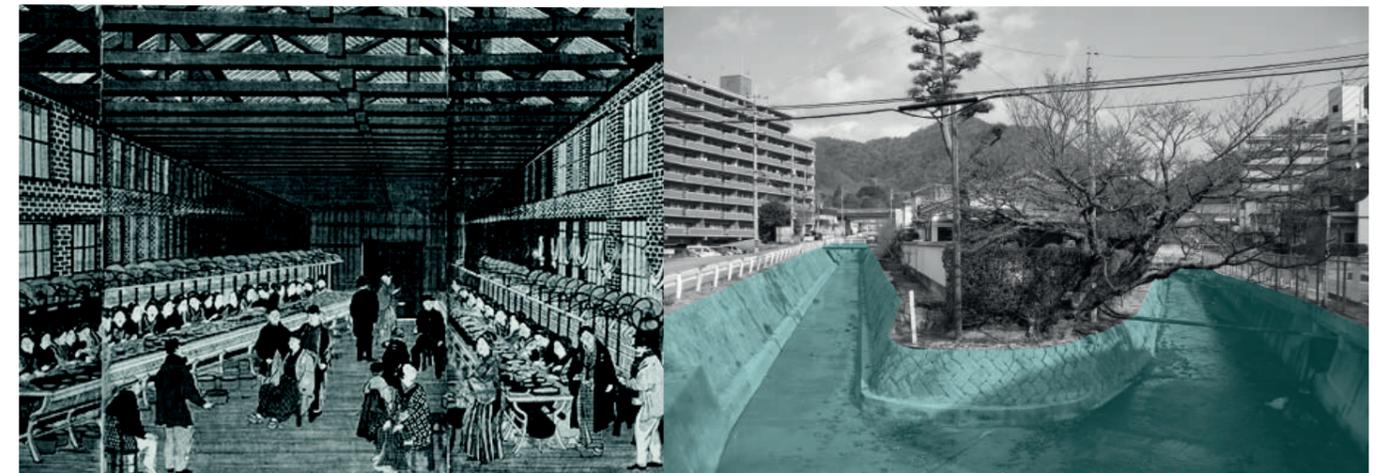


#1945 _ USA occupation

After Japan surrendered, it was subjected to seven years of military occupation by the USA, during which the American occupiers helped rebuild the country, shared American technology and carried out widespread political and economic reforms so as to transform Japan into a democracy and a potential bulwark against communism.⁴

#1951/52 _ the San Francisco Peace Treaty

Japan was once again an independent state and an ally of the United States. This has led to a rapid economic growth and a strong willingness to recover national identity through the centralisation of power. Several campaigns were carried out on a national scale, to ensure that Japan's post-military situation was as homogeneous as possible.⁵



#1990s _ industry crisis

The industrial crisis that follows the oil one in the leading countries of the global economy means that the spatial and financial balance of many realities is put in crisis and a refunctionalisation of employment and urban fabric.

#nowadays _ nationwide solutions

In certain circumstances, engineering structures can be transformed into design opportunities in a historical period in which the relationship between anthropic and natural has profoundly changed.

In Japanese mythology, nature has an ambivalent character: although it is beautiful, it is also the realm of change, decay and putrefaction, which opposes the purification of culture.

This has had origin with the legend of the creation of the Japanese archipelago itself: the god of life threw seven stones into the Ocean and gave them life, but, suddenly, a goddess blew on them, changing their perfect environmental balance with the introduction of natural disasters. The female divinity, so, represents the rotten, while the male divinity represents the pure aspect of the natural world.⁷

After centuries of processes of "purification" of nature by growers and garden masters, choosing carefully every single element, color, dimension of plants and trees, the first characteristic has been overshadowed in favour of a vision of the beauty and purity of the natural element. The Japanese love for nature is actually *"the Japanese love for cultural transformations and the purification of a world that, if left alone, simply decays"*.⁸

This eastern exasperation of a sort of European romanticism has meant that man, to control nature, has made brutal and extreme choices that have deprived nature of its beauty and purity, breaking its balance.

The history of massive environmental abuse that has marked the West, in fact, has been the same in Japan, especially since its opening to the West, and confrontation with it, in 1868, with the beginning of Meiji Era.⁹

During this period, Japan progressively moved from a feudal approach to an highly industrialized country with an unprecedented commercial, cultural and technological openness towards its Asian neighbours as much as Europe. The influence of Western scientific, technological, philosophical, political, legal and aesthetic

ideas was very important and disruptive, taken as models from Japanese society. As a result of the massive acceptance of radically diverse ideals, changes in Japan have been profound and have influenced social structure, domestic politics, the economy, the army and foreign relations.¹⁰

"The Era of High Speed Growth" is the mantra used to characterize the two decades after 1955. It has been repeated so often that it may seem time, but there is no other way to understand this period. Growth overshadowed everything. It also consumed everyone's energies and attention. And its consequences reached into every nook and cranny of Japanese society."

— Allinson, 1997.

From 1930 to 1945 Japan undertook a series of warlike conflicts culminating in its participation in the Second World War. These very long 15 years meant that, while Japan had gone on to define a vast colonial empire, on the other hand its main cities had been burned, bombed, razed to the ground with the result that more than ten million people had lost their homes and 331,000 people had been killed.¹¹ The need for massive reconstruction was current and urgent in every corner of the country.

The post-war American occupation began with the reconstruction of political and social institutions at the national level, with the ultimate goal of bringing Japan to abandon the imperial governmental structure and move to a democratic and demilitarized republic. At the same time, in fact, the imperial family was deposed of its political powers, the emperor was no longer the representative of the cabinet of the Diet and the old conservative parties were subjected to purges that undermined its stability. These reforms were followed by

educational, economic and administrative reforms.¹²

From the urban point of view, the post-war reconstruction is seen as a possibility to rebuild the cities according to more modern layouts, of Western inspiration, which deviate from the grid of the last large urban plan, following the Kanto Earthquake of 1923, equating modernisation with Westernisation. Furthermore, in this new democratic era, there was a strong push to create citizen-centric cities, again, based on an European model.¹³

There was a diffused idea that Western cities were ideal cities, and, on the other hand, the cities of East Asia, including Japan, tended to lack citizens' autonomy.

Unlike Tokyo, which had seen the succession of different urban plans overlapping in previous centuries, often designed by European architects and not really feasible for a Japanese urban environment, the small cities had no primary equipment and, above all, an infrastructure network appropriate to a country about to undergo massive economic and industrial renewals. The drawing up of an infrastructure network is the fundamental basis for the development of the nation. Railways, stations, ports, the first motorways of the country and industrial areas were the first hubs of the post-war reconstruction.

Progressively the infrastructural system, both road and rail, is developed widespread on the whole national territory thanks to financing devolved to the adaptation of the peripheral zones of the nation in which the constructive area and big cities are more concentrated.¹⁴ Despite these huge efforts, at the beginning of the 1950s the population, the workforce and the new economic and industrial propulsion were concentrated in the so-called "Pacific Belt Area", a series of large cities developed on the Paci-

fic Ocean coast from Fukuoka in the west to Tokyo and Yokohama in the east, passing through Hiroshima, Kobe, Osaka, Kyoto and Nagoya, already the location of the country's most important industries in the period prior to the Second World War.¹⁵

The concept of "megalopolis", which was to become central during the second half of the 20th century in Japanese culture, became clear, with the passage of the country from a purely agricultural and rural reality to being the second largest economic power in the world after the USA.¹⁶

In this period Tokyo became the emblem of Japanese economic power and the nation's infrastructure allowed it to be the central hub, the ultimate goal from a conceptual but also physical point of view. Trains, subway lines, highways, roads, stations spread all over the territory of what will suddenly become the most populous metropolitan area in the world. An example of the massive presence and importance of infrastructure in the urban fabric is the Tokyo metropolitan Expressway, a series of urban motorways that reaches a length of almost 300 km.

"The Tokyo Expressway is without doubt the most outstanding and important structure in the fabric of the city. Massive concrete and steel beams support a vast network of roadways that weaves its way through the entire capital, its tentacles stretching as far as the outlying districts of Yokohama, Saitama and Chiba. This traffic roller-coaster flies through and over the cityscape, skimming, low-lying rooftops, snaking between towering office blocks and diving into underground tunnels. It adds a further dynamic dimension to the hilly Tokyo landscape, drawing the attention to the constantly changing levels and differences between areas, whether industrial, residential or

commercial. This three-dimensional, sequential space has no comparison worldwide."

_ Tajima, 1995.

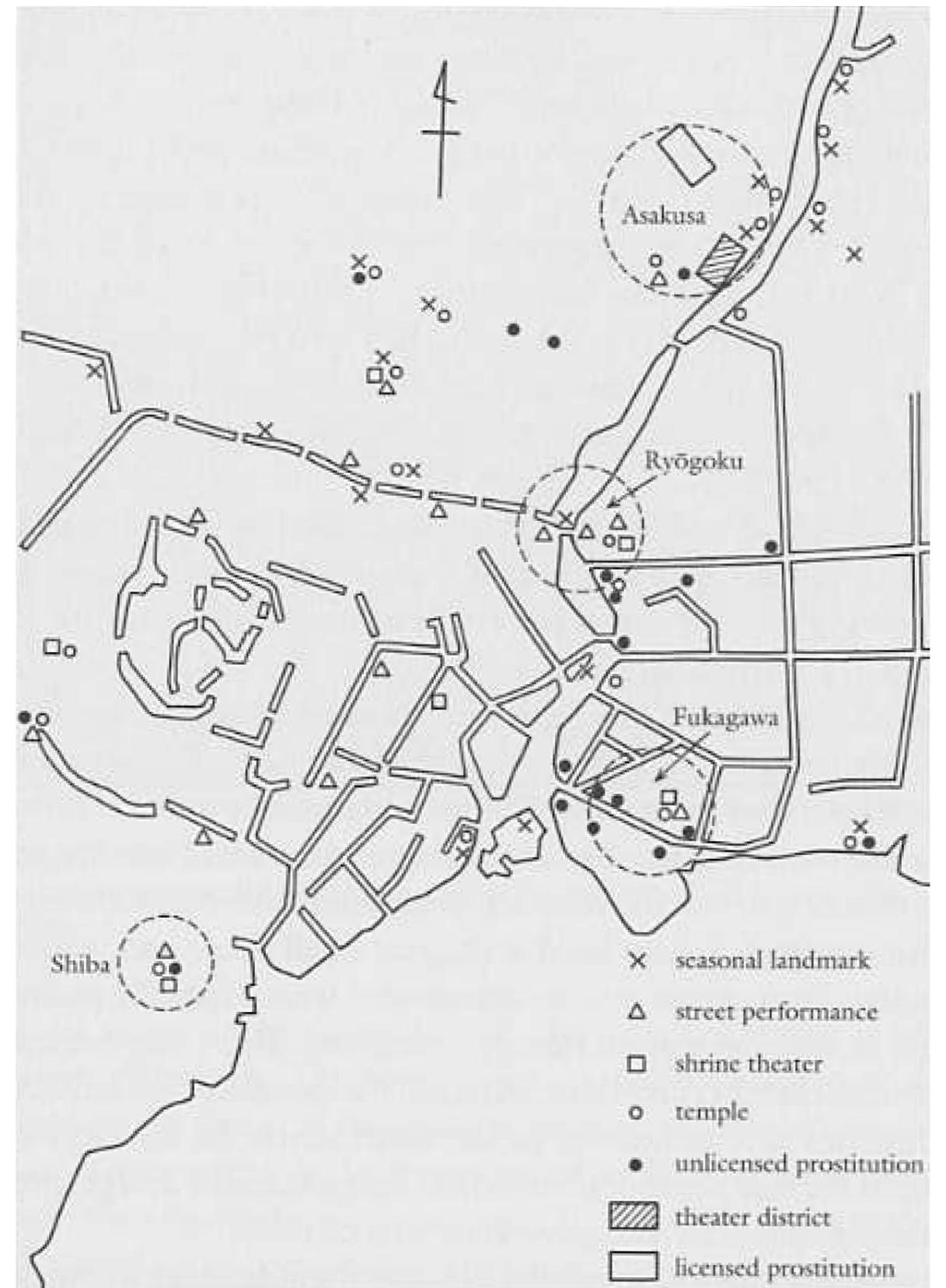
A pictures selection is following, in order to underline the situation just anticipating the period of major overlapping of infrastructural systems.

Tokyo aerial images from the first sixty years of the XX century are able to show how the city was developing in the connection with the water areas, mainly channels, rivers and the ocean. The Tokyo ba was, both

from a leisure and a productive point of view more connected with the city (before Kenzo Tange urban plan), mainly in the two historical districts of Shiba and Fukagawa. Rivers and channels were spreading all over the city's surface, starting from the Imperial Garden and from the Sumida river (the main in Tokyo Historical city center). River banks and bridges were used as community areas for leisure, commercial and productive activities.

But the destiny of the city was meant to change completely from the early '60's.

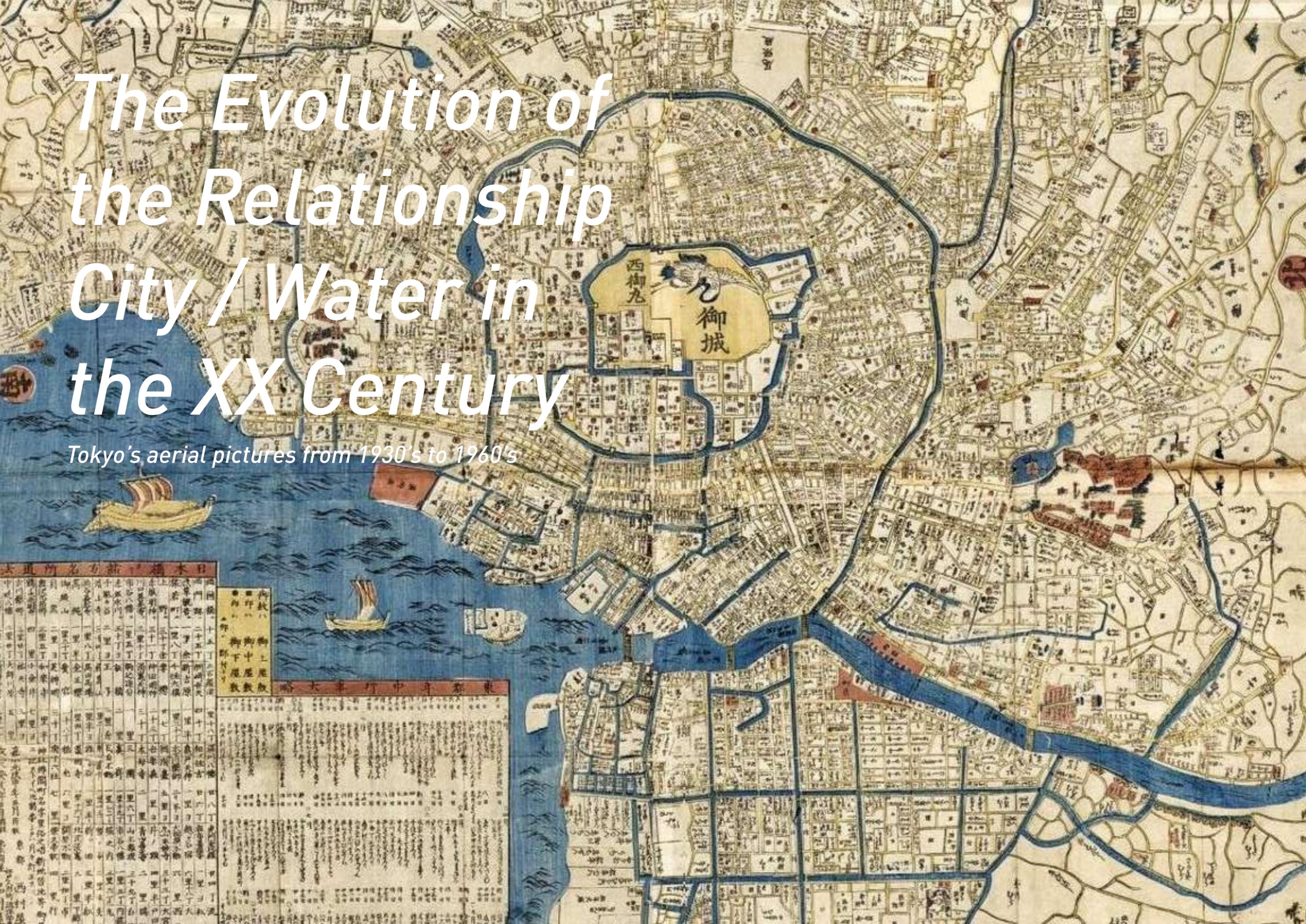
Historical Relationships in the City / Water Network in Tokyo



Tokyo Distribution of Amusement Space in 1850's / Hidenobu Jinnai / Tokyo a Spatial Anthropology / 1995

The Evolution of the Relationship City / Water in the XX Century

Tokyo's aerial pictures from 1930's to 1960's



Sumida River Area in 1930



Aero-view of Asakusa side of Sumida River 七望を近附屋松草浅畔川田隅りよ上空上都帝 (京東大)



Matsuya Dep. store and Asakusa Temple 堂本背世観及屋松草浅ルタ見リヨ上機 (所名京東大新)



Dept. Matsuya, Tokyo.
屋松、草浅



Kiyosu bridge

親偉ノ橋洲清ルタ見リヨ上機 (所名京東大新)



Sumida park looking from Matsuya Dep. store

△望ヲ園公田隅リヨ上屋屋松草淺 (所名京東大新)



Shibaura Harbaour and Haneage Drew-Bridge

橋ゲアネハビ及港築浦芝ルタ見リヨ上機 (所名京東大新)

Tokyo's Neighborhoods on Water in 1940



Ginza Street

新大座銀ルタ見リヨ上機 (所名京東大新)



Kabukiza Theatre

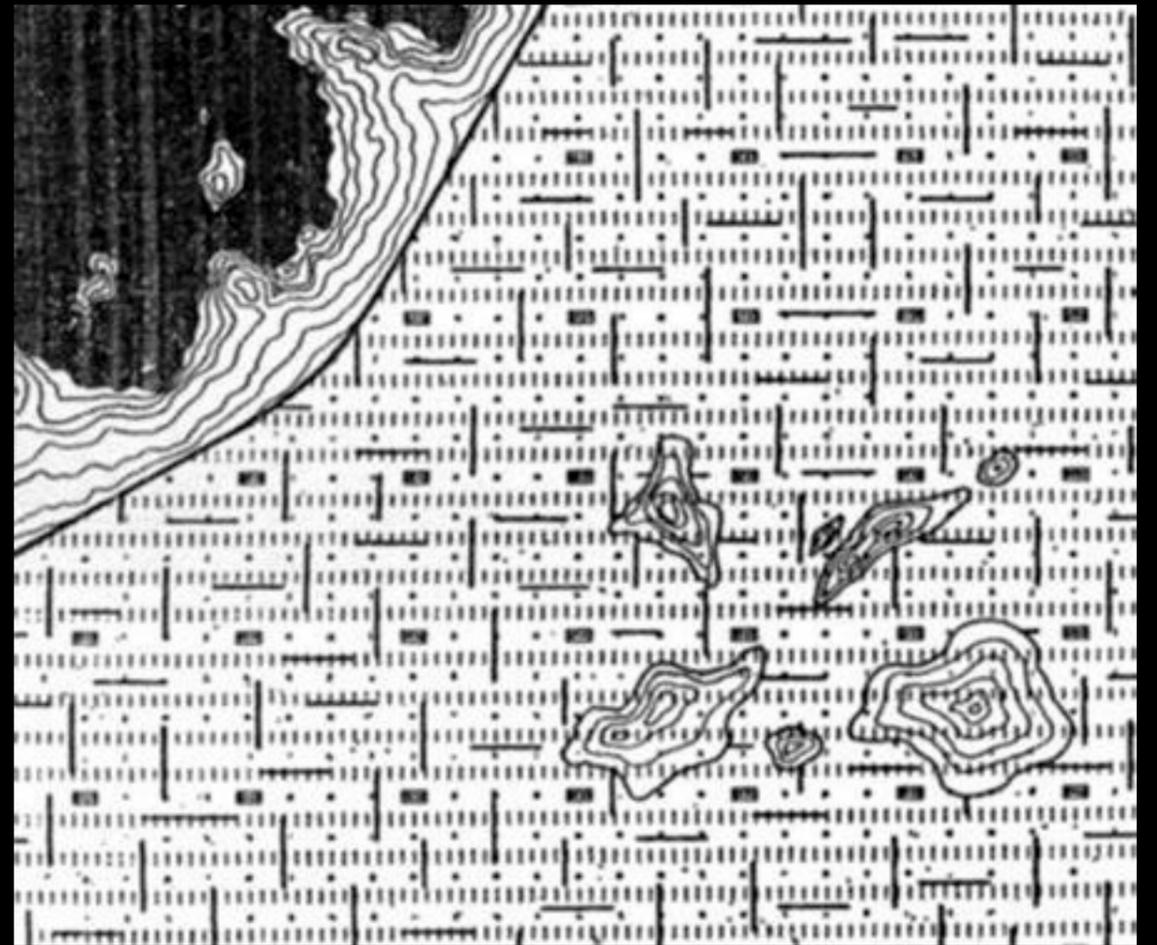
近附座伎舞歌ルタ見リヨ上機 (所名京東大新)



3 丸の内附近

Marunouchi, business centre of Tokyo.

Tokyo's Central Area in 1960's



How is the Urban Fabric interacting now with the Sea?

Archizoom. "No Stop City". 1970

Japanese Engineered Landscape

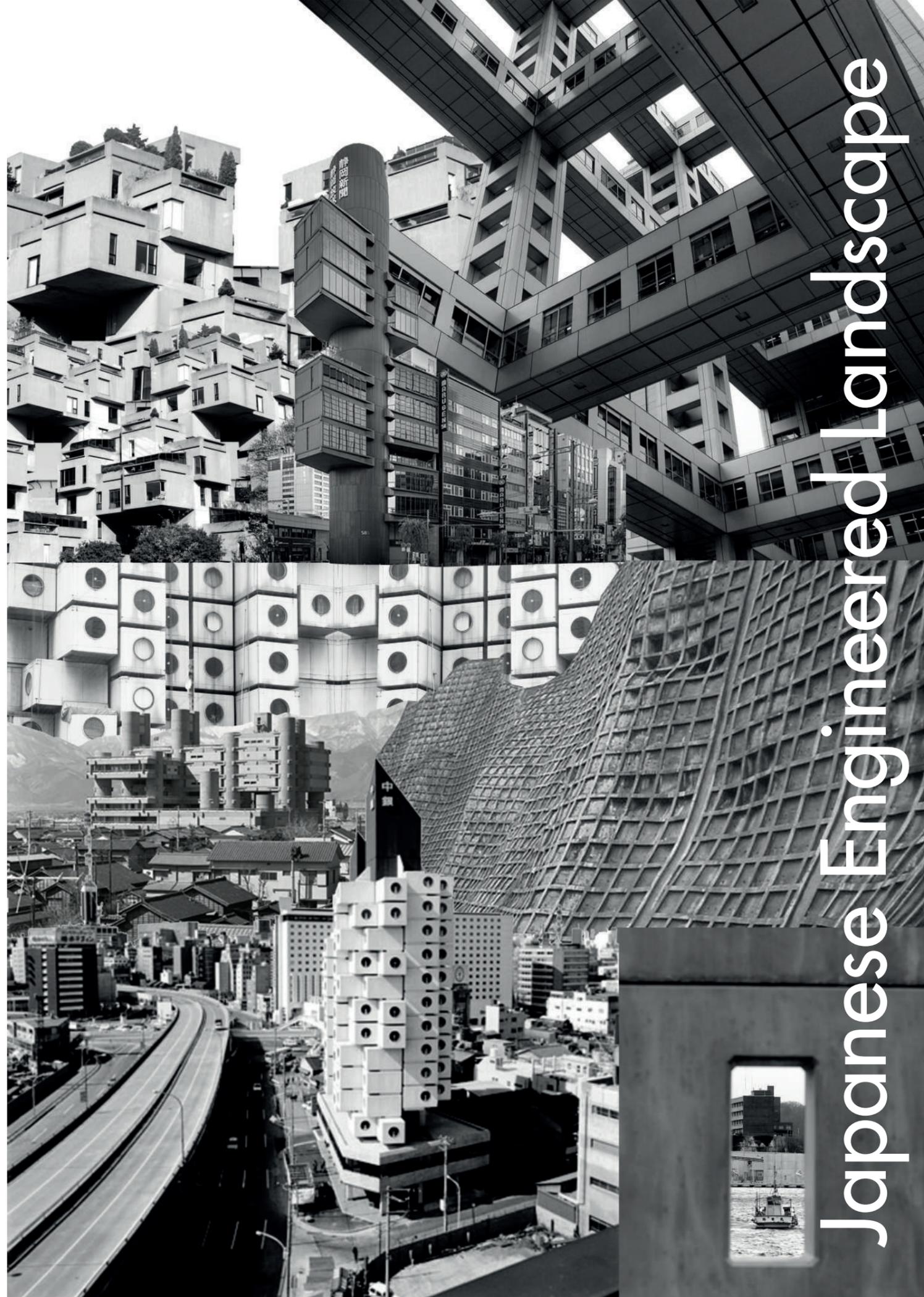
Nature and landscape are the places of recognition of certain dogmas, of a series of values, elements, perceptions, sounds, images, details. They are the container of memories, connotations of a community sense in the broadest sense of the term. Nature, so, is opposed to "non-places", in which there is the total annulment of identity and spatial and human particularities, as to an ultra-exceptional connotative carat often of architectural places.

The Japanese landscape, strongly engineered, artificialized, dense with constructions, needs to be contextualized, the result of a connection in the control of the natural element deriving from Japanese culture.

Kenzo Tange. *"Tokyo Bay Masterplan"*. 1960



Japanese Controlled Natural Element



Japanese Engineered Landscape

An Anthropized Landscape
@okay_collage



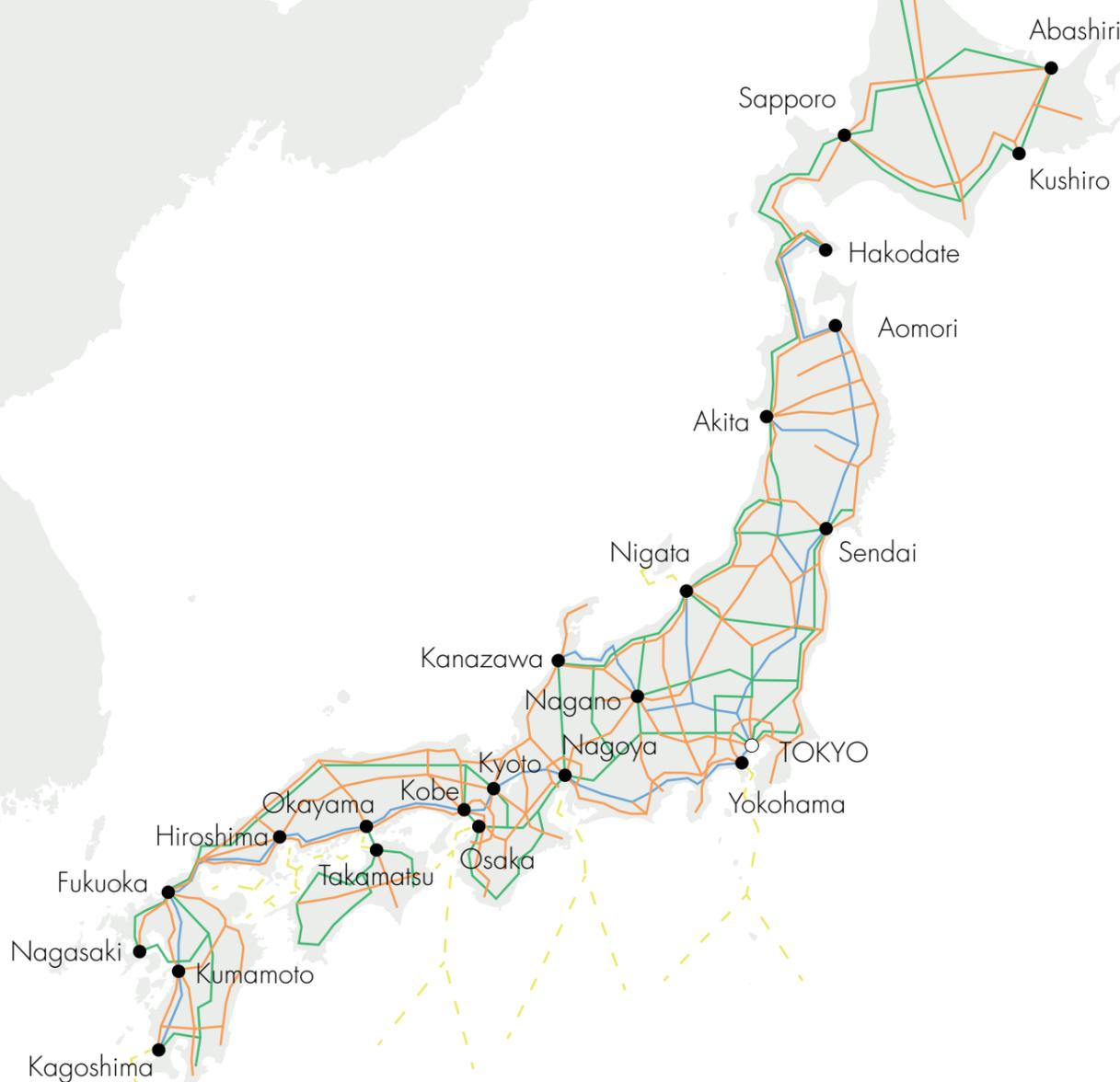
Landscape

"Landscapes express the history, civilisation, experience and ambitions of a society and its culture."

A flat landscape is not a landscape but a wall, and walls are known for obstructing sightless. Equally, when a landscape's distances are all fully in focus it appears false and decorative, wallpaper rather than an open window.

Landscapes are the most concisely pregnant element of messages and meanings, of a conception of one's own life and respect for the life of others. In no other place can the character of a great people or a small community be recognized with such clarity."

_ Michele De Lucchi

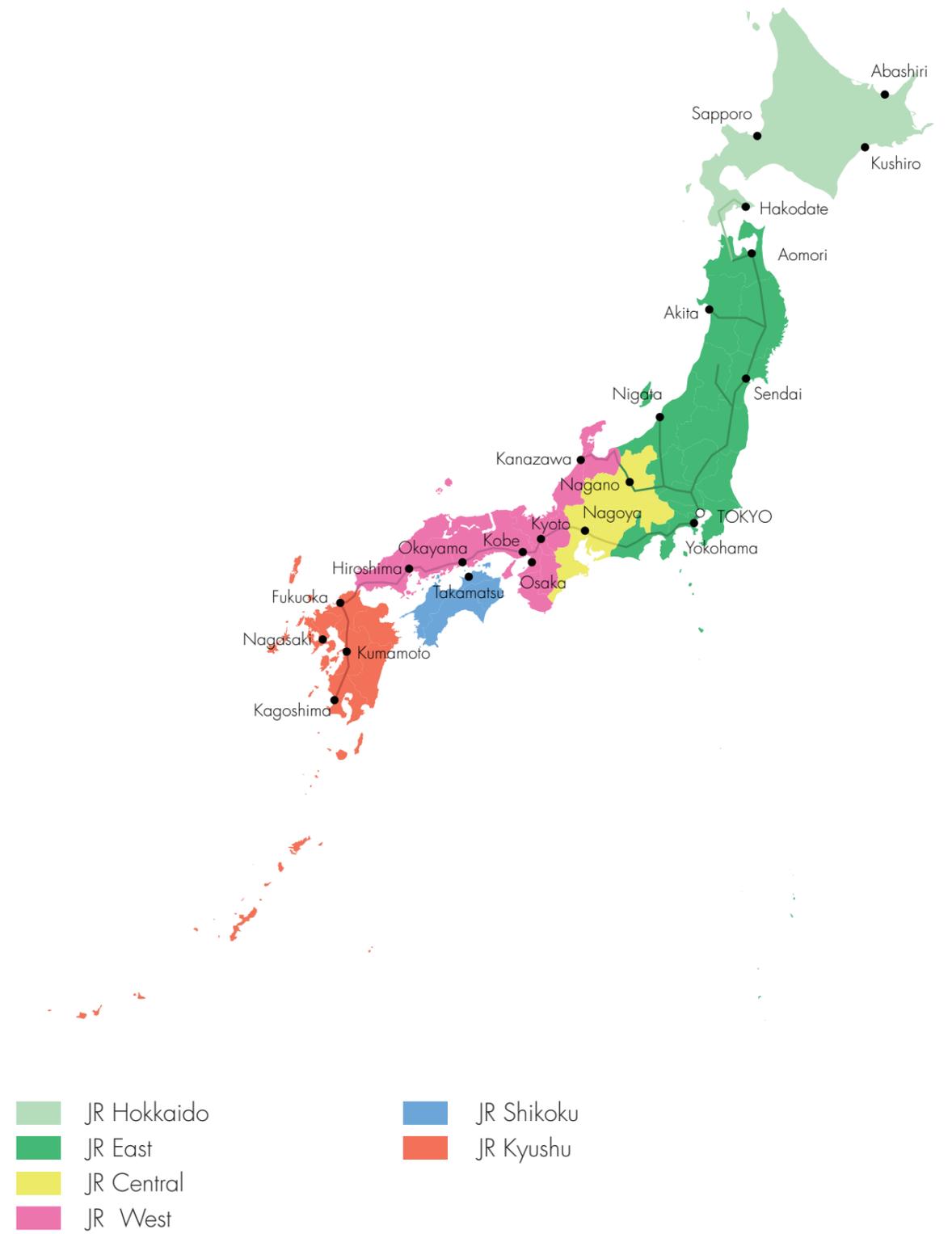


Main Infrastructure Network

- TOKYO ○
- important cities ●
- Shinkansen railways — (blue)
- train railways — (green)
- highway — (orange)
- ferries paths — (yellow)



Shinkansen Lanes



Highway and National Road Network

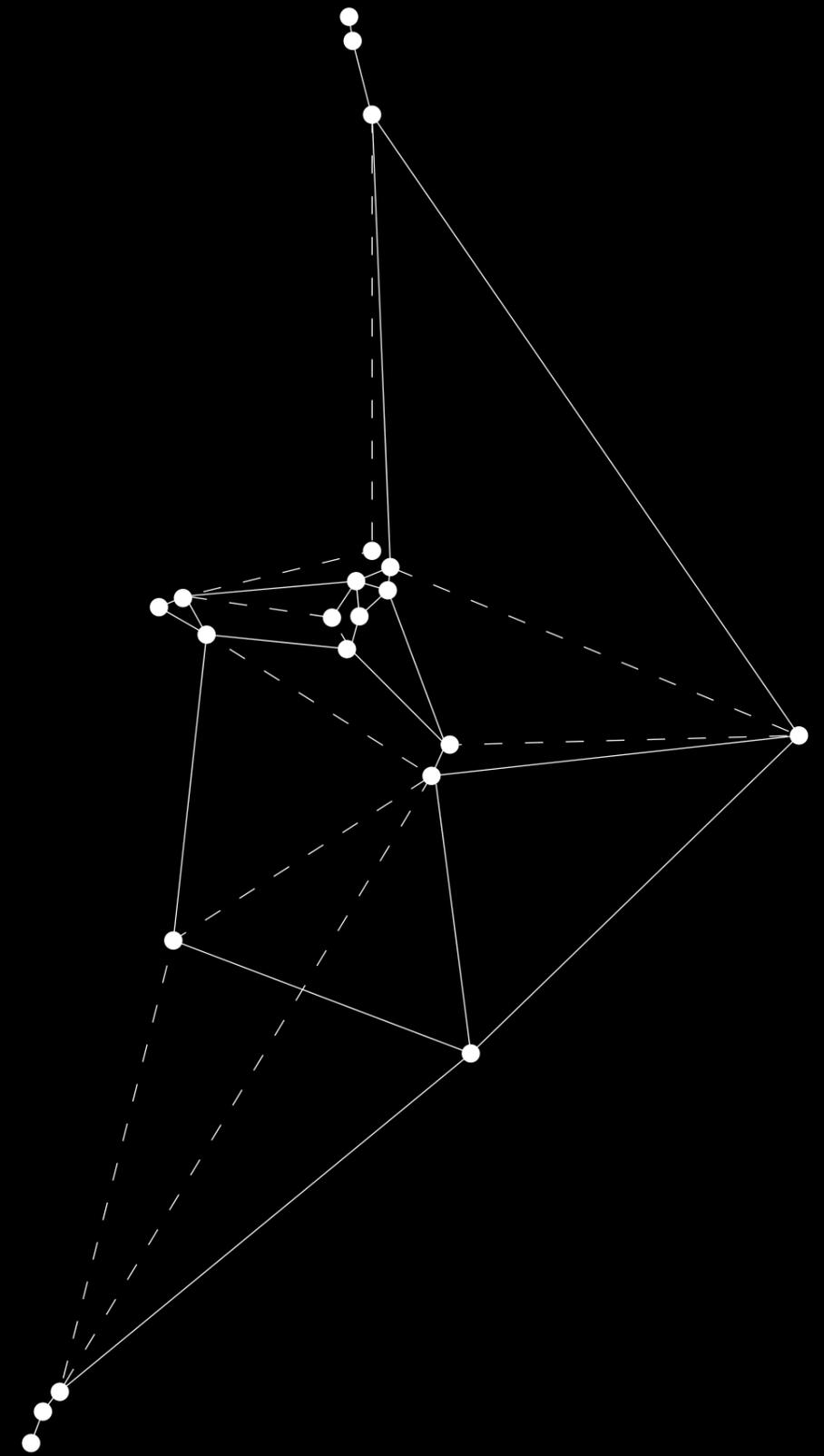
— highway
 — national road





Hubs of Touristic Interest

- infrastructure network
- important cities
- points of interest



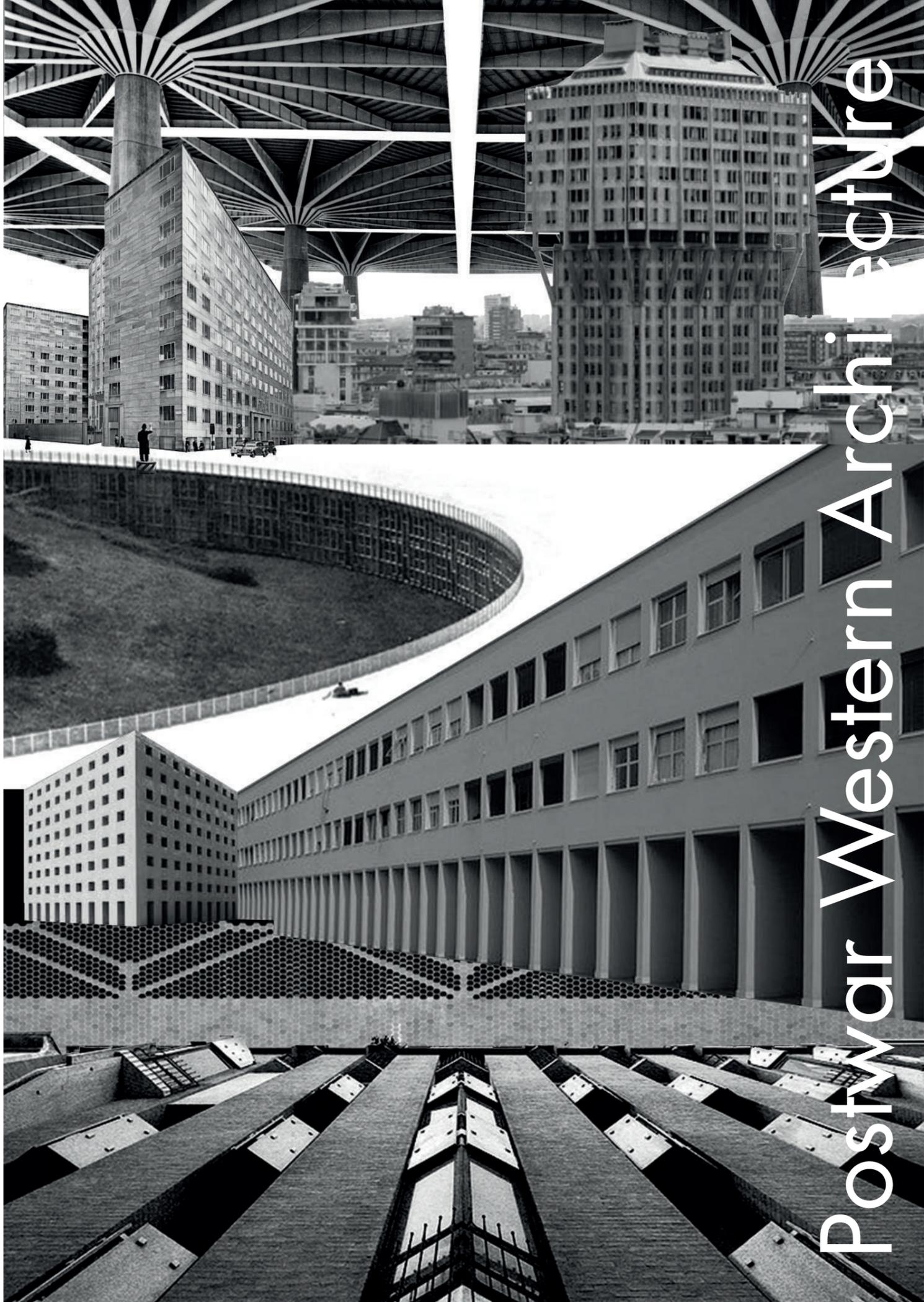
Is the Network more Important than the Hubs?

East versus West: contrast and contamination

The development of the history of Western and Eastern architecture takes place for millennia on parallel, complex, stratified roads, with surprising similarities and clear differences. A progressive process of globalization that began in the XIX century has made it possible the one to influence the other and allow to create synergies that can give rise to unique and original productions.

The contrast between Japanese and Western architecture has led to a break with tradition and a hybrid development that has brought together the provocations of the West with the technological and economic momentum of the East.

From the infrastructural point of view this has meant the implementation of a planning considered utopian in the rest of the world, but possible in Japan, on the one hand for the dizzying urban development that from the '60s to the '80s has engaged the nation, on the other hand for a propensity in the cultural and historical background to control and artificialization of the territory and the natural element.



Postwar Western Architecture

WESTERN INFLUENCE IN THE EAST

The first Western influences in the East date back to Marco Polo's commercial expeditions to present-day China, and were of a cultural, artistic, but also political-economic nature.¹⁷ Although the relations with the Far East have always been there, only with the seventeenth century that they strengthen and go to define. In Japan, the first cases date back to the Edo period, during which Japanese art and culture were influenced by European models. This phenomenon intensifies with the Meiji Restoration, which focuses on the westernisation of the country.¹⁸ Over the years, entire portions of the city were designed according to a typically Anglo-Saxon grid model and buildings that followed the historicist styles that were in vogue in Europe. Examples of this phenomenon are the various plans for Ginza, Nihonbashi and the University of Tokyo Hongo campus in Tokyo and the construction of The Bund (Wai Tan) and the French Concession in Shanghai.¹⁹

After the Second World War, the western presence, especially in Japan, became heavier and American culture became the (imposed) model of reference and there was a tendency to move away from traditional indigenous values.²⁰

Nowadays in Japan there is another reality of mixture between West and East: the superflatness.²¹

From the 1960s, Japanese arts has been influenced by manga and anime, and has in common with them a way of seeing space and surface in the "2.5 dimensional". If this could appear reasonable for some pieces of art, it seems absurd for architecture.

"Japanese architects, like manga artists, have particular ways of seeing architectural space that are culturally derived and oriented towards a form of two-dimensiona-

lity. The connection between physical and cultural flatness can refer to both the shift between the two- and the three-dimensional in architectural space, and a culturally specific relationship between surface and skin."

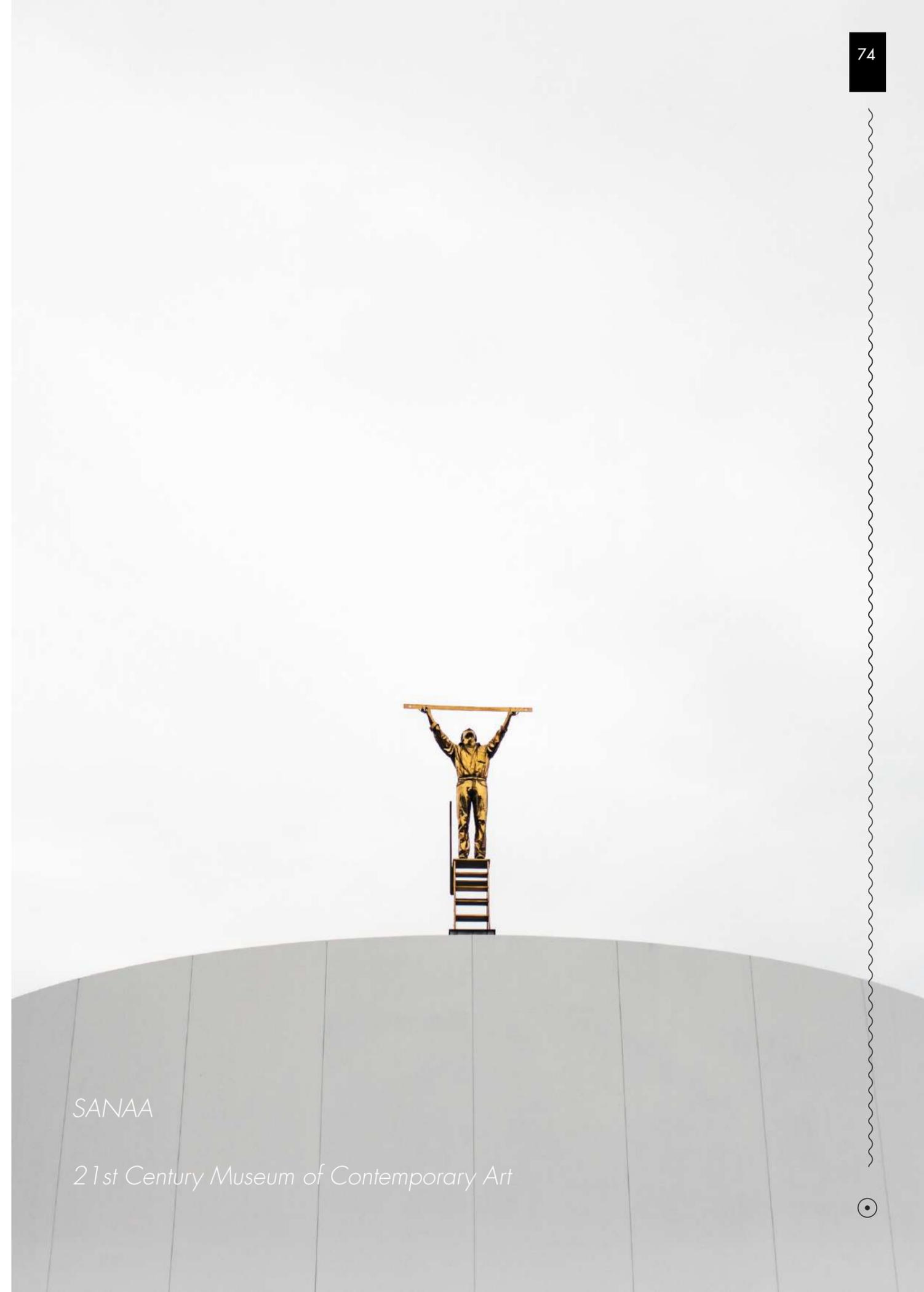
_ Dave Beynon

Some Japanese architects seem not to have interest in the physical, corporeal properties of building, instead, attempting to abstract architecture to purely visual, perceptual effects. This apparently minimalist approach is different from contemporary western minimalists as it is not trying to distil architectural form into some kind of structural or material essence; instead, it eschews materiality altogether. A peculiar example of this approach is the 21st Century Museum of Contemporary Art in Kanazawa by SANAA.²² The choice of materials, the layout of the building and the juxtaposition of the geometric forms that make up the volumes delineate a fluid space where there is no hierarchy between forms and circles, cubes and rectangles are organized in harmony and cohesion, while being clearly separated from each other.²³

"The Museum is designed as a park where people can gather and meet with one other. The glass-made circle results in an ambiguous spatial definition. a kind of reversible membrane, through which visitors can sense each other's presence."

_ Kazuyo Sejima

The building is, therefore, light, ephemeral, almost devoid of mass and the structure is replaced by the curved continuous facade, a unique external boundary line that makes it almost two-dimensional. This is based on traditional Japanese architecture, in which the surface has a high intrinsic value. From



SANAA

21st Century Museum of Contemporary Art

the ritual creasing of rocks in sacred places to shintoism, to the elaborate wrapping of any single retail item, to the skillful plating of kaiseki meals, to the presence of greeters in uniform in department stores, in Japanese culture the content of something is often determined by its image, impression or external surface.²⁴

Thus, two-dimensional reality takes on great importance, in which dimensionality and content are inextricably combined.

In conclusion, the super-flat architecture, in parallel with the homonymous artistic movement, emphasizes the elimination of perceptual and conceptual depth. While the concept of superflatness could be interpreted as exclusively Japanese, deriving from the tradition of seeing and representing space in two dimensions, with its origins in Edo's 19th century prints on wooden blocks, superflatness implies

conscious globalization, parallel to the pop cultural media of manga and anime. In the work of artists (Murakami, Chiho Aoshima and Hideaki Anno) and architects (Hitoshii Abe, Kazuyo Sejima, Jun Aoki and Atelier Bow-Wow), superflatness suggests a sensitivity that is the result of oriental aesthetics, but which has made representation techniques and communication methods of western origin its own, in a mixture of contemporary and traditional in an art for the masses, reduced to the values and concepts of pop art.²⁵

Superflatness

SANAA

Teshima Art Museum / 21st Century Museum of Contemporary Art



EASTERN INFLUENCE IN THE WEST

At the same time, throughout European history, there have been many contacts and inspirations from the East. Particularly in the eastern foothills of Europe, from the thirteenth century, art and architecture developed a mixture of styles of purely western origin with other oriental styles. Istanbul, Vienn, Trieste, Budapest and Venice are clear examples of this.

Initially, the interest in the East is of a religious nature. Eastern religions were seen as a possible threat to Christianity and, as such, it was necessary to study and understand them in order to be able to criticise them.²⁶

Subsequently, in the eighteenth century, to spread a real fashion for or furnishings, ceramics, woodwork and gardens to the east, the so-called *chinoiserie*. In this case, a mix of the most diverse inspirations is created without any real distinction between Thai, Chinese, Japanese or Korean. In the most exclusive residences and palaces in Europe, they change from small rooms to entire wings in this style that becomes the ultimate of the most prominent families. Orientalism means that in Europe people start to study Oriental languages, history and culture, seen as a source of inspiration and novelty.²⁷

With the advent of Neoclassicism, however, there was a reversal of models from the Far East to classical Rome and the Florentine Renaissance. But, again, at the beginning of the 1900s, architects felt the need to break with tradition and the past. Thus was born the Modern Movement.

Some of the main architects who took part in the Modern Movement, such as Walter Gropius and Frank Lloyd Wright, made several trips to Japan and drew profound inspiration from local architecture. In one of his main works, Fallingwater (1936-39),

Wright designed the guest house, located higher than the main building, using countless elements that recall the Japanese style, such as the continuity between inside and outside, the bright and empty spaces and the element of the fireplace embedded in the wall of the living room; in Japanese tea houses the fireplace, located in the center of the main room, is one of the fulcrums of this type, allowing everyone to participate in internal activities.²⁸

Mies Van der Rohe himself, in his project for the Farnsworth House (1950-51), also uses traditional Japanese elements in the structure of the building. It consists of only two horizontal slabs, a floor suspended 1 metre above the ground and a floor, which is supported by eight white painted steel pillars, with an outer cladding of glass panes.

While making a choice of contemporary materials and techniques, the structure of the building, in which the infill panels take second place to the load-bearing structure composed of punctiform elements, is strongly Japanese-inspired, as is the platform raised from the ground, the mixture of inside and outside and the element of the fireplace just like in traditional Japanese buildings.



Mies Van Der Rohe

Barcelona Pavilion

Eastern Influences

Mies Van Der Rohe

Farnsworth House



Implications of Urban Regeneration: Europe and Japan

"Contemporary territories are unstable, subject to fast conversion processes, and complex in the decision, design, management and transformation areas. They undergo continuous changes, which lead to transitory and unclear solutions".

_ Bernardo Secchi

This analysis focuses on a general overview of urban regeneration interventions, their main potential implications, from a sociological, cultural, architectural and economic point of view.

This is followed by a brief excursus on the contemporary European debate on the subject, a summary of an analysis of cities with a strong relationship to the sea, in which the history of urban, economic and cultural development has gone hand in hand with the development of port infrastructure.

Subsequently, two peculiar examples, Lisbon and Hamburg, are selected as carriers of two different and equally interesting approaches.

In conclusion, the main benefits of urban regeneration interventions are highlighted, highlighting their interdisciplinary and heterogeneous nature.

Every urban reality presents a very complex and delicate balance between its parts. Intervening on it, therefore, must include an analysis that takes into account many points of view extremely different and interconnected with each other.

While urban projects up to the end of the 1900s focused mainly on the representative and speculative aspect of the intervention or on the fundamental needs of the population,²⁹ with reference to the environmental and social conditions of the urban fabric, contemporary urban design prefers a synergistic approach that is able to include and integrate, within the urban system, society, economy and environment, with the possibility of public participation and citizens' involvement in decision-making processes.³⁰

In this synergistic action of intervention one of the elements to be given more weight are the "externalities". Defined as "the priceless effects that economic operators impose on each other"³¹, they sanction the interrelationships that link the different dimensions: an intervention on the infrastructural or environmental system can lead to improvements in aggregation and social interaction in the place, which in turn can sanction increases in economic activity. It is evident that many benefits delivered by urban transformation process are intangible and have an extra-economic nature.

Each urban project must take into account, therefore, the socio-economic context in which it fits, natural environment, any stakeholders involved, financial resources and legislative system that orders the possibilities and limitations of intervention. Each element represents a perfect balance between needs, institutional and financial constraints and market responses. At the same time, the client, whether public or private, determines obvious differences in objectives desired by the project and in

financial resources available. In the first case, social dimension prevails over the others and often the economic goal is just to have a balanced budget, the same amount of incomes and outcomes; in the second case, on the contrary, the economic income and the speculative possibilities of the intervention are often central.

At the same time, however, the long-term nature of regenerative interventions combined with the huge financial resources required, translates into a frequent sharing between public, private and non-profit actors.

The economic cost, one of the most important drivers of the analytical and decision-making process, is the basis for various cost analysis techniques as decision-making tools. An example is cost effectiveness analysis, used when benefits cannot be quantified in monetary values, with the aim of minimizing costs subject to constraints that result in non-quantifiable objectives or standards. Or the cost-benefit analysis that, instead, is used when the benefits of the intervention itself, in particular the effects of major externalities, can be reduced to monetary values to be compared, producing a final Net Present Value for the entire project, so as to guide the final decision.

Depending on the externalities taken into account, it may have different objectives, ranging from financial analysis to economic analysis, or may also include social analysis, consisting of the effects of social redistribution of quantifiable value.³²

In this initial phase of investigation, "preliminary studies" are also fundamental. Consisting of feasibility studies and strategic plans, they are determined as a punctual or systemic planning that induces greater change in one city or region addressing multiple goals and involving multiple public, private and nonprofit actors in a

planning process with a long-term perspective. A strategic project uses one or more urban policy tools for its implementation and generally it leverages market values for producing common goods.³³

The benefits of urban regeneration can be very different in nature, and it is not uncommon for an urban regeneration intervention to remain an end in itself or to be followed by the generation of urban degradation, due to changes in growth and productivity patterns.³⁴ As negative examples we could consider some interventions related to the INA-Casa plan³⁵ (low-income residences) such as Corviale in Rome, or social housing districts such as Vele di Scampia in Naples or Zen in Palermo. In these situations, a ghetto situation has been created rather than a social-assistance one for families with economic problems. Urban redesign interventions can also determine phenomena such as "gentrification"³⁶ or "disneyfication"³⁷. In the first case, degraded areas of the city are subject to redevelopment from the point of view of the architectural fabric, but also of the economic and social. In fact, it often follows a shift in population and activities linked to a higher social class and the subsequent relocation of the original inhabitants, no longer suited to the new image of the area. In the second case, instead, we mean a forcing aimed at the homogenization of consumption. From the point of view of the urban fabric the process strips a place of its intrinsic characteristics in such a way as to repackage it in a sanitized way. The intention is to make the area as attractive and pleasant as possible and the meaning of any kind of negative aspect is removed.

Finally, the time development of the various actions that make up the plan must be taken into account when designing an urban planning intervention. Since these

interventions are usually large in scale, both morphological and economic, the drawing up of a time schedule is often essential.



European Situation

This analysis starts from a research carried out on the relationship between city and sea in some of the main European ports. This process has taken into account realities with a different link with water and the natural event *sui generis*, in a different situation at present and with different potential possibilities.

The waterfront is defined as a unique spatial interface created by the encounter of water with the urban space.³⁸ The theme of the waterfront, its reconversion or redevelopment, is strategic not only for the functionality of the ports, but also for the design of a new urban quality: a theme that concerns not only the major urban realities and areas of value, but also "peripheral" fabrics characterized by architectural and environmental degradation, often on the sidelines of attention, social, cultural and especially economic interventions. In these cases, it is necessary that the intervention on the seafont becomes an opportunity for even greater impact on the surrounding disadvantaged areas, demonstrating them with structure and function.

Redevelopment of port areas is one of the most global undertakings in the large metropolis in the developed world. It faces the issue of managing and revitalizing coastlines, waterfronts for public benefit and use, by reclaiming the edge between water and land and turning into new either living or working space for the city. There are effective public-private partnership, models of urban governance, coherent regional planning, mix of uses, and public space of high quality, morphology of new compactness, ecological awareness, and more.³⁹

Often, however, the most delicate part of the process is the connection between the port reality and the urban fabric and the actual waterfront. A distinction is needed in

the analytical and programmatic criteria for the respective areas, and on the other hand, the pressure of "city life" along the coast may collide or conflict with the port reality or with the consistency of the former industrial urban fabric, not suitable for many common urban activities.

Port-city relationship depend also from character and size of both city and port. Just few big international hubs of marine transport are in the process of huge move and left behind areas redevelopment. Many other smaller city and harbor are in the process of transportation innovation sustainable in the former infrastructure and their possible integration with surrounding city centers.

Afterwards the analysis is based on two specific cases study, the redesign of the Hamburg and Lisbon waterfront, peculiar examples of large-scale intervention that, diluted over several decades, translates into very different implications depending on the area of the city concerned.

After highlighting the main phases of the project, the attention is focused on the outcomes, to understand the possible different economic, social, cultural and infrastructural implications of the urban regeneration project that studies the link between the city and water.



Hamburg

Hamburg, the second largest port system in Europe, is one of the most important and important redesign projects of waterfronts on a continental level, interesting for its dualism:

_ On the one hand, as far as the port area is concerned, an organisation based on connectivity, defined as "the result of a family of complex and interconnected practices, of relations and strategies that combine to create a connecting effect".

Connectivity for port authorities is expressed through the objective of achieving a seamless flow, and for stakeholders, the connection effects of the port infrastructure are measured in profits and revenues that can produce uninterrupted traffic growth, which evolves over time depending on the response of the local, regional and global context.⁴⁰

_ On the other hand, as regards the urban waterfront area, the subdivision into three distinct areas.

At the centre of Hafenstadt, which represents a "gentrification" of the oldest part of the port. A degraded area of the city is subject to redevelopment from the point of view of the architectural fabric, but also of the economic and social, with a shift in population and activities linked to a higher social class and the subsequent relocation of the original inhabitants, no longer suited to the new image of the area.

This process, however, is flanked by two areas which, among the first European examples, have combined urban regeneration with public participation: St Pauli in the west and Rothenburgsort in the east. This was made possible through the collaboration of city associations and delegations from the different districts in parallel with stakeholders and private investors, with the

drafting of a plan that is not completely bottom-up but that is able to involve the needs and opinions of the community.⁴¹

In the German case, therefore, the perfect coexistence of different realities in harmony and synergy is exemplary. the analytical and programmatic criteria for the respective areas, and on the other hand, the pressure of "city life" along the coast may collide or conflict with the port reality or with the consistency of the former industrial urban fabric, not suitable for many common urban activities.



Lisbon

It is interesting to note that in the city of Lisbon, the interventions of regeneration of the waterfront, spread over a period of almost a century, have been crucial in addressing the deep economic and social crisis of Portugal. Lisbon is part of a process of re-appropriation of its identity common to several European port cities.⁴²

Through the succession of different plans and projects, the Lisbon waterfront area goes from being abandoned and underused to being a cluster of some of the city's most attractive areas.

Around Praça do Comércio, the collective space par excellence of the city, a complex system is developed, for its articulation, dimensions, uses, summarized in three categories of interventions:

- _ Creation of public spaces.
- _ Reuse of former industrial buildings or port warehouses.
- _ Creation of new buildings.

Through this, Lisbon is part of a process of re-appropriation of its identity common to several European port cities. Some of the most evident effects of this phenomenon are:

_ Intensification of public transport along the Tagus. The Linha Oriente was inaugurated in 1998 to connect the centre with EXPO area and then the airport. The Linha de Cascais, a metropolitan train, and the new tramway connect the western part of the riverside.

_ Inclusion of historical monuments, among which the main ones are certainly the Tower of Belem and Jerónimos Monastery, in a system of collective spaces and services that make them more accessible and attractive for tourism, resulting in the two most visited monuments of the city.

_ Creation of new attraction hubs (Oceanarium).

_ Location of the city's nightlife in the districts close to the river (Bica and Bairro Alto).

_ Identification of the city with the river, not only as a scenic backdrop but a real protagonist of urban life.

In the last decade, even if Portugal has faced a very severe economic crisis, Lisbon is the leader of the entire Portuguese economy. Taking GDP 100 as the state average, the metropolitan city of Lisbon is the only district that is higher than this value.⁴³

After analysing these data, it is very interesting to compare them with the previous ones on mobility. The same areas involved in the design of the waterfront and which have been connected to the city centre are the ones with the highest real estate value, even in the case of very peripheral neighborhoods, as Belem or Moscavide.⁴⁴

Given the great importance of the intervention on the city's economic landscape, the changes in the trend of the main indicators that have occurred since the late 90s, from the EXPO onwards, are taken into account. Although it is extremely complicated to numerically evaluate the different externalities that an urban regeneration project brings with it, the aim was to create a comparison between Lisbon and the two main Portuguese cities, Porto and Braga, smaller than the capital but located in the northern part of the state, the richest and most industrialized region of Portugal. All the data come from the Instituto Nacional de Estatística and were then compared with those of Eurostat.⁴⁵

It is evident that the number of companies is greater in Lisbon, even if it could be given by the larger size of the city. At the same

time, however, if the trend in Porto and Braga is almost continuous, the trend in Lisbon since 2012 has increased. This is also due to the fact that the redesign of the waterfront has also made it possible for national and international companies to locate their headquarters there.

In the analysis of the data concerning tourist stays in the three cities, Lisbon, after a stable period, sees a progressive increase in tourism after 2012, a trend definitely unmatched in the case of comparative cities (both international tourist destinations).

Even in the case of the analysis of the number of crimes, the Lisbon data differ from the comparable ones. The total number is higher, but as above probably due to the larger size of the city. It is interesting, however, the analysis of the sudden

decline in crime after 1998 (year of the EXPO), a trend far from the stable trend of Porto and Braga.

the masses, reduced to the values and concepts of pop art.²⁵

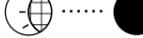
Development of the Relationship City / Port

From Primitive Cities until Contemporary Situations

In Europe, typically, port cities have been developing following some common phases in the relationship between the city and the port.

The development usually is simultaneous until the Industrial Revolution and then a breaking point that sets a parallel but divided development between city and port.

The two entities meet again in the late XX century, when an urban redevelopment projects is usually trying to sew them together again.

STAGE	SYMBOL	PERIOD
primitive city		ancient/medieval to 19th century
expanding port/city		19th - early 20th century
modern industrial port/city		20th century
retreat from the waterfront		1960s - 1980s
redevelopment of the waterfront		1970s - 1990s
renewal of port/city links		1980s - 2000

 city ● port



Japanese Situation

Tokyo Port Area, XIX century
Ships in Yokohama , late XIX century



Japanese Main Ports

THE EVOLUTION OF THE RELATIONSHIP CITY/WATER IN JAPANESE PORT CITIES

The relationship between the development of Japanese society and the sea is marked by a postulate so obvious that it is imperative: Japan is an archipelago.

The continuous contact between the population and the sea permeates its history, literature, art and economy. Unlike western coastal states, however, this relationship has a different development. If in the great European maritime cities the port realities are almost always twofold, both productive and commercial, in Japan the coastal centres are born as places of production, initially fishing, then shipyards and industry, but it is only at the end of the Edo period, with the restoration Meiji and the Opening of the Treaty Port (1859-1868)⁴⁶ that some designated ports are opened to international trade. The rapid process of "modernization" that since 1868 has involved Japanese trade has led Japanese ports to equal those of the West at the dawn of World War II.

In the last decades of the 20th century, a process of productive downsizing and functional reconversion at a global level also involved many of Japan's coastal cities.⁴⁷ This has led to a rapprochement of the contact between the city and the sea and a re-appropriation of the inhabitants of a space dedicated until then to the places of production and trade. A long and delicate process, which followed two main lines:

_ On the one hand, the cities that have developed a progressive relationship at both historical and morphological level between community and productive activities, in which the metabolisation has been continuous and gradual, usually with punctual interventions delayed over time.

_ On the other hand, in which the development of the port has been more recent, often triggering urban development itself, and planned with a clear division of the functions of the port machine, with a secession between the production apparatus and the urban fabric.

In these cases, the urban regeneration interventions have been translated into massive planning projects, which have relocated production activities and re-functionalized the spaces previously used as ports as large poles of attraction, places of the community.⁴⁸

The following are examples of the respective processes of urban regeneration.



OSAKA

Osaka is located in the centre of the bay of the same name, at the mouth of numerous rivers and streams, and is the main urban centre of the historic Kansai region, in the central part of the island of Honshu, the main Japanese island. It was founded in the Kofun period as a commercial outpost for the connection with western Japan.⁴⁹

Its importance grows because of its proximity to the ancient Japanese capitals, first Nara then Kyoto, as a nerve center for trade with the rest of the country and with Korea and China.⁵⁰

Its significance increases significantly in the Edo period, with a strong expansion of the port machine, settling with Nagasaki and Kobe one of the few ports open to international trade. During the Meiji Restoration, Osaka was the primary industrial center in Japan, central in the development of capitalism, as much as Tokyo, so much so that it was defined as "Manchester of the Orient".⁵¹

As the economic and productive centre of the nation, on the one hand it attracts many immigrants, mainly Koreans and Chinese, with a consequent generation of slums, also typical of the strongly industrialised contemporary Western cities, and on the other hand it generates a flourishing of the bourgeois class and culture. So, differently from the other Japanese cities, the urban and population composition in Osaka is a mixture between different cultures and contaminations. The city's first urban regeneration plans are precisely to solve the poverty of many districts, especially those close to the bay area, following the European urbanistic moves of the same years.⁵²

The relationship between the city and water, given the very high presence of

waterways and the crucial importance of the port, has been developed in a constant manner, particularly as regards the central-western portion.

The commercial and community space is located, both historically and in contemporary times, overlooking the city canals, a characteristic and symbolic element of Osaka.⁵³

The coastal side, on the other hand, has always been the productive and commercial fulcrum of the city. However, with the progressive relocation of industrial activities in the northern part of the metropolitan area (mainly in Kobe), it has become a collective and attractive place par excellence, through the enhancement of the existing heritage, in particular historical workers' residential districts and former port warehouses, or through specific design interventions creating buildings, in particular for cultural and sporting activities, creating a mixture of collective and port activities, attesting Osaka as one of the main Japanese ports.⁵⁴



YOKOHAMA

Yokohama at the beginning of the Restoration Meiji is nothing more than a small fishing village in the southern part of Tokyo Bay. The turning point in the development of the city corresponds to the arrival of Commodore Matthew Perry in 1853/54, asking Japan to open some port outposts, breaking the Japanese historical seclusion.⁵⁵

Subsequently, Yokohama will have an unprecedented urban and commercial development in Japan, moving from a small agglomeration of fishermen's houses to a second national urban reality, after Tokyo.

In 1859 the city's port was officially opened and it was designated as the main operational headquarters of the foreign fleets, in particular English and American fleets.⁵⁶

This status, together with the growth of the city's importance, led to the presence of several international communities in Yokohama, on the one hand western, engaged in the management of trade, and on the other Chinese and Korean, the largest in Japan still today, as the main workforce, with the planning of distinct areas.

The expansion of the port and the urban fabric, in fact, have been consequential and respectively planned as a first example at the national level, with a functional plan that placed the industrial areas to the north, the residential urban portion to the center-south and the commercial port to the south-eastern side.⁵⁷

The city's meticulous planning was also influenced by its almost total destruction on two occasions: in 1923 by the Great Kantō earthquake and in 1945 by the American bombardments that destroyed about 42% of it.⁵⁸ The reconstructs allow

the municipality to study more carefully the relationship between the proportions of the urban fabric, those of the collective spaces and those of the port. That allowed the city to be even more functionally carefully divided, together with a strong gentrification of the south port areas.

The waterfront of Yokohama, from the 90s to today, has been affected by major urban regeneration interventions, which have almost completely relocated port activities in favor of a commercialisation of the spaces overlooking the bay, making it a heterogeneous community space, a showcase for the economic development of the city.

Being planned and built mainly during the last 100 years, and due to the historical strong presence and influence of Americans, Yokohama is the only Japanese big city with an actual "downtown", with the main commercial and community activities, the skyscrapers, chinatown and the most of the main city landmarks.

In all the other big Japanese cities, instead, each neighborhood has its own balance, with the development through the centuries of an urban space made by alveoli, different hubs with its own characteristics and peculiarities.⁵⁹

Outcomes

It is therefore clear that the benefits of urban regeneration can be very different in nature. However, they can be linked to measurable and estimated entities by carrying out a sensitivity analysis to assess the robustness of the decision-making process. One example is the application of the cost-benefit analysis by Tyler et al.⁶⁰

A problem of urban projects could be that they are long-term plans, and so sustainability, the ability to deliver long-term benefits, is therefore central. In Ahern's theory⁶¹, the "safe-to-fail" approach has recently emerged to try to eliminate the randomness of unforeseen events by proposing five guidelines:

- _ Multi-functionality: by bringing together different functionalities it is possible to produce value and at the same time improve redundancy and modularization.
- _ Redundancy and modularization: functions, applicable for different situations and places.
- _ Diversity: biodiversity, social, economic and physical diversity provides more responsive and therefore more solid responses to change.
- _ Multi-scale networks and connectivity: connectivity is mobility at different scales are key aspects of design.
- _ Adaptive planning: the project must be able to adapt to unforeseen events and develop an empirical consciousness in an uncertain environment.

The examples of Lisbon, Hamburg, Osaka and Yokohama, each one in a different way, clearly demonstrate how urban regeneration can develop benefits within the urban fabric.

The implementation of an urban project generates economic effects, but also tourist, cultural, social and mobility effects, on a scale that could go beyond the city alone.

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- ⁵³ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ⁵⁴ P. Malone. 1996. *City, capital, and water*. London.
- ⁵⁵ K. Henshall. 2012. *A History of Japan: From Stone Age to Superpower*. London: Palgrave Macmillan.
- ⁵⁶ K. Henshall. 2012. *A History of Japan: From Stone Age to Superpower*. London: Palgrave Macmillan.
- ⁵⁷ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
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#2

*The Impalpability of
Japanese Public
Space*

"Porosity is a decisive notion for thinking about the contemporary city. It is part of a renewed concept of mobility, which intertwines the social and physical dimensions. Understood as a metaphor, it is used to think about the adaptability and stratification of tissues, waters, vegetation and the dynamics of nature."

_ Bernardo Secchi, Paola Viganò



Definition of Public Space

At an encyclopaedic level, the expression public space means, in the first instance, the set of streets, squares, squares, open spaces, parks, gardens, car parks that separate buildings or groups of buildings at the same time as they relate to each other. ¹

It is a physical place characterized by a collective social use where everyone has the right to move or dialogue, the space of the community or collectivity that as such is different from the private space reserved for personal life. It is a system of urban voids and solids of different shapes and sizes that are also variable and represent, so to speak, the negative of the built environment. The first definition of public space in explicit terms is given by Gian Battista Nolli in *Nuova pianta di Roma* published in 1748. ²

This system, whose design and care are usually entrusted to the city administration, is translated into the urban structure in perspective sequences that give a precise and consequent sense to the presence of artifacts and it can be the result of a unitary project or derive from progressive changes in the route, in an almost biological evolution of the city resolved in a series of continuous topographical and architectural adjustments. Modifications that give life to a succession of spatial compressions and expansions, as happens especially in the cities of historical plant. In these contexts, in fact, the alternation of road canals with different sections, from the narrow ones of the alleys to the wide ones of the wider streets, and of discontinuous openings, also of non-uniform dimensions corresponding to the squares, gives the building fabric a character of organic irregularity. On the contrary, in the new expansions a programmatic and regular character prevails, inverted in compartments of simple and repetitive geometry. ³

JAPANESE PUBLIC SPACE EVOLUTION

In the historical Japanese city there are public spaces, the most common of which is the market.

The first was built in Kyoto, dating back to the Azuchi-Momoyama period (about 1590), followed by many others, among the most famous is that of Nezu and Ueno in Tokyo. A road covered by a wooden structure on which there are several commercial activities allows extreme flexibility and modularity, as well as a use independent of weather conditions and time of day.⁴

The structure, ancestor of the covered commercial promenades of the '60s and of the current shopping avenues of Harajuku or Omotesando, becomes one of the main fulcrums of sociality and urban life.

The great fire of Edo in 1657 led to a new urban plan for the city, where large tree-lined avenues were traced as guidelines for city expansion and open spaces around representative buildings and bridges was set as fire breaks. With the expansion of the city these open spaces are transformed into markets or entertainment districts.⁵ Many Buddhist temples, as inherent as they are outside the urban areas, also become the hub of aggregation and collective activities. Their structure based on different consecutive levels of squares and court buildings makes them suitable for the placement of commercial activities. The main and substantial difference with the western baroque city, contemporary to it, lies in the absence of public spaces designed as a place of aggregation.⁶

In 1886, German architects Hermann Ende and Wilhelm Beckmann were commissioned to carry out an urban redevelopment plan for the area to the south-east of the imperial city (Ginza). Their project inclu-

ded an urban grid system with large squares at the intersection of the main axes. The Japanese government decided to apply it from the street point of view without ever realizing the squares, however, going to place the stations of the train, a real urban hub.⁷

But with the further expansions of the city during the Meiji Era, however, the flow of traffic and land use have had priority over large public spaces, squares, markets, parks.⁸

In 1923, the Great Tanto Earthquake, the most destructive in Tokyo's history, hit the entire plain of Kanto, the most inhabited area of the country. The massive destruction meant that many urban development plans for a new and contemporary model of city were proposed, but in their realization in no case is taken into account the presence of squares or public places, with one exception: the park of Hibiya, the first public urban park in Japan.⁹

Its location close to the imperial city makes it the site of opposing city demonstrations, as much of protest and demonstration against the government as of reprisals by the forces of law and order that resulted in 1936 with the prohibition of public demonstrations and mass gatherings if not approved by the police.¹⁰

In 1939, the Japanese historian Hai Gorò published a book, *Mikeruanjero* (Michelangelo), in which he also dealt with an analysis of Florentine squares:

"This was the piazza (hiroba) where several thousand representatives of the citizen masses of the free city of Florence gathered in an atmosphere filled with energy to debate and pass resolutions and translate them in action, in order for the people of the nation to manage the politics of their

beloved country themselves [...]"

The term square in Japanese society translates into hiroba, which literally means broad open space. In postwar Japan, urban debate revolves around the lack of effective public space within the city.¹¹ This gap is mainly due to the state's socio-political organization, which has come back from a feudal past and has had a strong centralized government throughout most of its history. Japan, therefore, lacked not only a democratic tradition from the political point of view, but also from the urban one. The government's desire to avoid public meetings, the social interaction of large numbers and the creation of a social sense over the centuries has led to the failure to create and design public squares and places.¹² This marks a marked difference with the western world, in which from ancient Greece to the present day the squares have been the symbol of community identity and a means of creating city awareness.¹³

The term hiroba thus becomes an ideal to pursue and an architectural typology as contradictory as it is discussed. The traditional and cultural lack of public meeting space in Asian cities means that, after contact with Western mass culture, the need for it manifests itself, as an expression of the identity of the citizens, as the highest interpretation of humanity and civic sense.¹⁴ This is due to the Eastern socio-political model, which in both China and Japan was despotic and did not provide for solidarity and a sense of community.

To compensate for the lack of public space in postwar Japan, architects design shimin hiroba (squares for citizens), often adjacent to government or administrative buildings. However, as these spaces are not rooted in local tradition, they end up being almost completely unused. More effective, however, are cases where squares are built to

emphasize the monumental or importance of a particular building or site.¹⁵

This point of view was challenged by architectural historian Teiji Ito (with the support from a young Arata Isozaki), who worked to rediscover Japan's unique forms of hiroba, underlining the essential differences with the ones of the Western cities.¹⁶

"Whereas the centres of Western cities typically feature an accumulation of historical buildings of stone or brick that cannot be easily modified, in contrast, Japan's large cities had been destroyed by war or earthquakes and then rebuilt and renovated after the war. This gave rise to unique city spaces of constantly changing appearance, featuring a dynamic mix of sundry elements put together with a high degree of freedom. As this shift occurred, the concept of 'metabolism' emerged as an architectural current celebrating Japanese uniqueness, and this had a major worldwide impact."

_ Hidenobu Jinnai, *Evolutional Steps toward the Post-Western/Non-Western Movement in Japan*.

In fact, the most effective public space in the Japanese urban fabric is the one that develops in a nodal position with respect to the infrastructural system. Stations, crossroads, terminus, large attractive poles, covered squares, shopping malls, logistics centers of interchange are the places of meeting, of the gathering, of sociality.¹⁷

Infrastructure becomes the means by which people cross and experience space, in a continuous and unstoppable flow that takes the form of the space they travel through. In particular, the large stations, Shinjuku, Shibuya, Ueno, Ikebukuro, in a different way become heterogeneous and mutual-functional attractive poles, where



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松影町通



Traditional Public Space
Tokyo, 1920's -30's

(T61)

Hanayashiki of Asakusa at Tokyo.

東京景草花屋敷



東京銀座煉瓦造真圖



Institutional Public Space
Tokyo, 1920's -30's

Shijo Bridge, Kyoto.

京都四條大橋

citizens of all social backgrounds and ages, at all hours of the day meet to carry out the most disparate activities or simply use the space pertaining to the infrastructure with which they identify to meet.¹⁸

The complete fusion between public space and infrastructure is thus rooted in the Japanese collective imagination, the collective identity of its urbanized population.

"This city can know only by an activity of an ethnographic kind: you must orient yourself in it not by book, by address, but by walking, by sight, by habit, by experience; here every discovery is intense and fragile, it can be repeated or recovered only by memory of the trace it has left in you."

_ Roland Barthes, *Empire of Signs*.

The public space of the city, the community space, for meetings, leisure and tourism, is organized around a powerful and pervasive infrastructural network that extends over the metropolitan areas. The same happens, on a larger scale, at the territorial level.¹⁹

The Japanese landscape is designed, organized, subdivided, defined and scaled by the infrastructure network that pervades it capillarily. Every urban area, metropolis or city, every landmark, natural complex, fulcrum attractor becomes a point in this system and the very fact of being part of it increases the value, as connected, accessible, community. Inclusion in the infrastructure system becomes a selective discretion that society, the Japanese community, operates during the drafting and planning of the system itself.

This, however, led to an almost total perversion of the infrastructure and a strong anthropization of the landscape, without similar in other countries in the world.²⁰

"It is said that of Japan's thirty thousand rivers and streams, only three remain undammed, and even these have had their streambeds and banks encased in concrete. Concrete blocks now account for over thirty percent of the several thousand kilometers of the country's coastline... and the the electric wires! Japan is the only advanced nation in the world that does not bury electric lines in its town and cities, and this is a prime factor in the squalid visual impression of its urban areas. Out in the suburbs, the use of electric lines is even worse. I was once taken to see the new Yokohama residential district Tohoku New Town, and was amazed at the multitudes of enormous steel pylons and smaller utility poles clustered everywhere - a hellish web of power lines darkening the sky above one's head. This in a site which is considered a model of urban development."

_ Alex Kerr, *Utsukushiki Nihon no zanzo*.



Metabolist Public Space Prototype

*Big Roof / Kenzo Tange and Taro Okamoto
Osaka Exposition / 1970*

LEARNING FROM KAMAKURA

At the beginning of the 1990s, Kamakura was faced with problems linked to many Japanese suburban realities, in the spread of the city over the surrounding area, problems of congestion and adequate infrastructure in the area but, at the same time, the guarantee of the preservation of its important history and of its equally peculiar architectural and environmental heritage.²¹

Kamakura's initial situation is, in fact, peculiar:

_ A glorious past, the capital of Japan for more than a century (Kamakura period).

_ The presence of different temples, palaces, parks, historical districts of artistic and cultural importance.

_ The actual suburban reality of the town but the extreme proximity to the most inhabited metropolitan area in the world (Tokyo-Yokohama).

_ A good part of the local population with a history of activism for socio-political and environmental causes, a totally unusual situation in the Japanese landscape.

_ High funding due as much to the city's previous characteristics as to the fact that during the 1900s it progressively became a holiday resort for Tokyo's ruling class.²²

While taking into account these essential aspects for the local identity, Kamakura remains a Japanese coastal town with a past as a cultural, political and religious center but also as an important port as the starting point of the main routes of fishing boats in the region of Kanto and, along with Yokohama, the center of traditional Japanese shipbuilding. This makes it a perfect example of how, through social participation and heterogeneous technical opinions, a master plan can be planned to preserve both the identity and the contemporary redesign of a Japanese coastal town, in harmony with the interlocking of the various networks that make up it, the infrastructural, environmental and archi-

tectural one.²³

The beginning of the drafting of the new plan for Kamakura began in 1994. Several years followed in which the foundations were laid for a socially participatory project, through workshops with local citizens, walking tours of the city to appreciate and analyze the urban composition, the landmarks, the hierarchies, different interviews and commissions for each district, in order to calibrate the solutions to a specific caliber, cooperation with technical opinions, such as architects, urban planners, civil and environmental engineers, real estate agents, operators in the commercial and maritime sector and, finally, the publication of the results obtained both in local and national newspapers and online, so as to initiate a further comparison that would

verify or deny the individual points of the plan.²⁴

The three main objectives of the plan have been:

_ To increase the number of protected areas, in particular those of environmental value, such as forests, watercourses, gardens and hilly paths.

_ Infrastructural reorganization, with consequent lightening of the traffic in the historical center and tracing of new main roads outside the same. In addition, the railway line is metabolized in the northern part of the city, inserting it into the environmental system on a territorial scale and making it a place of public spaces.

_ Strengthening the relationship with the sea through the re-appropriation of part of the beaches and redesign of the seafront.

The example of Kamakura, therefore, shows how a small coastal reality, although with exceptional characteristics in this specific case, can be subjected to a plan that enhances its identity and at the same time is able to make it livable, competitive, contemporary.



Kamakura by the Sea

pictures by Luca Lagorio

IMPALPABILITY OF JAPANESE PUBLIC SPACE

While it is possible to study, analyze, and record the historical evolution of Japanese public space, its essence is decidedly evanescent, fickle, subtle, and difficult to define.

In fact, there is no direct correspondence between the western conception of the "place of the collective thing" in Asia. There is no such thing as a conception of its typologies, its spaces, its uses.²⁵

In the attempt, however, to describe it, I will give free rein to my personal impressions, filtered by my being western, Italian, student of architecture, even if partial connoisseur of Japanese culture and customs. This description will follow the path of Yasujiro Ozu's film "Tokyo Story" (1953), in a train journey through the Japanese landscape and its development from Tokyo to Tenno.

A JAPANESE STORY

I'm leaving Tokyo. I'm taking the Chiyoda Line to Nezu. As always going towards the subway stop I step through to the park. The Nezu Shrine remains one of the most fascinating places in the city for me. This curious, heterogeneous, bustling union of pavilions, buildings, gates, walls, avenues, groves, lakes, streams, in the heart of one of the oldest and most authentic portions of the world's largest metropolis. Silence reigns supreme. Only a child dressed in the traditional Yukata and his father play on the pavement of the temple. The child poses, raises his fan to cover part of his face, in a mimicry of souls, in line with the main portal of the temple.

In front of the subway station, a group of students meet as soon as they leave high school. They are talking about the entrance test to the university, the ferment of spring is in the air and not all are so convinced of which faculty to choose. Is this dilemma,

divided between meeting the expectations of friends, family, teachers and one's own personal gratification, global?

The train arrives after 24 seconds. Ah, Japan. I get off at Nijubashi-Mae, the classic Japanese station, a real maze of galleries, small squares, shops, a labyrinth. In the gallery towards the north exit there is an exhibition on the environment, on the preservation of the sea, of the great cetaceans. The work was done by a primary school in a small coastal village in the prefecture of Iwate, winners of the prize of the Creative Competition 2019. I stop in front of a watercolour with a large whale in the middle, in its stomach the remains of the most disparate human activities, plastic bags, tools, a broom, cans. A tear comes down to me.

I go out.

The air is fresh, typical of a morning in early February. The wind blows the treetops of the Imperial City across the river, swaying in unison, like following the rhythm of a music that only they can hear. The big square in front of Tokyo Station is one of the two squares that you can call this term throughout Tokyo. Every time I look at it, that I am part of the crowd that fills it, I understand it a little less. In fact, the monumental rigour of the squares of the stations characteristic of the western world is combined with that sense of haste, instability, perpetual movement typical of Japanese culture, which in no case allows you to allocate for more than a few moments in this immense open space.

In a certain sense, this balance also remains inside the station building, but as always, these great nodes of the infrastructure system are the mirror of the community of contemporary Japanese society. Bars, restaurants, shops, supermarkets crowd the floors of Tokyo Station, which is

more like an anthill than a canonical station.

I get on the Shinkansen at 11:45 for Hiroshima

The train leaves the station quietly and sinuously. It has always seemed very curious to me the Japanese habit of not associating a specific seat to the booking of the train ticket. I sit in front of an old lady, about seventy, window side. She seems deeply focused on reading a novel, but looks up for a matter of seconds, and greets me with a sweet, warm smile. I smile at her in return. I have not yet found a limit and a definition to the deep kindness that pervades Japanese culture.

Sitting next to the window, I observe the landscape unfurling before my stunned eyes. I've always loved travelling by train. You can see the sea and in the distance the islands, the sun reflecting on the waves that shine and, for a moment, dazzle me. You can see glimpses of villages, towns, small houses in the distance.

The train stops in Kyoto.

Now we are crossing the coastal area of Kansai, the so-called heart of Japanese culture. An endless line of towns lying in the bay of Osaka stretches before us, as far as the eye can see. This landscape reminds me in some way of home, Liguria. The spaces are narrow, the streets steep, the city eats the hill to its top, in a continuous struggle of supremacy between man and nature. People gather on the coastal promenade, there is a couple of boys walking, he shows the pictures just taken to her, they laugh. The children play with kites, some gentlemen are sitting on the steps overlooking this thin strip of sea.

Just a few kilometres to the south, the landscape changes. High walls obstruct the view and I no longer see the shimmer of the

sun on the waves rippled by the wind. Wide expanses of concrete are spread on the coasts, on the hills, creating retaining walls, dams, covering the rivers, stealing land from the sea. These places seem disconnected. Disconnected from the context, from what surrounds them and at the same time from what characterizes them, they seem unhappy. You don't see people around, you don't see shops open, you don't see children playing.

Announcement to the loudspeaker: we have arrived in Hiroshima.

The train passengers pour into the wide corridors of the station, in a hurry. I proceed slowly, I discover with joy to remember the road to the main exit. I pass in front of a small shop that sells taiyaki, I buy one filled with red bean paste, my favorite.

I take the local train to Tenno at 15:20. Again from the window. Again the sea under my eyes.

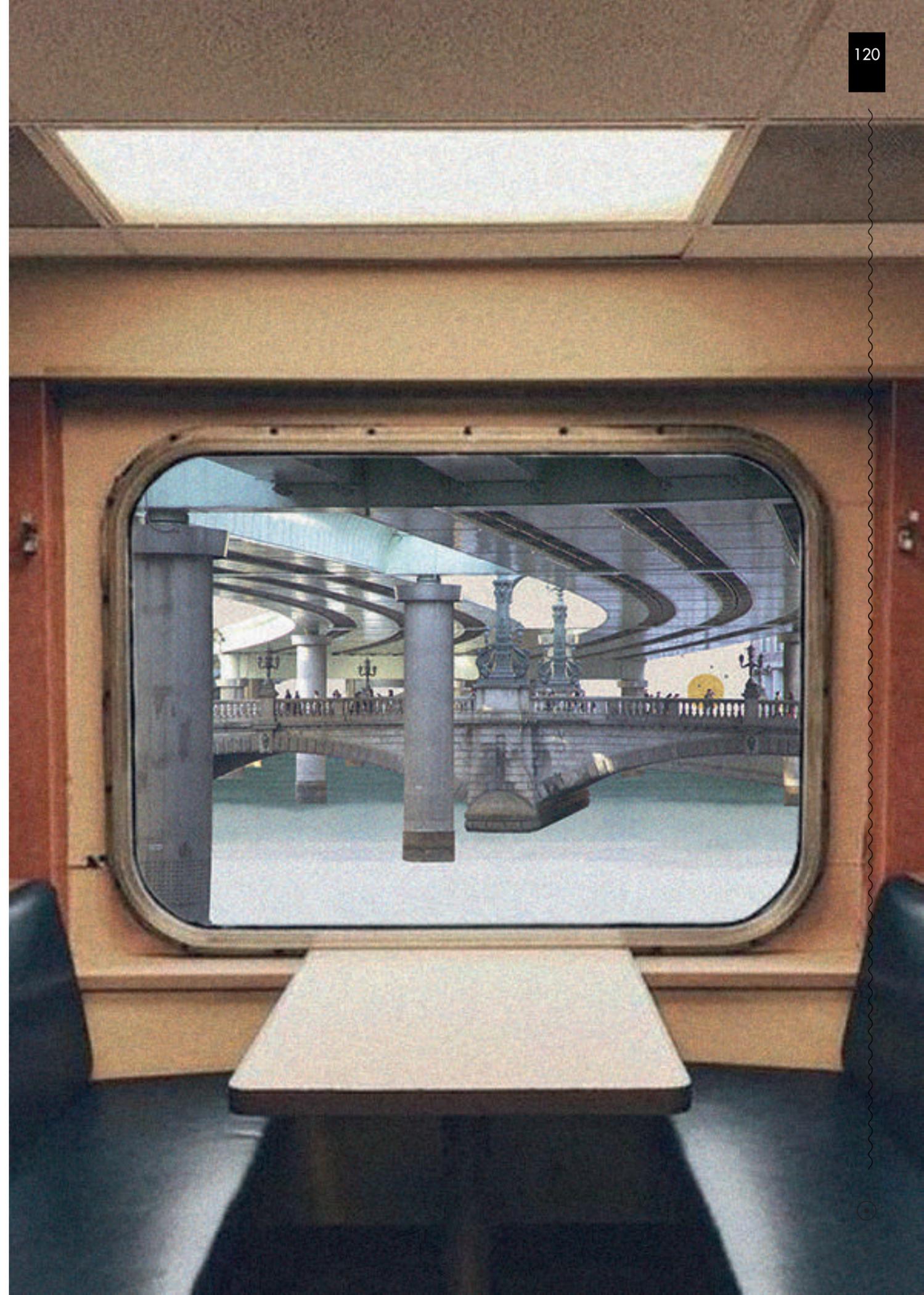
The landscape that stands before me is even different: the great bay of Hiroshima, with its multitude of small steep islands, full of vegetation, an emerald green water in tune with the palm trees that crowd the promenade, the oyster farms scattered in groups, like placid animals lying in the sun.

The train stops. I go down to Tenno Portopia.

A Japanese Story

Landscape through a Train Window

Different Shades of the Relationship City - Water



A Japanese Story

Landscape through a Train Window

12:00 Productive Sites of Island Villages



A Japanese Story

Landscape through a Train Window

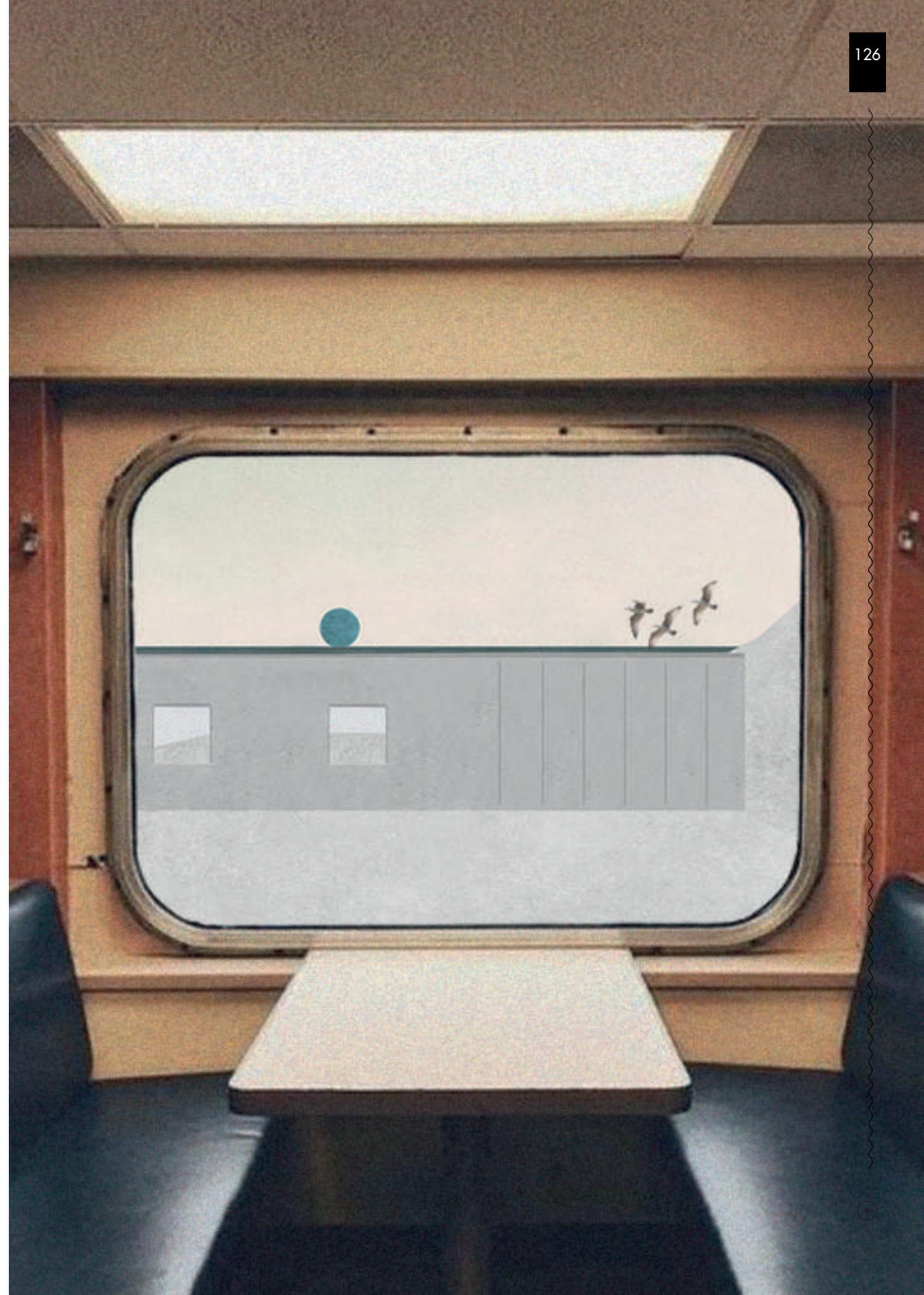
13:10 Onomichi Hill



A Japanese Story

Landscape through a Train Window

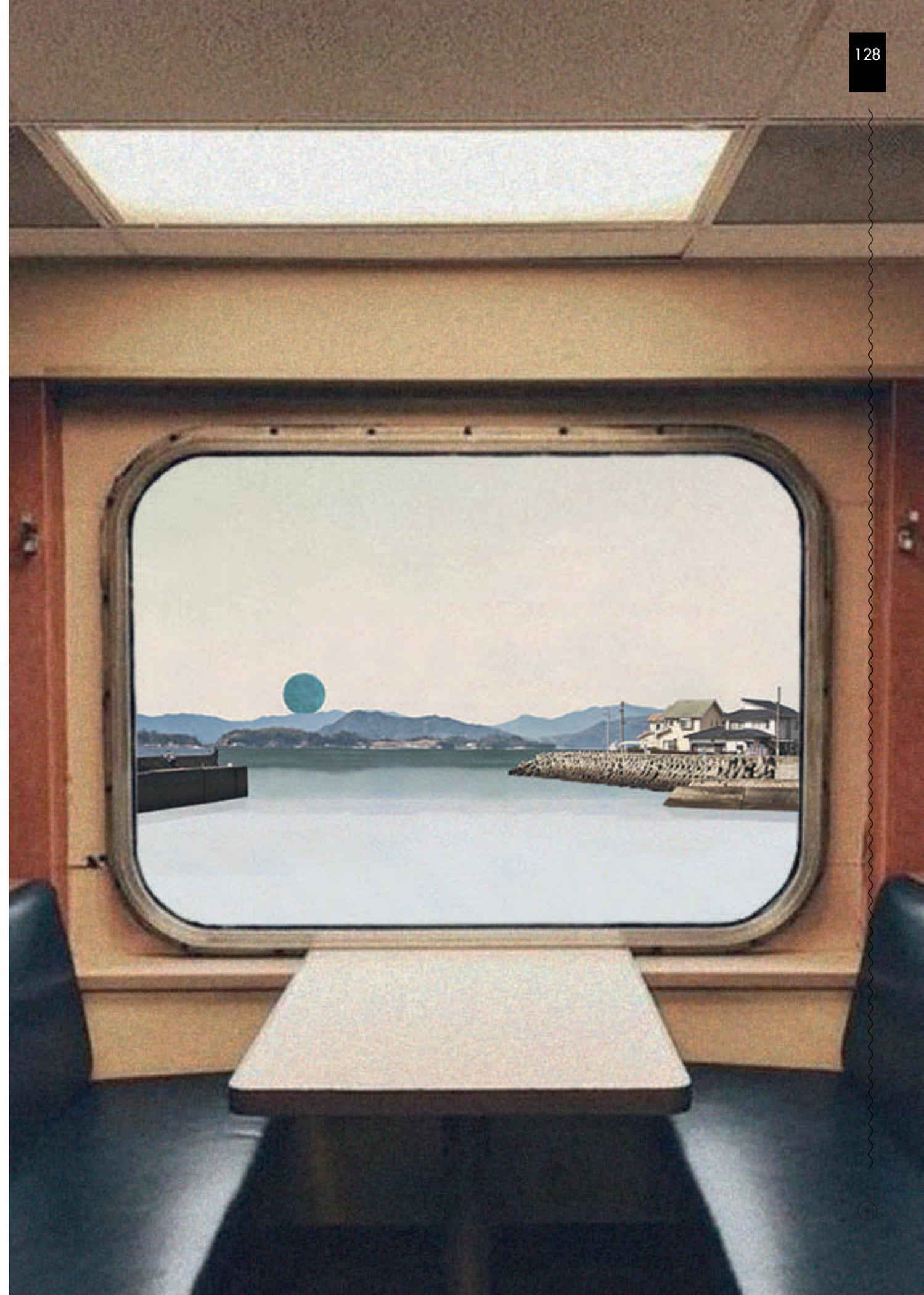
13:50 the Space just before a Tsunami Wall



A Japanese Story

Landscape through a Train Window

16:20 Tenno inner Bay

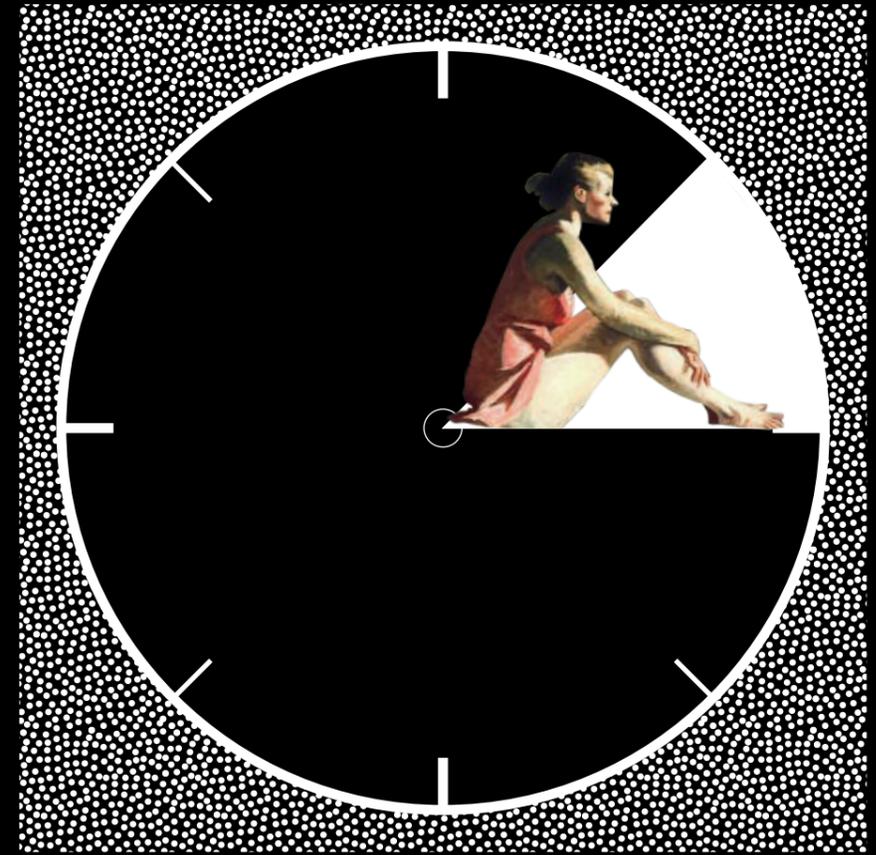


A Japanese Story

Landscape through a Train Window

19:00 back to Hiroshima





Waiting for the Train



Japanese Public Spaces Summary

Most Frequent Themes of Japanese Public Space

COVERED PROMENADE

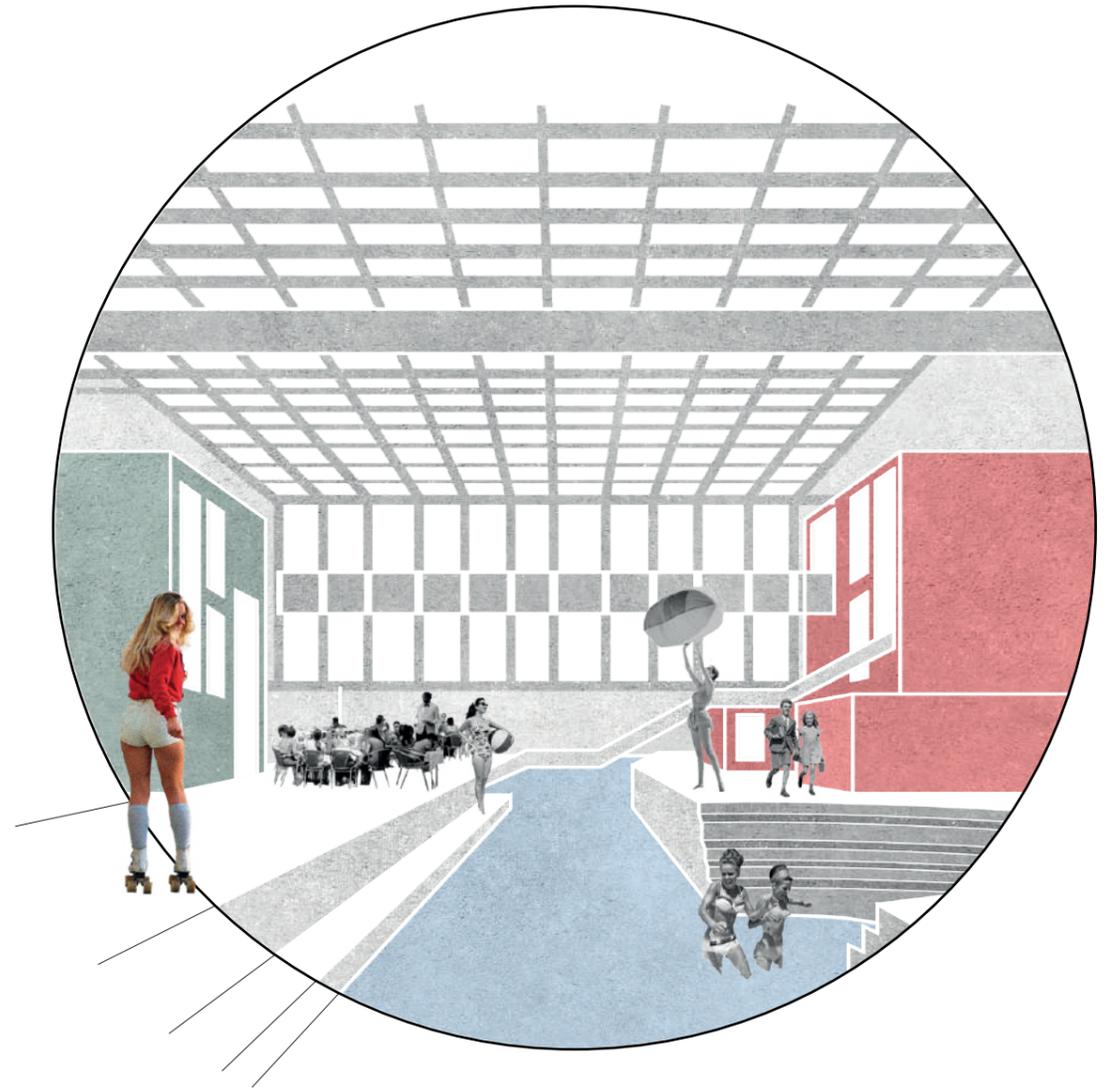


In Japan, the primary commercial space and aggregation, a covered street, place of the market that, with the expansion of the city in Meiji, becomes a real commercial artery.³⁰

Differentiated according to the region, it still maintains fixed characteristics, such as the pitched roof, a greater height than the traditional urban fabric and the possibility of aggregation, unusual in Japan.

The contemporary reinterpretation of the covered road is a commercial axis that catalyzes the retail, leisure and catering functions of the urban reality.³¹

INDOOR PLAZA



The term square in Japanese society translates into *hiroba*, which literally means broad open space. In postwar Japan, urban debate revolves around the lack of effective public space within the city. Japan, in fact, lacked not only a democratic tradition from the political point of view, but also from the urban one.²⁶

This marks a marked difference with the western world, in which from ancient Greece to the present day the squares have been the symbol of community identity and a means of creating city awareness.²⁷ The *modern age* squares, not rooted in local tradition, often end up being almost completely unused.²⁸

The contemporary solution is to create a *full space*, within gather not only people but designed and specific functions, in order to give guide lines to the users.²⁹

Infrastructure as a Collective Space

The question to which the thesis in question attempts to answer is also linked to a new conception of public space, deriving from the above considerations.

How can we reinterpret public space in a less rhetorical and monumental way, fragmenting it according to its specific functions in a more minute, sustainable and flexible way, as an accessory and parasite applied to the infrastructure?

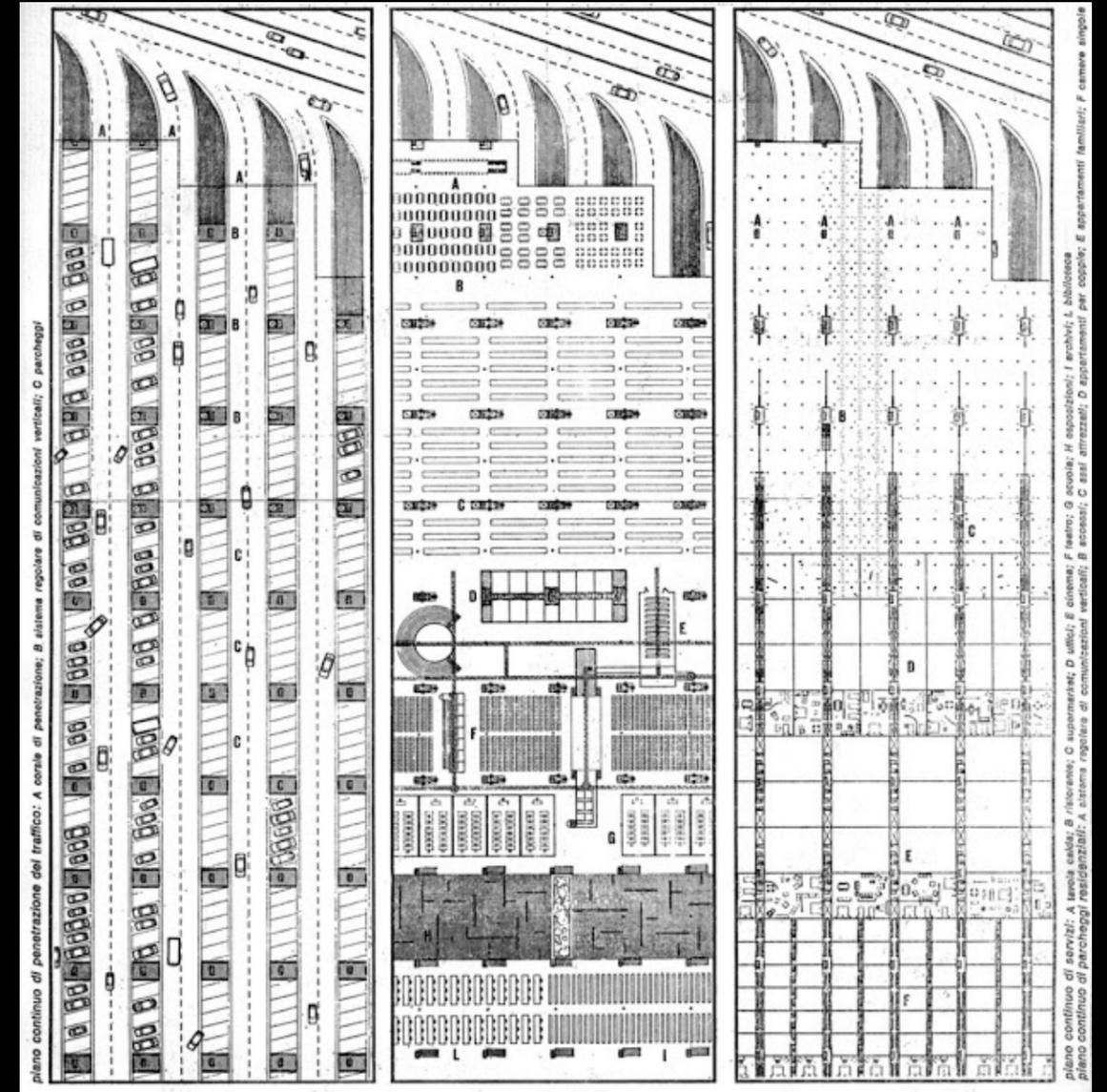
Through a second skin, the unveiling process of the potential that is the Japanese infrastructure system can become a resource, as a new collective space.

- ¹ Merriam-Webster Dictionary. Springfield: Britannica.
- ² Nolli. 1748. Nuova pianta di Roma. Roma.
- ³ A. Rossi. 1966. *L'Architettura della città*. Milan: Mondadori.
- ⁴ K. Kuma, H. Jinnai, S. Tomoyuki. 2015. *Hiroba: all about public spaces in Japan*. Tokyo.
- ⁵ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ⁶ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ⁷ H. Jinnai. 1995. *Tokyo, a spatial anthropology*. Tokyo.
- ⁸ K. Henshall. 2012. *A History of Japan: From Stone Age to Superpower*. London: Palgrave Macmillan.
- ⁹ J. Sand. 2013. *Tokyo Vernacular*. Los Angeles: University of Berkley.
- ¹⁰ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ¹¹ L. McClain. 2002. *Japan: A Modern History*. New York, NY: W. W. Norton & Company.
- ¹² J. Sand. 2013. *Tokyo Vernacular*. Los Angeles: University of Berkley.
- ¹³ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ¹⁴ L. McClain. 2002. *Japan: A Modern History*. New York, NY: W. W. Norton & Company.
- ¹⁵ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ¹⁶ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ¹⁷ H. Imai. 2017. *Tokyo roji : the diversity and versatility of alleys in a city in transition*. Tokyo.
- ¹⁸ H. Jinnai. 1995. *Tokyo, a spatial anthropology*. Tokyo.
- ¹⁹ J. Sand. 2013. *Tokyo Vernacular*. Los Angeles: University of Berkley.
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- ²⁴ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ²⁵ K. Kuma, H. Jinnai, S. Tomoyuki. 2015. *Hiroba: all about public spaces in Japan*. Tokyo.
- ²⁶ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ²⁷ K. Kuma, H. Jinnai, S. Tomoyuki. 2015. *Hiroba: all about public spaces in Japan*. Tokyo.

- ²⁸ T. Daniell. 2008. *After the Crash: Architecture in Post-Bubble Japan*. New York.
- ²⁹ K. Henshall. 2012. *A History of Japan: From Stone Age to Superpower*. London: Palgrave Macmillan.
- ³⁰ M. Jonas, H. Rahmann. 2014. *Tokyo void: possibilities in absence*. Amsterdam.
- ³¹ H. Jinnai. 1995. *Tokyo, a spatial anthropology*. Tokyo.
- ³² A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ³³ L. McClain. 2002. *Japan: A Modern History*. New York, NY: W. W. Norton & Company.
- ³⁴ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.
- ³⁵ L. McClain. 2002. *Japan: A Modern History*. New York, NY: W. W. Norton & Company.

#3

*Infrastructure as a
Continuous
Monument*



Archizoom. "No Stop City". 1970

A Metabolist Urban Landscape

"The happenings within spaces in the city, the transient throw-away objects, the passing presence of cars and people are as important, possibly more important in determining our whole future attitude to the visualization and realization of city."

_ Warren Chalk



Infrastructural Network Comparison

JAPAN

population: 127 millions
 total roads network length: 1.152.000 km
 number of vehicles: 71.722.762
 total parking lots + roads surface: 1.316.591 hectares

USA

population: 329 millions
 total roads network length: 6.310.000 km
 number of vehicles: 231.509.100
 total parking lots + roads surface: 15.919.615 hectares

CANADA

population: 37 millions
 total roads network length: 902.000 km
 number of vehicles: 17.262.358
 total parking lots + roads surface: 2.275.656 hectares

MEXICO

population: 126 millions
 total roads network length: 342.000 km
 number of vehicles: 7.850.000
 total parking lots + roads surface: 862.976 hectares

GERMANY

population: 82 millions
 total roads network length: 656.000 km
 number of vehicles: 45.793.762
 total parking lots + roads surface: 749.725 hectares

FRANCE

population: 68 millions
 total roads network length: 893.000 km
 number of vehicles: 33.089.000
 total parking lots + roads surface: 1.020.586 hectares

UK

population: 67 millions
 total roads network length: 372.000 km
 number of vehicles: 30.931.191
 total parking lots + roads surface: 425.149 hectares

SWEDEN

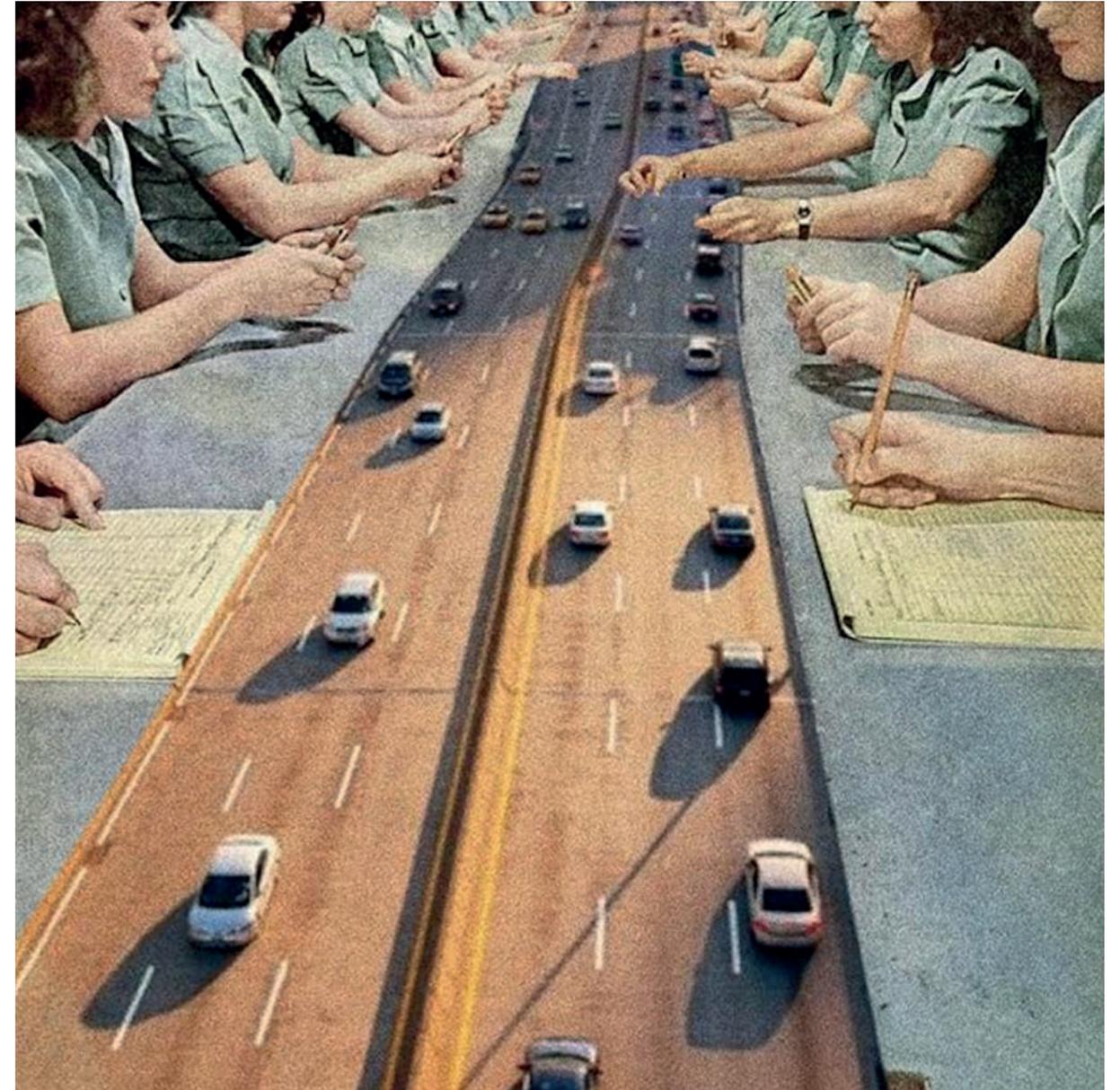
population: 10 millions
 total roads network length: 211.000 km
 number of vehicles: 4.259.027
 total parking lots + roads surface: 241.146 hectares

Dimensional Scale Comparison



Infrastructural Scale Comparison





The Production of Territory
@syzygylab

THE PRODUCTION OF TERRITORY

Infrastructure, which today has a very different and varied meaning, associations and implications, is a modern term. Its first uses are made in English, in the last decades of the nineteenth century, in essays on the drafting of the railway system in place on French territory. The term, since the second post-war period, has been used in the diplomatic field by NATO, as a reference to the international programmes for the implementation of defence in Europe, including both physical installations (railways, bridges, motorways, airports, ports, military bases) and equipment aimed at intensifying communication, energy, water control, irrigation, tides, floods, and even with a productive meaning, with industries, warehouses, depots, fuel and the process of financial collection to allow the realization of every single "infrastructural" action. On the other hand, infrastructure is not only a modern temporal term at the linguistic level, but also conceptual, referring not so much to a single object, but, synectically, to a complex system of tools, interrelations, heterogeneous elements designed for a simultaneous process. This concept refers to the term "apparatus", coined by Michel Foucault.¹

In addition, the infrastructure system has a strong and decisive geopolitical connotation, landscape, associated with the production of the territory. But how do the infrastructure and the soil appear to be linked?

Geographer Stuart Elden underlined how the etymology of the term "territory" derives from two origins: the Latin one, referring to the word earth, *terre*, but also from *terrere*, which means "to frighten".² This highlights the strong connection between the territory and the act of violence aimed at establishing and maintaining borders, barriers, in a constantly fragile balance between inclu-

sion and exclusion. The question that is raised is therefore whether the territory is an object, a given element and always present or, rather, the result of a process in continuous evolution. Henri Lefebvre, in his conception of urban space, conceives the territory as "an outcome, or a process that inscribes social relations upon a terrain". The territory, therefore, is nothing more than the contemporary stage of a continuous becoming, constantly produced, modified, reproduced through technologies and political dynamics, through techniques of control and management, through conflicts, disputes, claims, wars.³

The infrastructure, in this contextual scenario, operates as one of the primary technologies in the evolutionary process of the territory, structuring and restructuring actively and constantly its dynamics, the geo and biopolitical relations between the people who live in that territory and between the same and the people. For these reasons, the infrastructure is a highly complex and heterogeneous apparatus. The consideration of such different elements becomes critical especially in a contemporary situation in which the socio-economic context turns towards scarcity of resources, security, risk, in an ambitious perspective of reduction of consumption and waste.

It becomes imperative, therefore, for designers, planners, politicians, to reinterpret the infrastructure from a different point of view, understanding its strong potential, as an element in continuous evolution, means of flow and circulation.

Infrastructural systems tend to increase in complexity and objectives as the size and importance of urban and social space increases, they are continuously hybridized with technological systems, retrofitted with innovative skills and gadgets, extended, revised, implemented to meet the needs of

contemporary mobility, reworked according to parameters and paradigmas in continuous change, institutional practices, policies, funding, through the entry into play of a diverse multitude of actors, both political and community, both governmental and private economic interests. It is clear, therefore, that the process of generating and planning the infrastructure system is complex and extended over a rather long period of time, in an incremental manner. These are among the main reasons that led the Japanese government to impose national decisions after the end of the Second World War, so as to accelerate the drafting of an infrastructure system that was then almost completely absent and crucial to the economic, social and urban development of the country.⁴ These great founding systems, even though they have a pre-eminent role in the creation and development of contemporary society, often remain unnoticed, with an almost indifferent attitude that leads the daily life of cities to ignore them, leaving them as a backdrop.

They are often, as in the case of Japan, the result of laws, parameters, generic protocols that do not take into account local specifications and any environmental consequences. Omnipresent and anonymous, they are common and obvious in the contemporary urban landscape. The infrastructure, in fact, could be considered an underlying urban logic that perpetuates uncontrolled production and consumption conventions, independent. In fact, the study of infrastructure as an urban device, "apparatus", requires an almost forensic analysis practice, able to discover, derive, study and understand this device, whether it is related to borders, limits, water, logistics, protection.

Finally, the recognition of infrastructural apparatus is necessary and fundamental to

the design and redesign of infrastructure, aimed at revealing its spatial and architectural potential.

This process absorbs its heterogeneous essence and is based on the implementation, reconversion and activation of infrastructures, inserting them into a socio-economic, collective and attractive framework, through their internal logics, codes and processes, so that the process itself is incremental and does not result in a violent reaction between man, urban space and territory, water, nature and the environment as a whole.

The process of metabolisation and understanding of the infrastructure and its action in the production of the territory, must not be conducted through its mere material characteristics, but also through the relationships of violence inherent in the definition and control of space, within the limits, in the fragmentation of the landscape, and, finally, in the symbolic value, as social identity of the territory itself, the equilibrium of which has been subverted by the imposition of infrastructure.

The violence in question refers on the one hand to infrastructure as a means of border control, to imposition as an essential separation limit, or when a productive nerve-cracking territory is isolated from the indigenous community in which it is located for economic and fruitful reasons, but on the other hand it indicates the relationship of violence that exists between man and the natural element, in the perpetual attempt to control nature, including each aspect causing environmental degradation and "natural disasters", so common on Japanese territory, such as typhoons, earthquakes, tsunamis, floods, tornadoes, landslides.

If it were possible to frame the infrastructural system from a sustainable, resilient,

communitarian and social point of view, the unveiling of its potential and the action on it would be more directly and effectively appropriate.

Japanese Engineered Landscape

"Good design can take infrastructure projects beyond providing mere utility to creating great public spaces."

_ Neal Morris



#infrastructure treatment

Kenzo Tange's Tokyo Bay project (1960) is one of the first examples of the fusion between architecture and infrastructure and casus belli for the drawing up of the Metabolism manifesto.¹ Since this historical phase, Japanese architecture literally metabolizes, incorporates and merges with the infrastructure until it becomes a hybrid between the two realities.

These projects often remain provocative, if not for some examples of Tange and the Nakagin Capsule Tower by Kurokawa, the fulcrum of the expansion south of Ginza where an elevated motorway is framed by architecture peculiar to Metabolism.²

#flexible / activating / plug in structures

Through some of the cornerstones of traditional Japanese architecture, such as extreme flexibility, modularity and interchange of parts, we arrive at a concept of architecture that can meet contemporary needs: the living architecture.³

Derived from metabolism, the plug in architecture is characterized by resilience, to adapt to ever-changing conditions, effective both in autonomy and in coexistence with pre-existing architecture.



Hybrid Forms of Cityscape

"The strongest separations are between architecture and civil engineering, or between architectural and urban planning, and these can be seen throughout bureaucracies and the academy.

There are many problems stemming from this situation, but the most immediate is that a location cannot be thought through in its totality. There are countless instances of the environment in fact being aggravated by being fed with uncoordinated ideas from different fields, let alone monetary wastage. So it would be good if we could create and maintain our own environment by losing the strict definition of such categories as architecture, civil engineering, urban planning, as well as advertising, agriculture and geography. This is the cross-category match of urban production.

If the categories can be cross-bred, the tools for organising a coordinated environment can suddenly increase manifold.

This cross-categorical hybridisation is already present and condensed in Japanese urban area, especially in Tokyo."

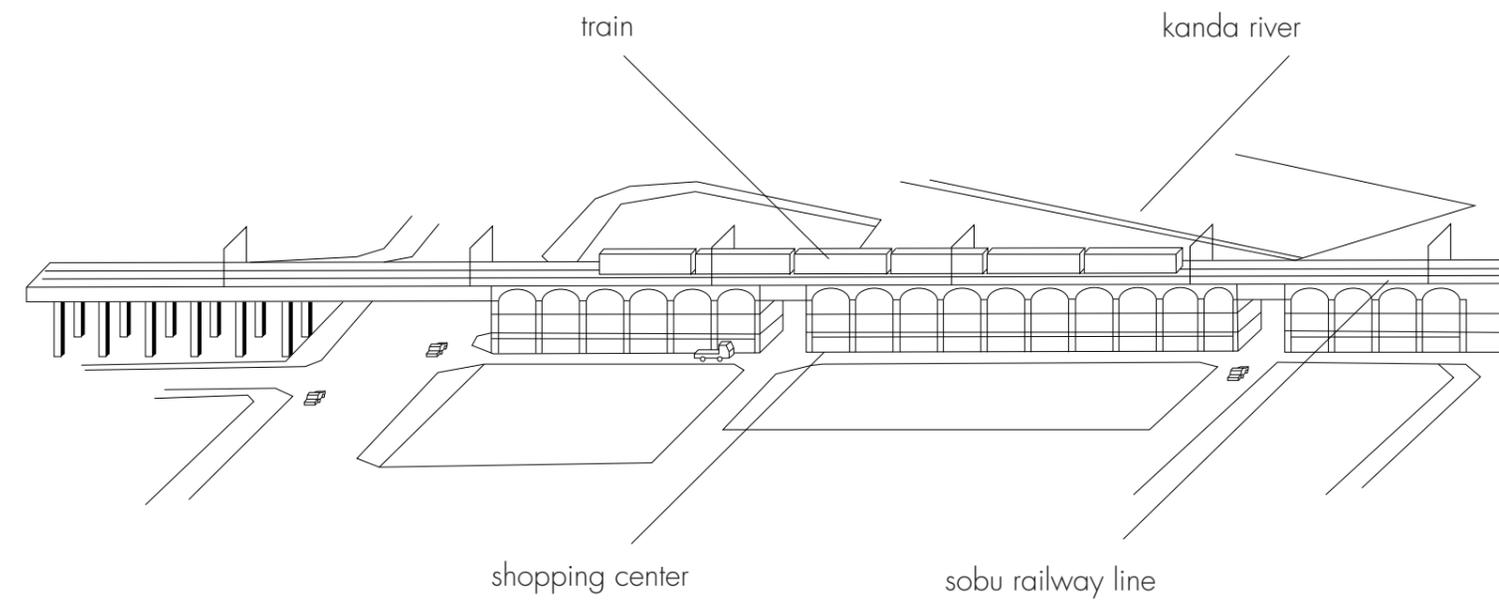
_ Atelier Bow Wow

Hybrid Items: Tokyo Urban Landscape

Although the practical application of metabolism as an architectural avant-garde has not been perpetuated, its conception is rooted and so are its values. In Japan, in fact, we have seen a hybrid mixture of engineering structures, mobility, infrastructure and architecture, unique in its kind.

Walking through Tokyo, looking up, taking the train, looking out the window, you can see these giants, even in the extreme heterogeneity of the Japanese metropolis. Through these hybrids, architecture and infrastructure have entered into an indissoluble contact in which many urban dogmas have been eliminated or demolished, creating a new balance between interior and exterior, between public and private, between pedestrian and vehicular, between mobility, residence and services.

Below is an analysis of some peculiar examples of this phenomenon, scattered throughout the metropolitan area of Tokyo. ¹⁶

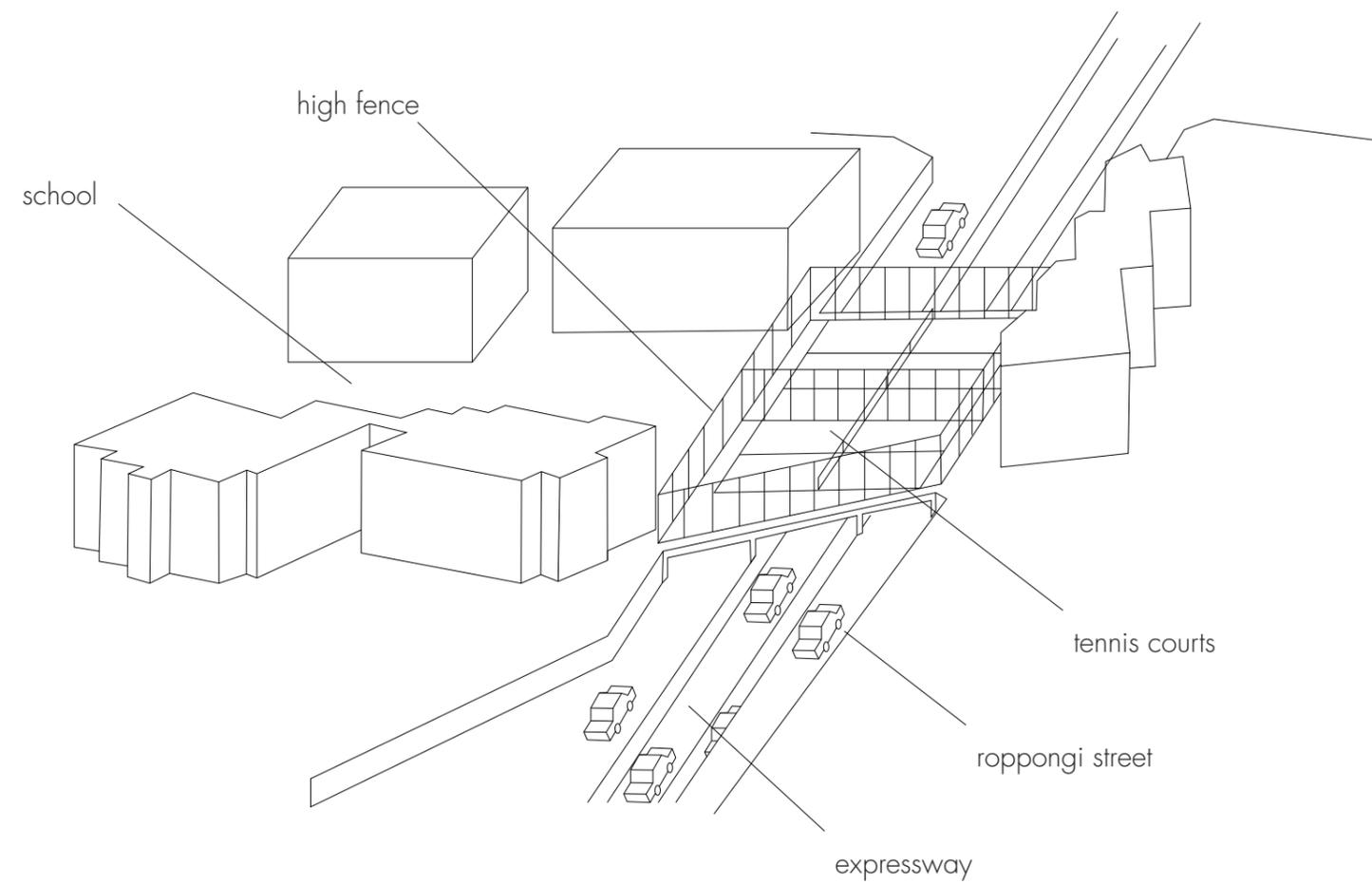


01

Railway Line + Shopping Center

function: railway bridge + shopping arcade
 location: Chiyoda - ku, Tokyo - to

- _ next to Akihabara Station
- _ 300 m x 3 floors of shopping arcade
- _ the railway becomes the bridge of the mall

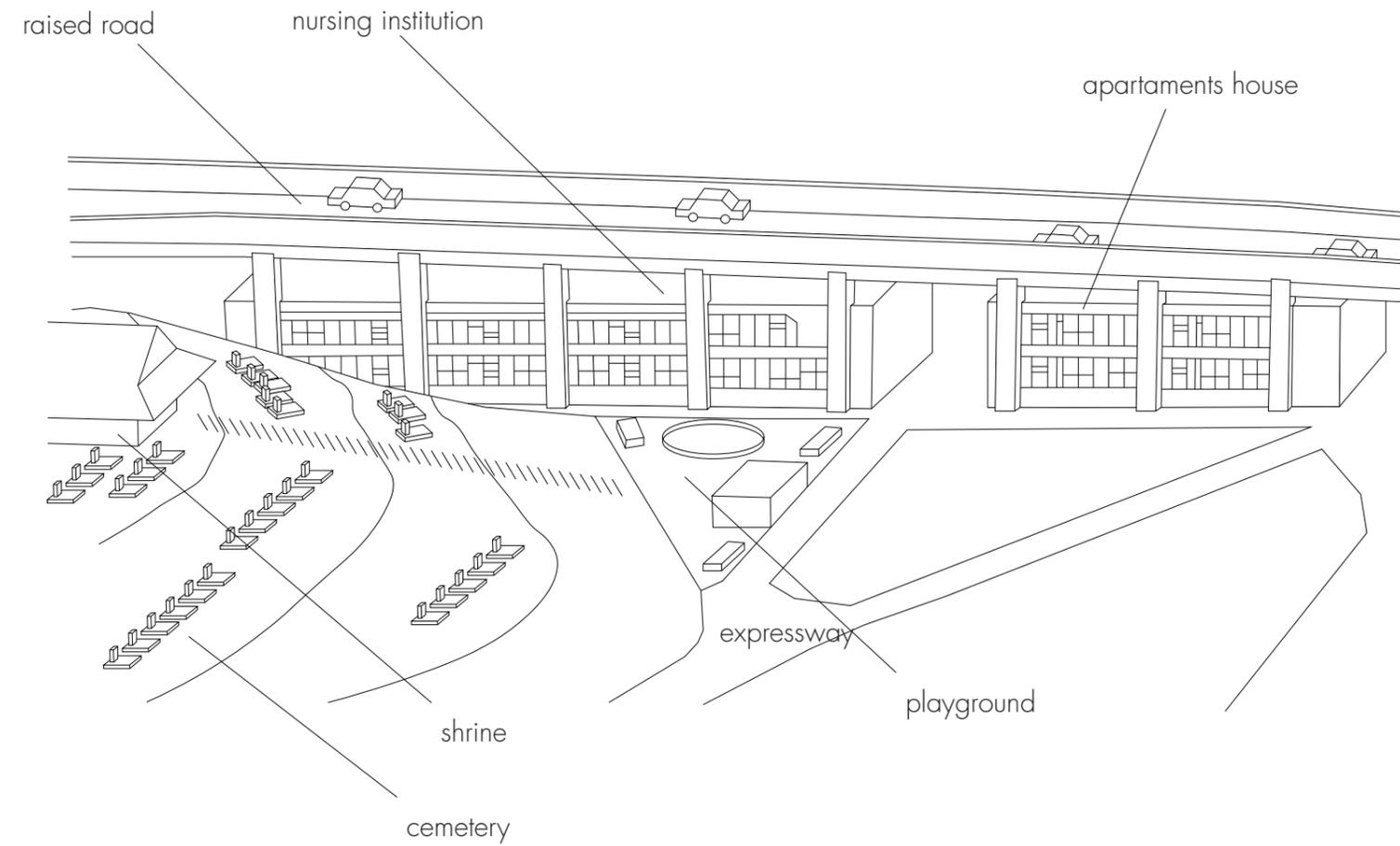


02

Sports Bridge

function: sports bridge + expressway tunnel
 location: Shibuya - ku, Tokyo - to

- _ tennis courts belonging to the school
- _ public tennis courts

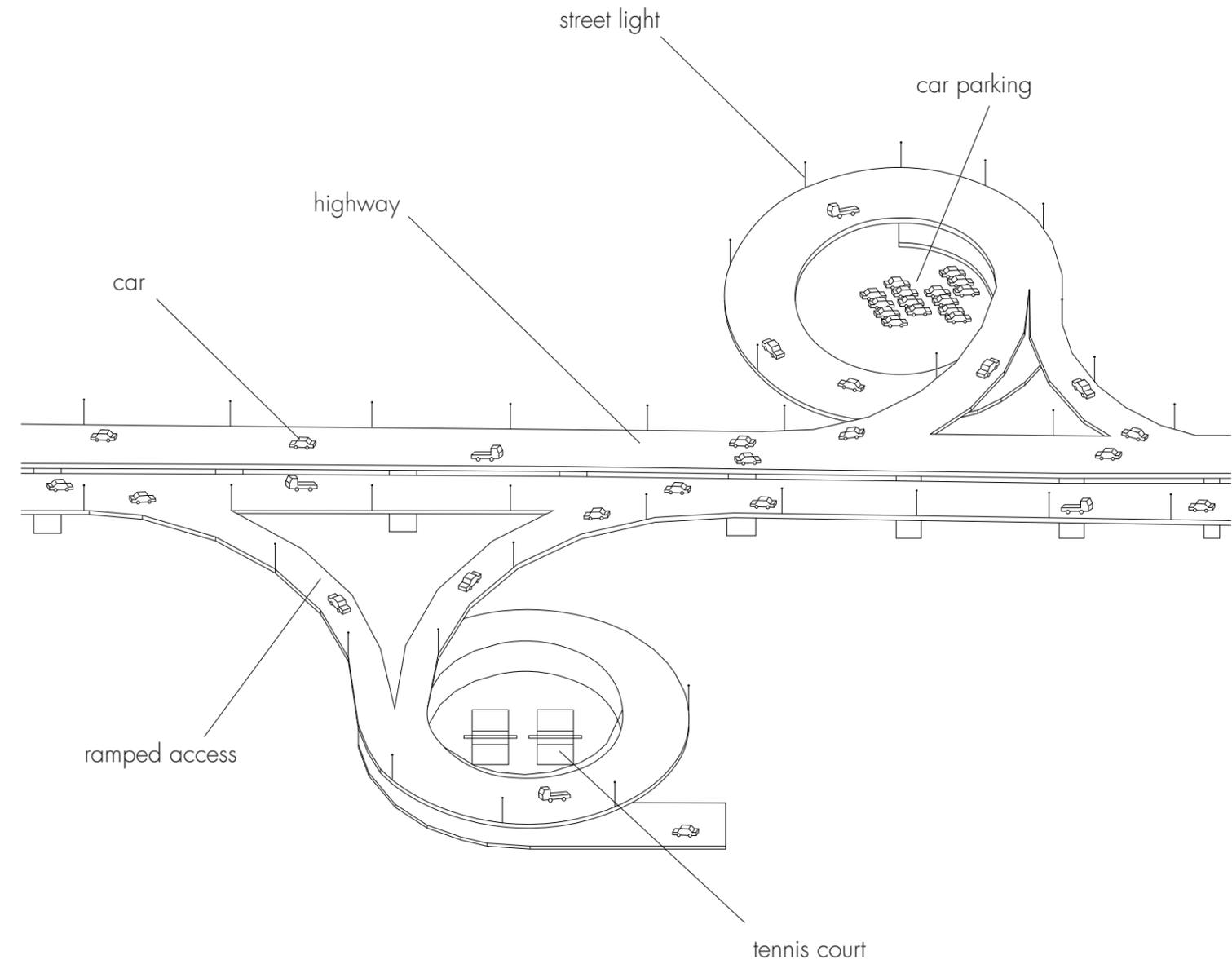


03

Residential Bridge

function: cars bridge + nursing institution + apartments house + park
 location: Minato - ku, Tokyo - to

- _ structural cohesion between bridge and the buildings
- _ raised roadway

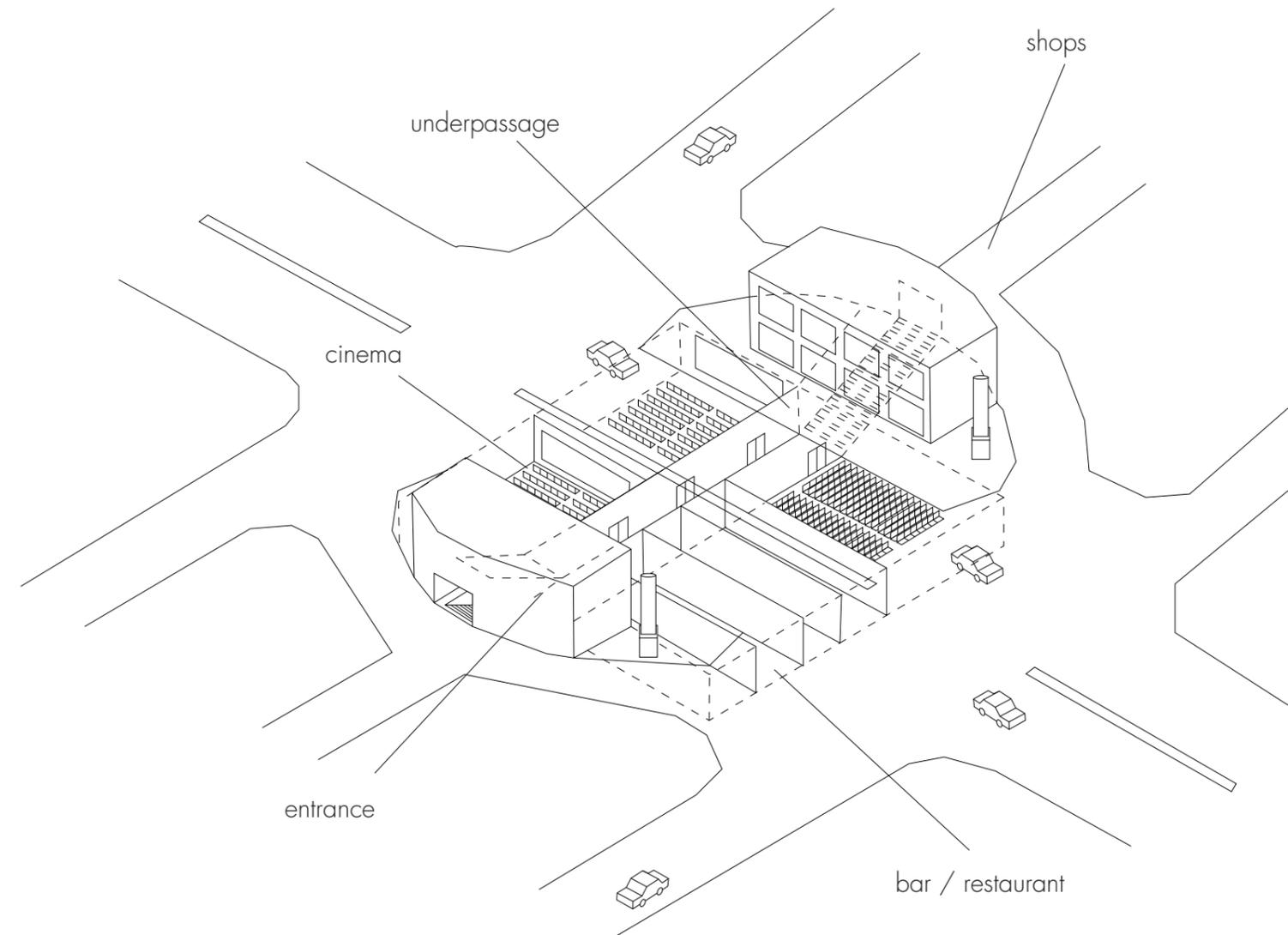


04

Interchange Hub

function: highway + expressway + parking + sports fields
 location: Adachi - ku, Tokyo - to

- _ the courtyards enclosed by the spiralling of the highway host different mixed activities
- _ raised highway

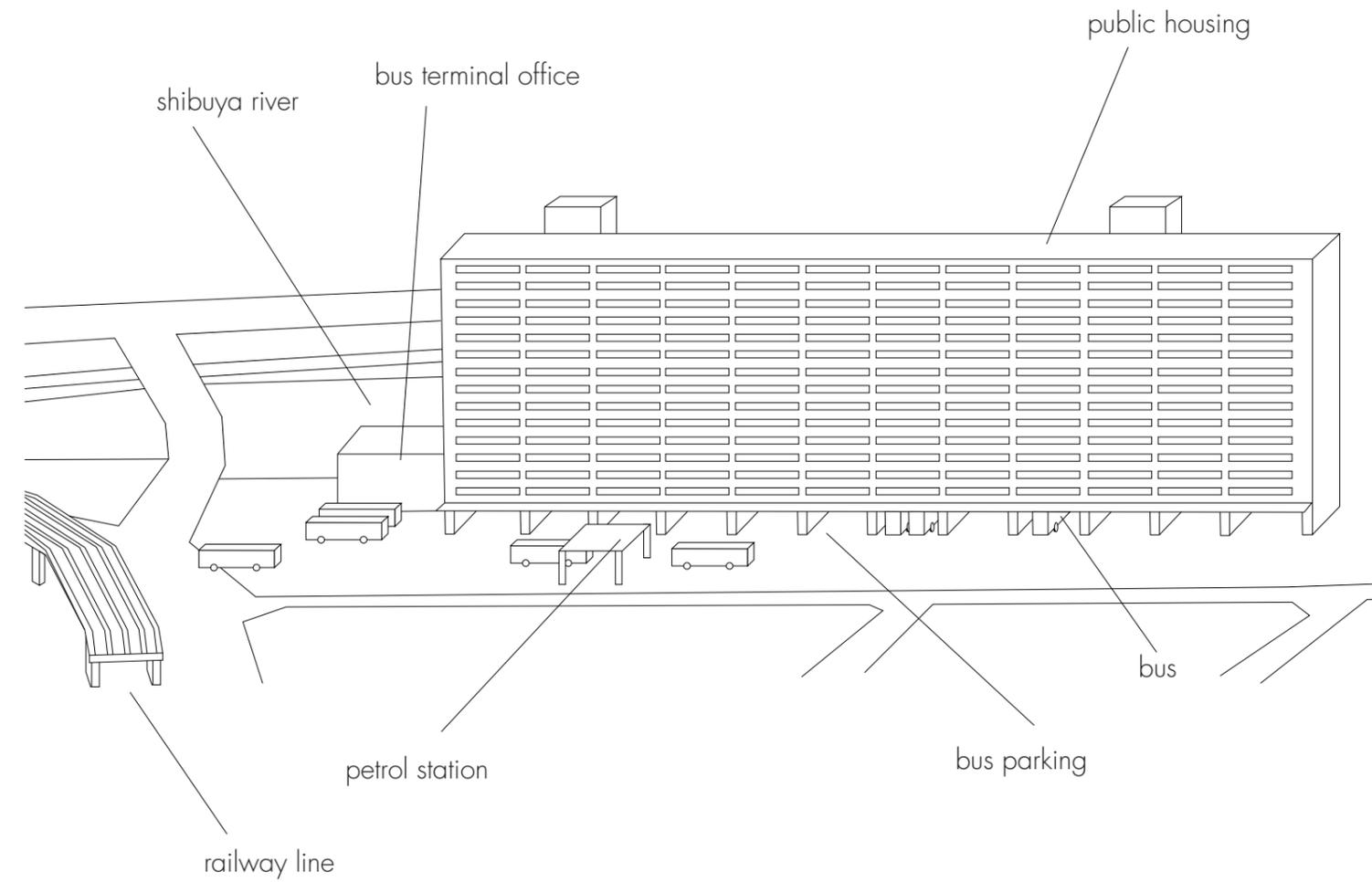


05

Leisure Bridge

function: movie theatre + shops + bars + bridge
 location: Ginza - ku, Tokyo - to

- _ in the famous *kabuki theatre* area
- _ built under Harumi bridge when there was still the Harumi river
- _ 50 m long

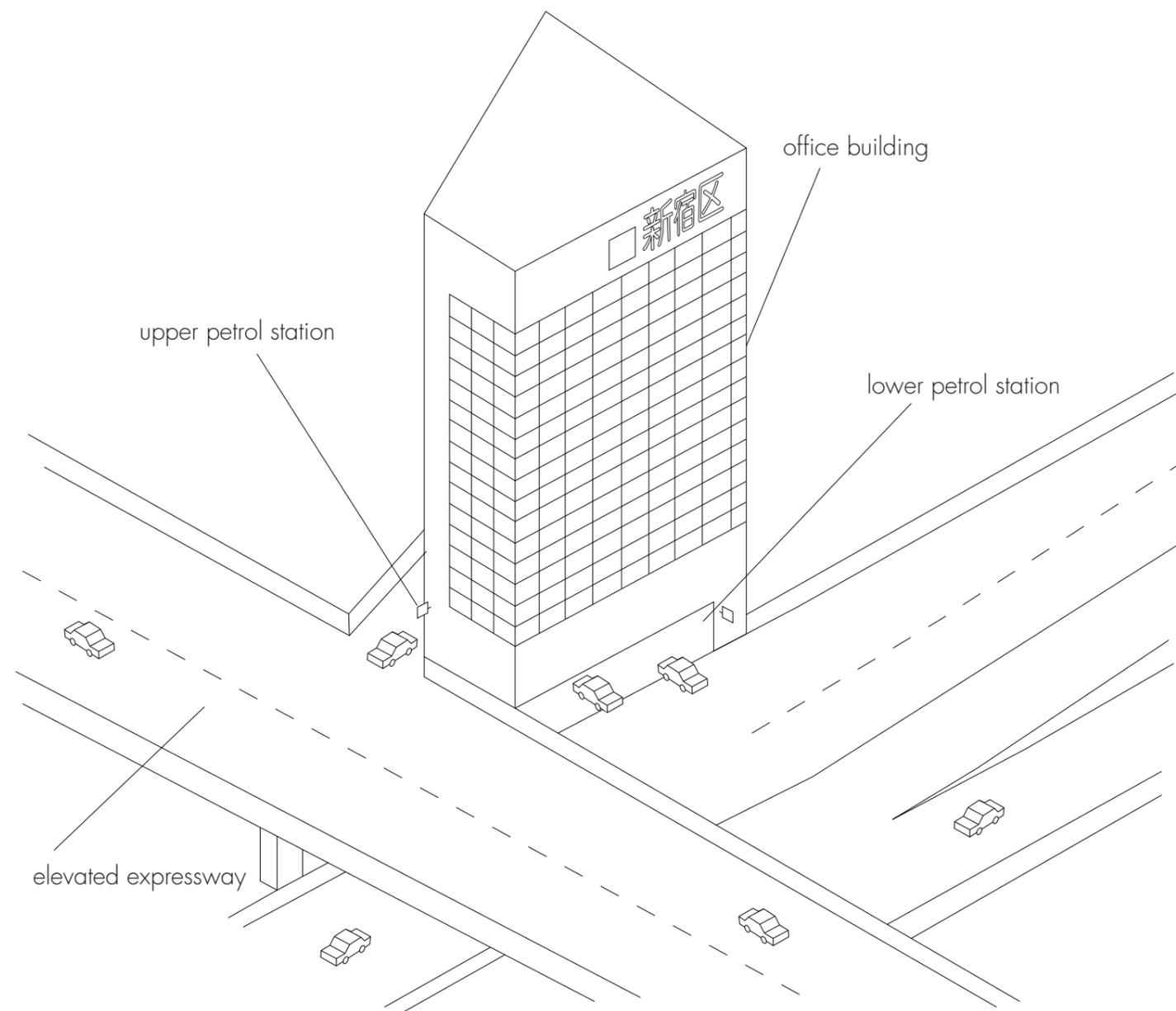


06

Bus Terminal Housing

function: bus terminal + apartment housing
 location: Shibuya - ku, Tokyo - to

- _ next to shibuya train station (the second busiest in Japan)
- _ extreme modularity: 1 bus length = 1 apartment length
- _ each structural module allows parking for 2 buses and space for 2 apartments
- _ people = buses = same shape

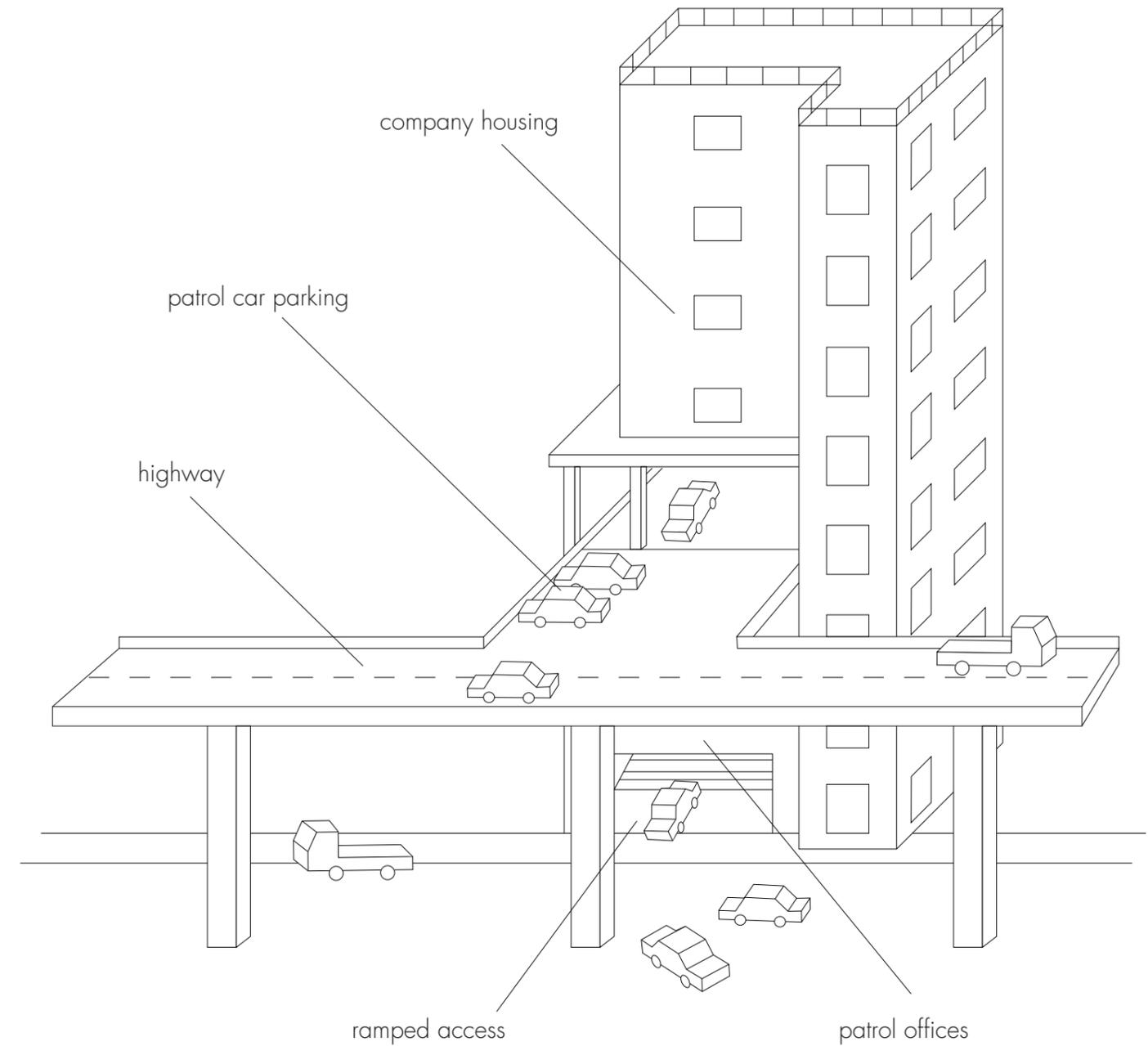


07

Office Building / Double Layered Petrol Station

function: office building + petrol stations + expressway bridge
 location: Shinjuku - ku, Tokyo - to

- _ next to shinjuku train station (the busiest in the world)
- _ double layer petrol stations, accessible both from upper and lower entrance



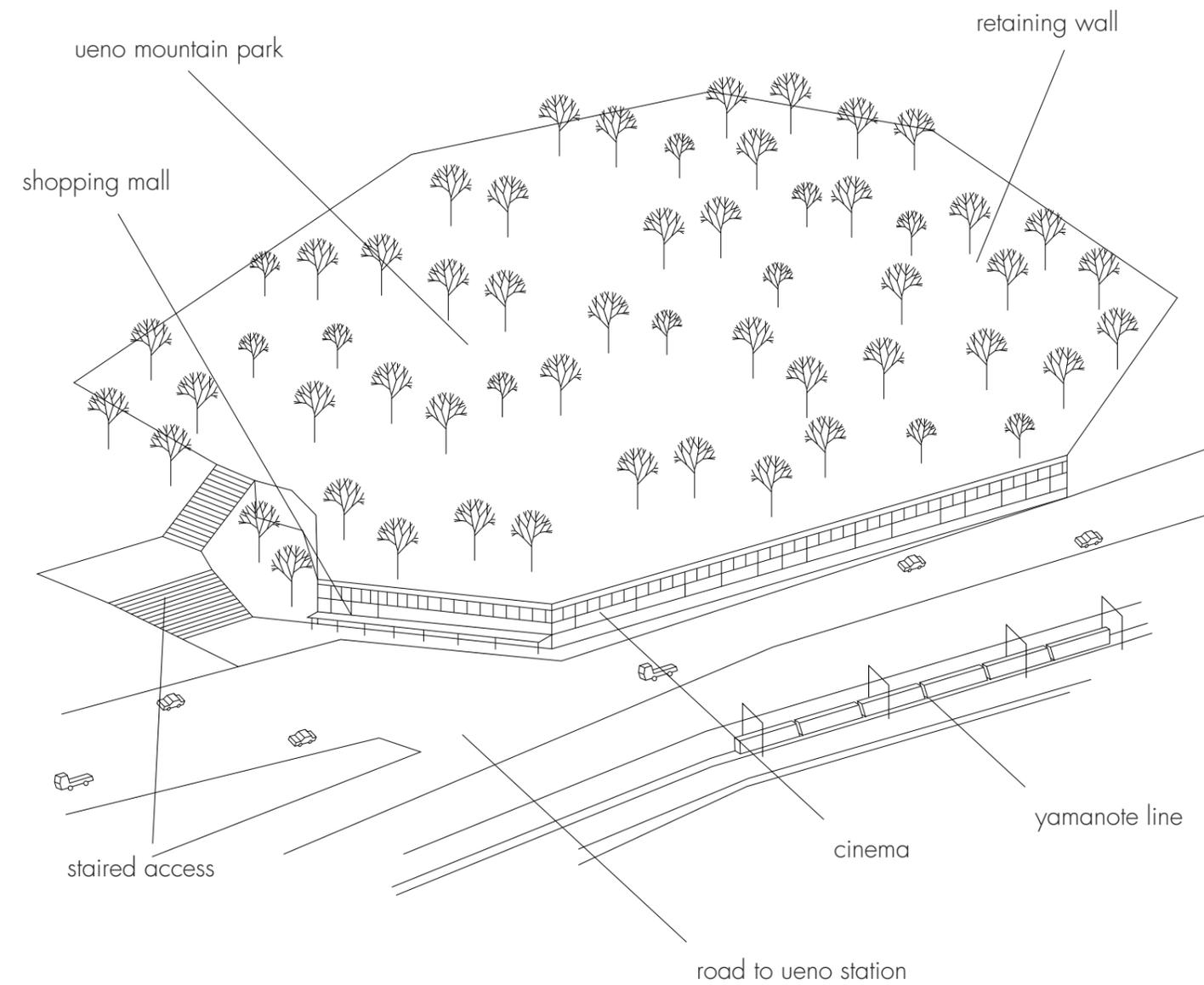
08

Highway Patrol Building

function: patrol car office + highway + patrol carparking + company housing

location: Minato - ku, Tokyo - to

- _ the only building with a direct access to the highway
- _ no barrier, the bridge connecting the building to the highway is also a parking lot for patrol cars



09

Retaining - Shopping Wall

function: retaining wall + park + shopping mall + cinema
 location: Ueno - ku, Tokyo - to

- _ next to Ueno Station (Shinkansen) and Yamanote Line (circulare line of Tokyo City Center)
- _ 130 m of retaining wall holding back Ueno mountainside
- _ shopping mall and movie theatre underneath it



Japanese Railways are 27,268 km long

9.147 billion Passengers per Year

260 billion Passenger - Kilometres

46 of the 50 World busiest Train Station are in Japan

CONTEMPORARY DEBATE

"Construction on a gigantic scale disconnected from the city flourish throughout the world, extreme bulwark of that race to urbanization that marks the evolution of our planet and that will come in 30 years, it is estimated, at 70 percent (compared to less than 10 percent in 1900). It's a phenomenon that's spreading in urban centers around the world where these "huge symbolic surrogates of the city" that Richard Ingersoll stigmatizes with the term *hyper-tectura* gradually take the place of fabrics made from buildings on a human scale connected by public spaces, and turn the spotlight on a scenario that needs to be monitored and managed.

_ Winy Maas, DOMUS, June 2019.

The contemporary debate on urban space generates a budget in which the weight of infrastructure is increasingly central.

Their analysis, study, metabolisation are tools to reactivate these spaces, their potential to improve the quality of life of citizens. Leonardo Caffo underlines the central role of the "great works" in a contemporary situation, defined by him as the "age of collapse" (of the peripheries on the centres, of nature on culture, of the environment, of genres, of morals) and highlights the need to link the "great work" to a virtuous human dimension, because "great architectural works without great philosophies are only systemic infrastructure".¹⁷

The contribution of architect Richard Ingersoll, on the other hand, denounces the speculative operations that generate hyper-textures, "monuments to vanity that represent the global collective psychosis of waste". From his point of view, the winning strategy is to metabolize them in the production system, infiltrating the functionalities of these symbolic structures, making

them sources of clean energy.¹⁸

Regardless of what the ultimate goal of infrastructure reuse is, the central pivot lies in the awareness of their resounding potential.

Monuments in the territory, indelible signs in the cities, overbearing, enveloping, sinuous, hard, asphyxiating, iconic, the infrastructures have traced a furrow capable of radically and irreversibly changing the perception of space, on whatever scale you observe it. A careful analysis and reactivation through a process of "acupuncture" of what is the continuous monument, legacy of the '900, are central in the re-appropriation of identity of territories, public space, the relationship between citizens and the context that surrounds them but from which, often, the infrastructure divide them.

The large infrastructures are like a white, neutral canvas, suitable to accommodate different types of intervention depending on the local subjectivity, in a specificity of contemporary architecture far from the mere rationalist functionalism.

"Today's architecture is not like the former architecture, when it was used to be the representation of the society; in other words, the society established what architecture was. Today, our question is: how to express the individuality through architecture? Thus, in that way, the client is very important to bring the expression of the individuality."

_ Junya Ishigami, Interview: "Innovation Comes From Each One of Us", 2019.

Depending on the contextual characterization, therefore, microforms of use can be generated to reactivate the "white" surfaces that make up these colossal signs in the landscape.

MICROFORMS OF SPACE OCCUPATION IN JAPANESE CITIES

Spontaneous use of space, capable of generally correlated spaces, has always been a taboo in Japanese culture and urban history. The first revolts and occupations for free use and the possibility of meetings in public space date back to the 1960s. In 1969, the Shinjuku station, now the busiest in the world, was occupied by young tokiyots looking for answers from the government to questions about free expression within the limits of urban space. Live music, artistic performances, exhibitions, conferences, various experiments in the use of public space are carried out in Shinjuku.¹⁹

Although suppressed by the police and condemned by the media of the time, the event had a metabolisation in Japanese society, even if not the one desired by the demonstrators: from the 1950s and 60s idea of a plaza for democracy to the 70s and 80s idea of streets for commerciality.

In the following years, in fact, the only large-scale use of public space was for commercial streets, bound to the main shopping districts of the city, on certain days and precisely regulated by legislation on the formal use of space.²⁰

"In Japan, streets and alleys used to be typical open space for public life, while in the western world, squares and plazas are typical and symbolic open space for public life," says Kaori Ito. *"But now the streets and alleys are all private space, with nowhere to gather, or even to sit. Other types of open public space in Japan were the areas at foot of bridges, at wells and in temples and shrines,"* she adds. *"But modern city planning and motorisation changed those public spaces."*

In the contemporary Japanese cultural debate, the reuse and reactivation of infrastructures are increasingly central themes, and experimentation in this regard is manifold. One of the most recent examples is by the architect Hiroshi Ota.

"It's 3:30pm and a dozen Tokyoites are sitting in the middle of the asphalt road, on a street in the famously crowded entertainment district of Shibuya, having a picnic. They've brought snacks, beer and an entire roast beef, as well as a couple of 19th-century picnic sets, one of which is worth roughly £6,000. Passersby pretend not to notice, but you can tell from their sideways glances that they think it's a bit weird. Eventually a worried neighbour appears, ushering the group into his front yard, where there is a canopy to protect against rain."

_ Chris Michael, The Guardian, 2019.

Hiroshi Ota and Kaori Ito run the "Tokyo Picnic Club", inspired by 19th century London clubs, with the intention of extending the right to use Tokyo's public space in a spontaneous and less formal, controlled and designed way.

"Japanese authorities have refused to allow the use of public space," Ota says. "It's wrong, totally wrong."

FROM A POST-WESTERN JAPAN TO A NON-WESTERN JAPAN

"In the 1970s, following the oil crisis, Japan entered a period of stable (but slow) economic growth. The country seemed to look back and reflect on its past of repeated destruction and construction. In the process, it gradually unearthed aspects of itself that it had long forgotten, relating to the environment (water, greenery), history, culture, landscape, and townscape."

_ Hidenobu Jinnai, Evolutional Steps

toward the Post-Western/Non-Western Movement in Japan.

After the 1970s there was a diffused growing interest in Japanese proper legacy, in a process of slow but persistent acknowledgment of the Japanese identity and uniqueness.

So this period started an era of focus on bottom-up town-making techniques (Machizukuri), in which citizens/residents became leading protagonists.²¹

The urban theory in Japan started to have its own flows and references, shifting its focus from reflecting on development in periods of high economic growth, marked by repeated destruction and construction without regard to the characteristics of a place and an high economical engagement,

to focus on the uniqueness of a place, through topos and genius loci, with general enhancement of the environment, history, culture, landscape, and, overall, townscape.²²

This process underlined the Japanese city as strongly heterogeneous, separated and fragmented.

"Japan now needs to break away completely from the notion that 'modernisation = Westernisation' when it comes to development. It needs to harness all the wisdom, technology, and ideas that exist in abundance at the historical, social, and cultural

levels in the cities and provinces of Japan, and it needs to develop Machizukuri and regional development that takes advantage of all these resources. Japan has now fully entered a new stage, in which it is consciously and strategically aiming for the post-Western/non-Western."

— Hidenobu Jinnai, Evolutional Steps toward the Post-Western/Non-Western Movement in Japan.

In the development of cities, in Japan, "culture of cities" is what really matters. This concept emphasises the coexistence with nature, the 'memories of the land'.²³

Strong attention is paid to small details such as the topography, the morphology of terrain, hills, mountains or cliff lines, sloping green spaces, presence of trees, springs, sacred places and various kinds of waterfronts (rivers, moats, ponds, sea). This concept is feasible also in the crowdest city in the world, Tokyo. In Shimokitazawa, a neighborhood of the western area of the city, even if there is a lack of ancient buildings and heritage of the past, the public space is characterised by the linking of small-scale spaces to create 'migratory' pathways. In this way, common spaces are skillfully positioned amongst local residents, placing all over important gaps in order to create flexible living environments, and, furthermore, creating a strong connection between inhabitants and an even stronger and distinct sense of history and place.²⁴



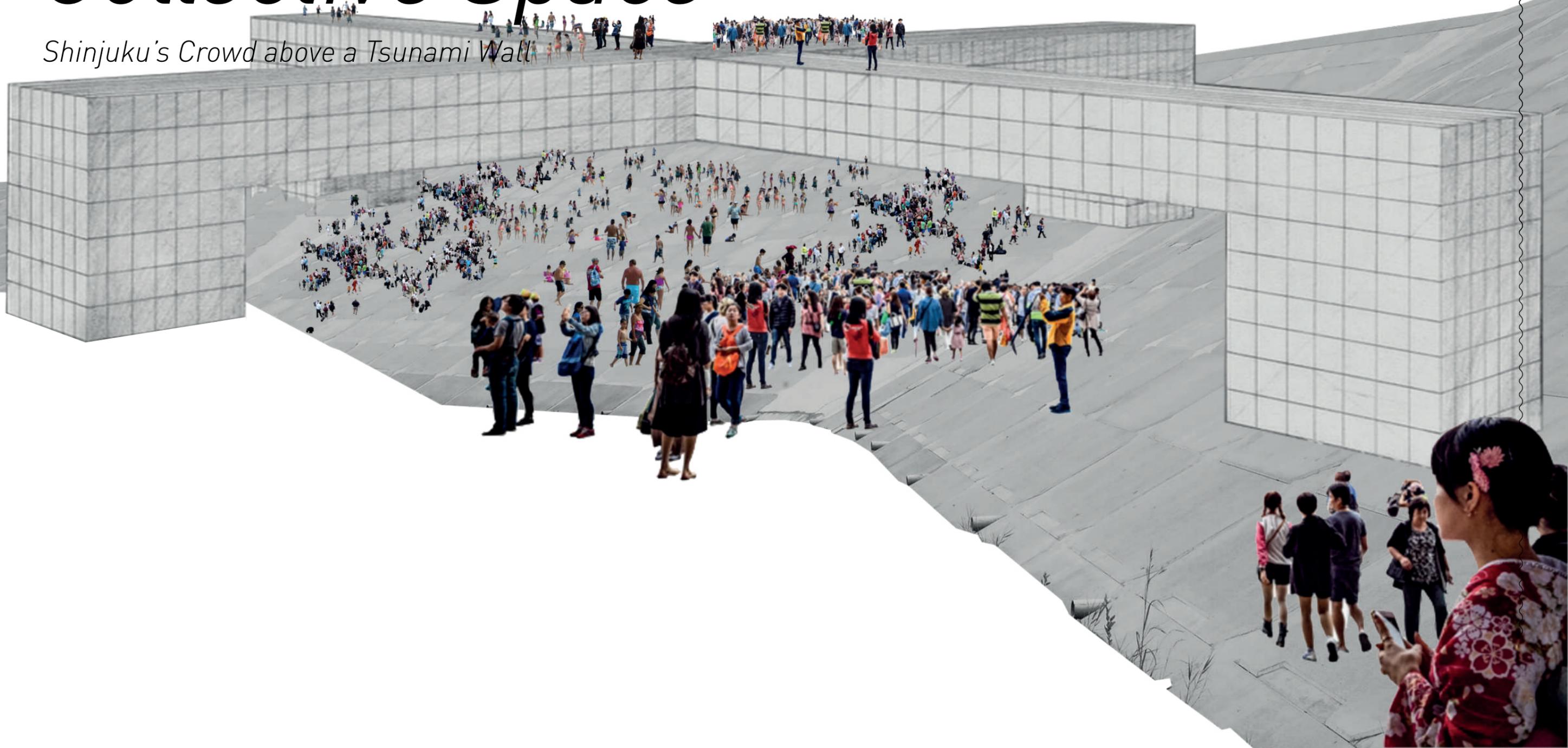
Hiroshi Ota and Kaori Ito picnic in Tokyo

12nd June 2019

pictures by Kaori Ito

Potentiality of Infrastructure as Collective Space

Shinjuku's Crowd above a Tsunami Wall



Infrastructure as a Collective Space

This thesis proposes a reflection on the metabolisation of infrastructures in the contemporary urban fabric. Each infrastructure corresponds to a fixed, peremptory action, a huge immersion of capital in the territory, modifying it in a way that is difficult to reverse. It tends to consist of a connection between points where, however, the interstitial space is often crossed in an indifferent way, going to redistribute and rebalance the values of the territory itself.

The restoration and recycling of infrastructure is a central issue in contemporary architecture. In this case, however, the angle at which the theme is approached is different: what happens when the infrastructures are necessary for the territory but their construction has gone to subvert the local equilibrium?

Thanks to the design action, architecture can be parasitically grafted onto large infrastructures, through flexible structures, variable in size and use, technically simple to create, designed with local materials and with the potential to be self-built.

An aerial photograph of a large group of people splashing and playing in a bright blue swimming pool. The water is splashing white foam, and people are scattered throughout the frame, some with their arms raised. The overall scene is one of active, joyful recreation.

Infrastructures as Spontaneous Public Space

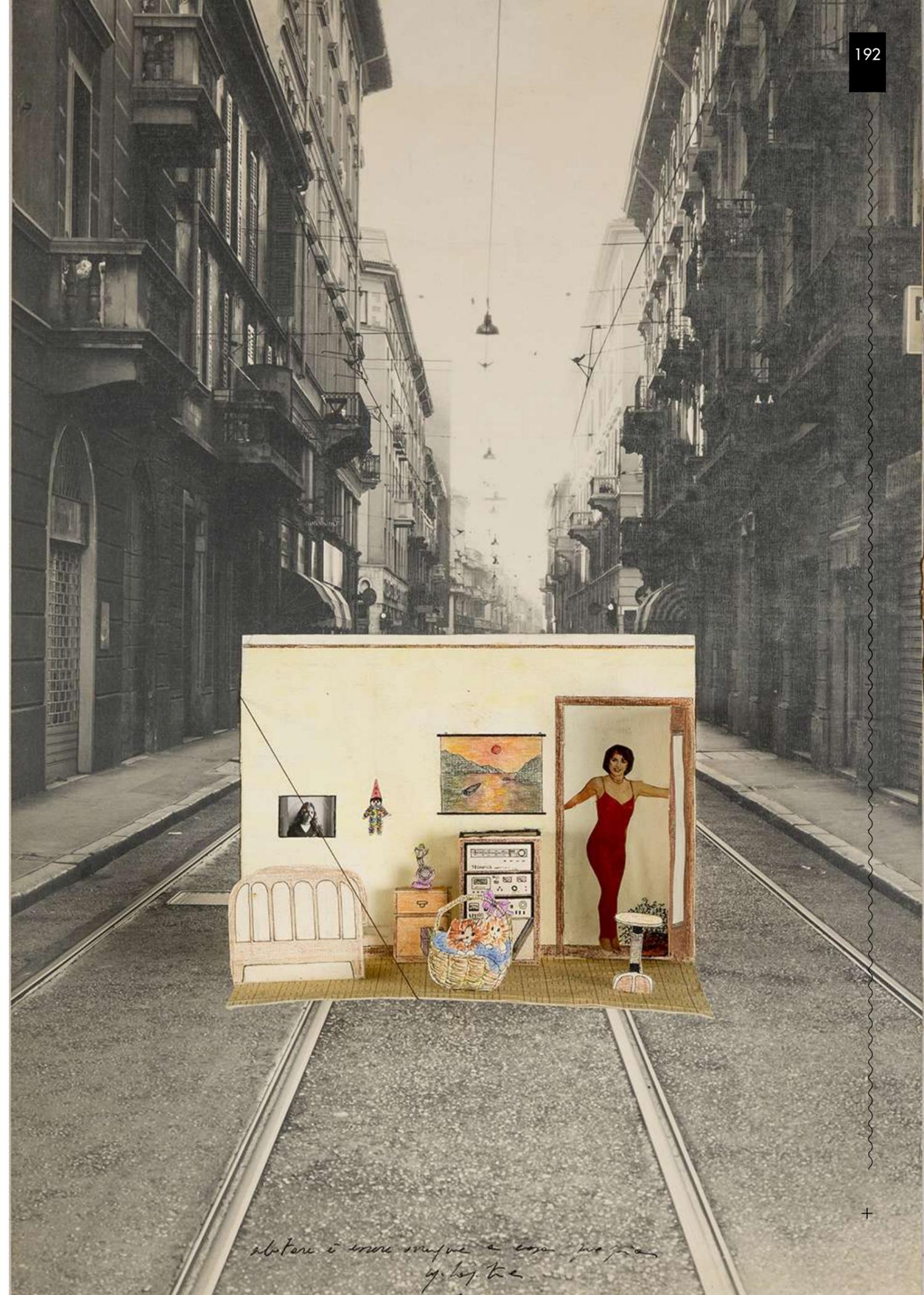
pictures by Katrin Korfmann



Living the City ("Abitare la Città") / 1980

Inside / Outside

Ugo La Pietra



*abitare è essere ovunque e essere proprio
 Ugo La Pietra*

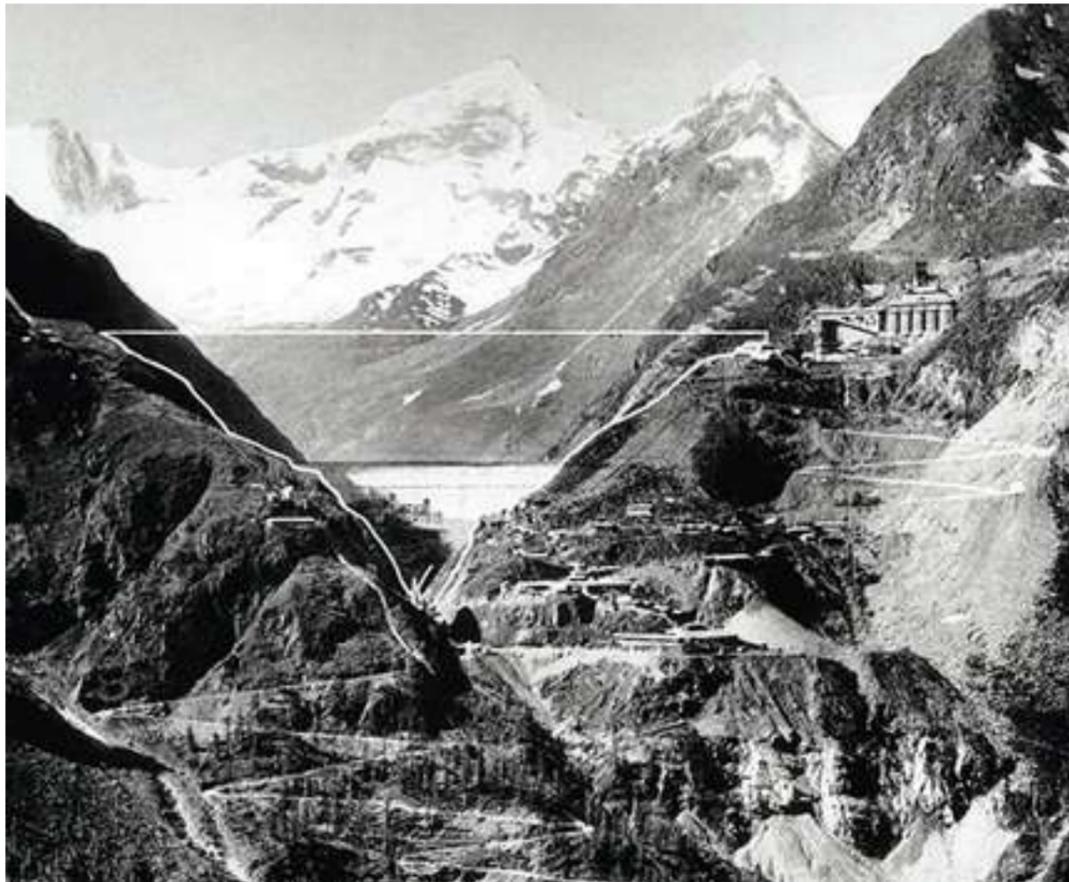


Living the City ("Abitare la Città") / 1980

Reappropriation of the City

Ugo La Pietra





Operation Beton / 1954/55

A Dam in the middle of Swiss Alps

Jean-Luc Godard



XX century's dualism

"There is an explicit and ostensive language through which the new conception of urban space expresses itself directly and specifically, it shows itself hic et nunc in some demonstrative examples destined to convince and to be imitated, and a more implicit language through which the same conception of space expresses itself through general and preformative statements destined to make the actions of individuals, groups and the whole society converge towards results that one would like to see of the same nature as those represented in the best demonstrative examples.

The twentieth century can be understood as a period during which these two languages, the first of architecture and the second of urbanism, continuously try to enter into resonance without ever understanding each other completely, becoming in some periods hostile to each other until they separate, one along the drift of self-referentiality and the other along that of the emptying of any specific content induced by absolute hetero-referentiality."

_ Bernardo Secchi

JAPANESE HIERARCHY OF SPACES

"The quadrangular, reticular cities (Los Angeles, for example) produce, it is said, a deep unease: they hurt in us a coenesthetic sense of the city, which requires that every urban space has a center to go from, to return from, a compact place to dream and in relation to which to direct and move away, in a word, invent. For many reasons (historical, economic, religious, military) the West has only too well understood this law: all its cities are concentric; but, in accordance with the very movement of Western metaphysics, for which every center is the seat of truth, the center of our cities is always full: a marked place, it is there that the values of civilization are gathered and condensed: spirituality (with churches), power (with offices), money (with banks), goods (with department stores), the word (with "agora": coffee and walks).

Going to the centre means meeting social truth, participating in the superb fullness of reality.

The city I am talking about (Tokyo) presents this precious paradox: it has a centre, but this centre is empty. The whole city revolves around a place that is both forbidden and indifferent, a home masked by vegetation, defended by ditches of water, inhabited by an emperor who is never seen. Every day, with their rapid, energetic gait, sent like the trajectory of a bullet, taxis avoid this circle whose low top, visible form of the invisible, hides the sacred "nothing".

One of the most powerful cities in the modern world is therefore built around an opaque ring of walls, water, roofs and trees, whose centre itself is nothing more than an evaporated idea, which exists not to radiate some power but to offer the entire urban movement the support of its central void, forcing the circulation to a

perpetual deviation. In this way, as they say, the imaginary unfolds circularly, through courses and recourses, around an empty subject."

— Roland Barthes, *The empire of signs*.

The Japanese society can be really controversial, complicated to perceive.

In other words, it can also be seen from an analysis of the spaces that make up the city.

In fact, if on the one hand the Japanese society has a shameless spatial composition and an architecture and building construction without any conceptual boundaries, on the other hand it is a very structured society, where everything, actions, objects, are carefully designed and in the right place in the right moment.²⁵

This often creates strong contrasts in a dense and saturated urban weaving, which apparently does not give freedom to uncertainty and to the generation of spontaneous spaces and uses.

In addition, the strong infrastructure of the urban territory and has not meant that the density built is very high and that the city attests as "full". If, as Barthes underlined, the Japanese metropolis is structured starting from an "empty", almost evanescent centre, its development is very dense, almost saturated. It is, however, the infrastructures themselves that represent a potential spontaneous redesign or reuse of their spaces in this densely built urban network.²⁶

Actually, in Japanese cities there are spaces, buildings, structures that have lost their original function and purpose, for which they were designed, and therefore lend themselves to become works of art, white canvas for the spontaneous expression of the community

In other situations, moreover, the flexibility of the urban fabric is given by the presence of infrastructures and buildings performing multiple duties to fit within the surroundings.²⁷

A photographic analysis by Marco Barbieri, "*Everything In Its Right Place*", shows a careful selection of the reality of Japanese urban spaces, with an emphasis on their controversial aspect and their dual essence.

Everything In Its Right Place

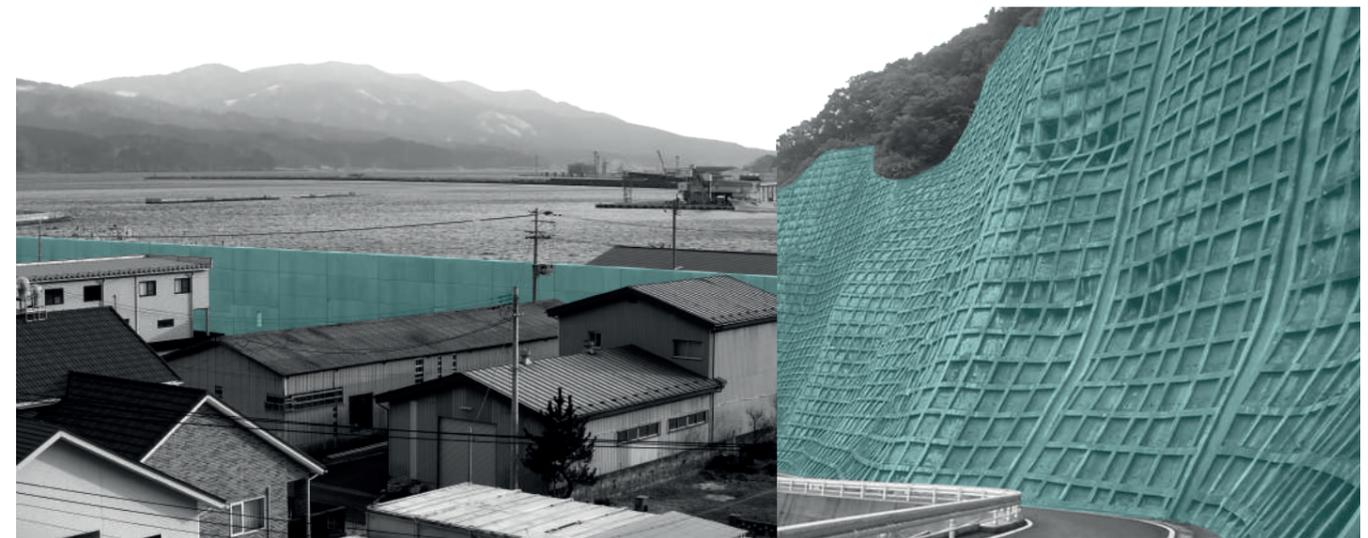
pictures by Marco Barbieri











#defending infrastructure presence

In this context, the greatest imposition on the landscape is the protective infrastructure, designed in order to defend the Japanese territory from the destructive force of nature, tsunamis, typhoons, earthquakes, landslides, floods, volcanoes that continuously threaten its safety.

A vast and widespread infrastructure network aimed at protecting cities has created an involuntary contemporary Japanese landscape, a continuous monument.

#no hybridation forms with defending infrastructures

What if the infrastructure becomes an important driver for urban changes?

It can be seen as an activating and engaging element of urban dynamics, in continuum with the city's soil, as a support matrix for practices and collective uses, stimulated by the inclusion of micro architectural devices, unveiling a potential heritage.

What if the infrastructure is seen as "continuous monument"?

Infrastructure Reportage

pictures by Micheal Hardy





_ tsunami defending wall 1



_ tsunami defending wall 2



_ river containing wall



_ landslide dam



_ retaining wall

pictures by Oote Boe



_ breakwater dam modules

Misperseption of the Landscape



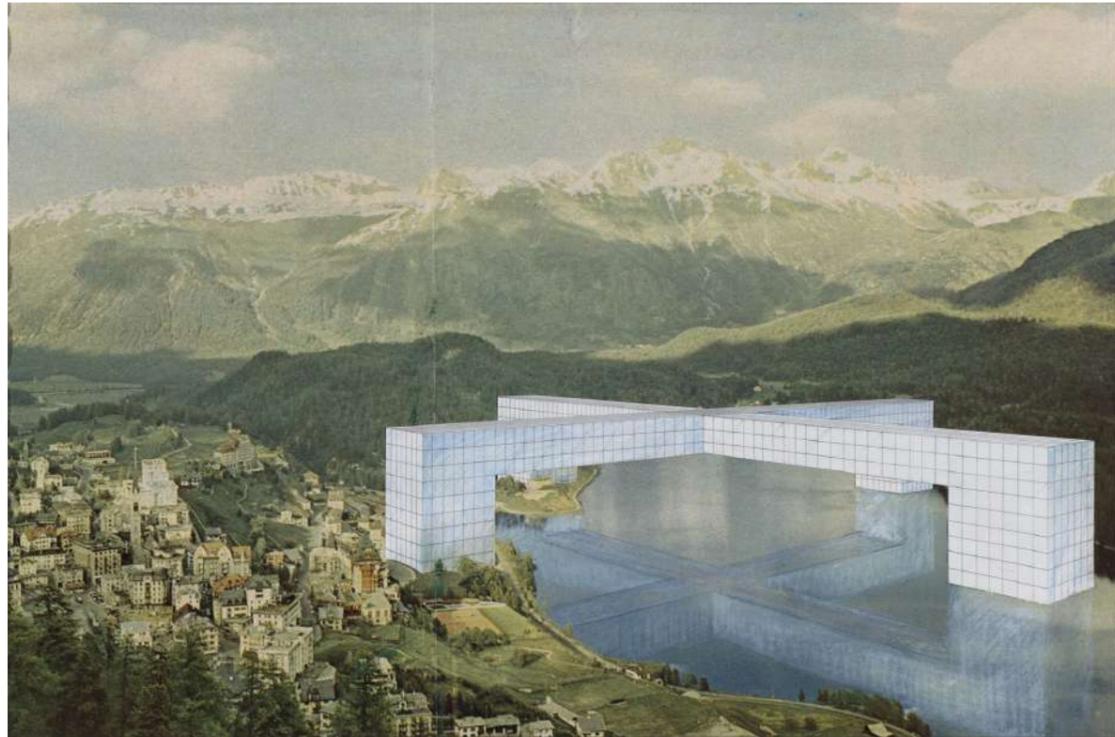
Infrastructure as a Continuous Monument

During the second half of the 20th century, there has been a substantial gap between the eastern and western sides of the world. In the first case, engineering takes over architecture for a long time, with a particular focus on hybrid projects between infrastructure and architecture, while in the second case, the engineering approach is seen only in a dystopian key through the work of some avant-gardes.

Therefore the violent and massive infrastructure in the Japanese territory during the twentieth century has created an unusual landscape, unique in its kind, where nature is pervaded by the infrastructure, capillary and stratified, and where cities and monuments are scattered points in a system held together by the transport network itself.

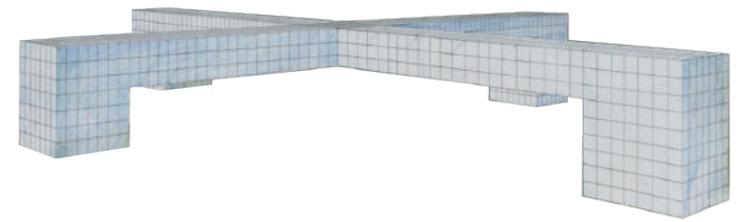
The Japanese infrastructure is a continuous monument, able to dominate and define the landscape, the consequence of Metabolism, which has firmly believed in its dominant role and has put it before the engineering infrastructure architecture.

In this context the infrastructure has gained an aesthetic value.



_ landscape

The Continuous Monument / Superstudio / St. Moritz



_ infrastructure



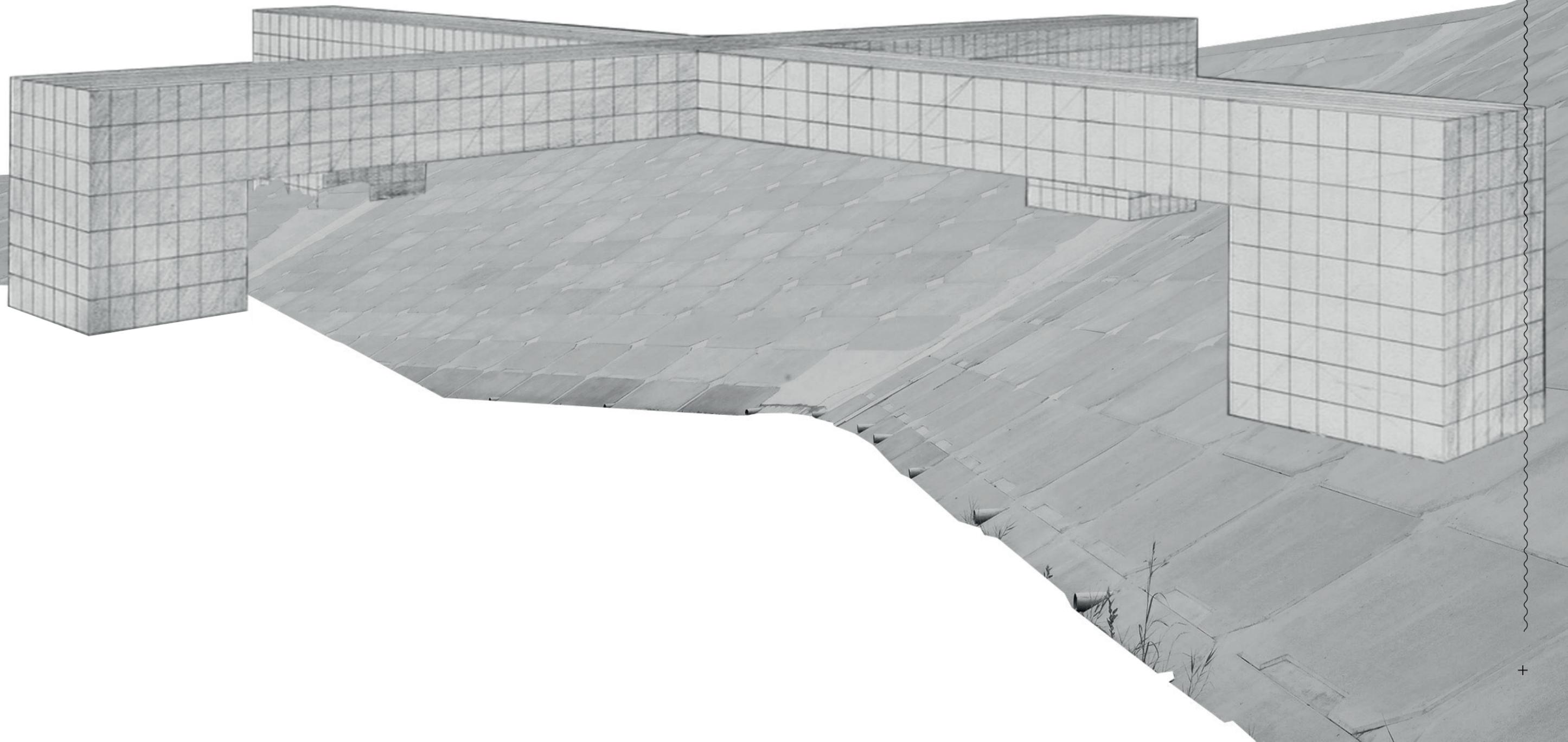
_ landscape

Tsunami Wall / Micheal Hardy / Iwate



_ infrastructure

Infrastructure as a Continuous Monument



A CONTINUOUS MONUMENT

In the aftermath of the Second World War, exponential economic growth and technological development increasingly increased the importance and weight of engineering in the everyday lives of "first world" countries.

Engineering contrasts with architecture in its approach to the landscape, infrastructure and the very dynamics of urban planning in cities. The heated cultural debate saw the birth of avant-gardes and collectives such as Superstudio and Archizoom in Italy.⁵ These young intellectuals question the future of urban space, leading to the birth of two respective utopias, the "Continuous Monument" and the "No Stop City". In both approaches, however, the engineering prevalence in the field of architectural design is denied and its being out of scale and unrealizable is emphasized.⁶

What happens in Japan is diametrically opposed. The Metabolist movement, in fact, verifies the effective engineering supremacy in the control of the territory, of the infrastructures towards an absolute contamination of the architecture with the engineering, in the first examples of hybrids through the synergy with the infrastructure and the digital technologies.

JAPANESE REALITY

One of the first projects in this regard is that for Kenzo Tange's Tokyo Bay (1960). This proposal turns out to be the *casus belli* for the drafting of the manifesto of Metabolism. Tange himself, in fact, gathered in Tokyo for the World Design Conference: Kionori Kikutake, Noriaki Kurokawa, Masato Ota, Fumihiko Maki and Noboru Kawazoe.⁷

"Our constructive age will be the age of high metabolism. Order is born from chaos, and chaos from order. Extinction is

*the same as creation. We hope to create something which, even in destruction will cause subsequent new creation. This something must be found in the form of the cities we were going to make- cities constantly undergoing the process of metabolism."*⁸

Metabolism comes from the biological term meaning "continuous biological revival of the old cells with new ones, since they perceived the city as an organic whole"⁹ connected to the Buddhist concept of reincarnation and imperfection and continuous mutation of nature, recalling the structuring of the spinal nervous system or the agglomeration of cellular elements. The metabolism buildings are designed with the intent of achieve an unlimitedly grow matching the needs of the growing society, shaped over time by contrasting sociodynamic forces, in a new architecture concept, strongly contaminated by engineering.¹⁰

*"In the architecture of the age of the machine expressed function, the architecture of the age of life expresses meaning. The plurality of life is the plurality of genes. Differences are precisely the proof of life's existence. And it is these differences which create meaning."*¹¹

In this new architectural concept, in fact, the use of technology becomes central, looking forward a stronger connection with engineering.¹² On the one hand to achieve innovative structural and morphological solutions, on the other to make the lives of the inhabitants as avant-garde as possible, every residential or public building designed by the metabolists is equipped with the first home automation systems and the infrastructure has the first technological and video surveillance systems, real "cyborgs" halfway between architecture and robotics.¹³

One of the utopian concepts behind Metabolism was to entrust the production chain, maintenance, management and distribution of architecture to digital systems, managing to unify the phases of design, construction and housing.¹⁴

Metabolist provocations, however, remain so, remaining mostly on paper, with the exception of some projects by Tange and the Nakagin Capsule Tower by Kurokawa, the group's manifesto building. The conceptual limit of the latter is precisely the fact that it has never undergone modifications and rearrangements since its construction (1972), denying its extreme flexibility and the possibility of evolution over time, which are fundamental in metabolist ideology.¹⁵

What is crucial is the central and predominant role of the engineering approach compared to the purely architectural one, which from the 1960s will develop and remain, until today, one of the central themes of architecture and infrastructure in Japan.

These great and pervasive infrastructural network, even though it has a pre-eminent role in the creation and development of contemporary society, often remains unnoticed, with an almost indifferent attitude that leads the everyday life of cities to ignore them, leaving them as a backdrop. Often the result of laws, parameters, generic protocols that do not take into account local specifications and possible environmental consequences. Omnipresent and anonymous, it has been always perceived as common and obvious in the contemporary urban landscape.

Infrastructure, in fact, could be considered an underlying urban logic that perpetuates uncontrolled, independent production and consumption conventions.

But the role of the infrastructure system must be extended, recalculated, renegotiated from the beginning, as a technical element but also of strong urban, social, architectural, landscape, nerve centre value not only for the achievement of resilient forms of development, but above all as a right to a sustainable form of life.

By highlighting and revealing these characteristics, the infrastructure gains an economic, social and political role, but its civic and aesthetic terms also remain imperative, as a place for the community, if they really will be outlined as "the cathedrals of our times", a continuous and contemporary monument.

"Should we ever take it upon ourselves to ask what infrastructure can really do, we would have to recognise it, if not desire it, as something potentially more than just a provider of those taken-for-granted services upon which we depend. Perhaps then we would be better positioned to fathom how to reframe and reconfigure infrastructure as a common project to serve humanity as a whole. For this ultimately what is at stake.

To deploy and an expanded infrastructural logic more proactively and put it to work as public work, however, would mean that infrastructure, by definition and design, would have to go beyond its current techno-logical man-date, usually specified in particular problem-solving terms alone. Put directly, what else can infrastructure do? Insofar as this question bears on how to harness as-of-yet untapped agencies of what remains in large part a mere background substrate, and given the urgency of tackling those pressing predicaments that are becoming increasingly collective by default, then the technical mandate of solving problems will have to be augmented with more inclusive political, economical, social, environmental, and even aesthetic responsibilities. But before this can happen, it is incumbent upon us to open up new channels for cooperation and to engender a shared desire for a common project of world-making rather than one of world-draining, if infrastructure is to truly take command."

*_ Marc Angéilil and Cary Siress, *Infrastructure Space*, 2017.*



The Choice of the Study Cases

Why these villages among many other Japanese realities?

They are functional to the demonstration of the fact that, in certain circumstances, the engineering artifacts can be transformed into design opportunities in a historical period in which the relationship between anthropic and natural has profoundly changed.

Tenno is located halfway between Hiroshima and Kure, a short distance (less than 15 km) from both.³² These two urban realities, during the twentieth century, have expanded dramatically, first for the growth of the military industry, then, after the Second World War, with the port and merchant business. This process led to a considerable influx of population, infrastructure and services, which eventually involved the same Tenno.³³

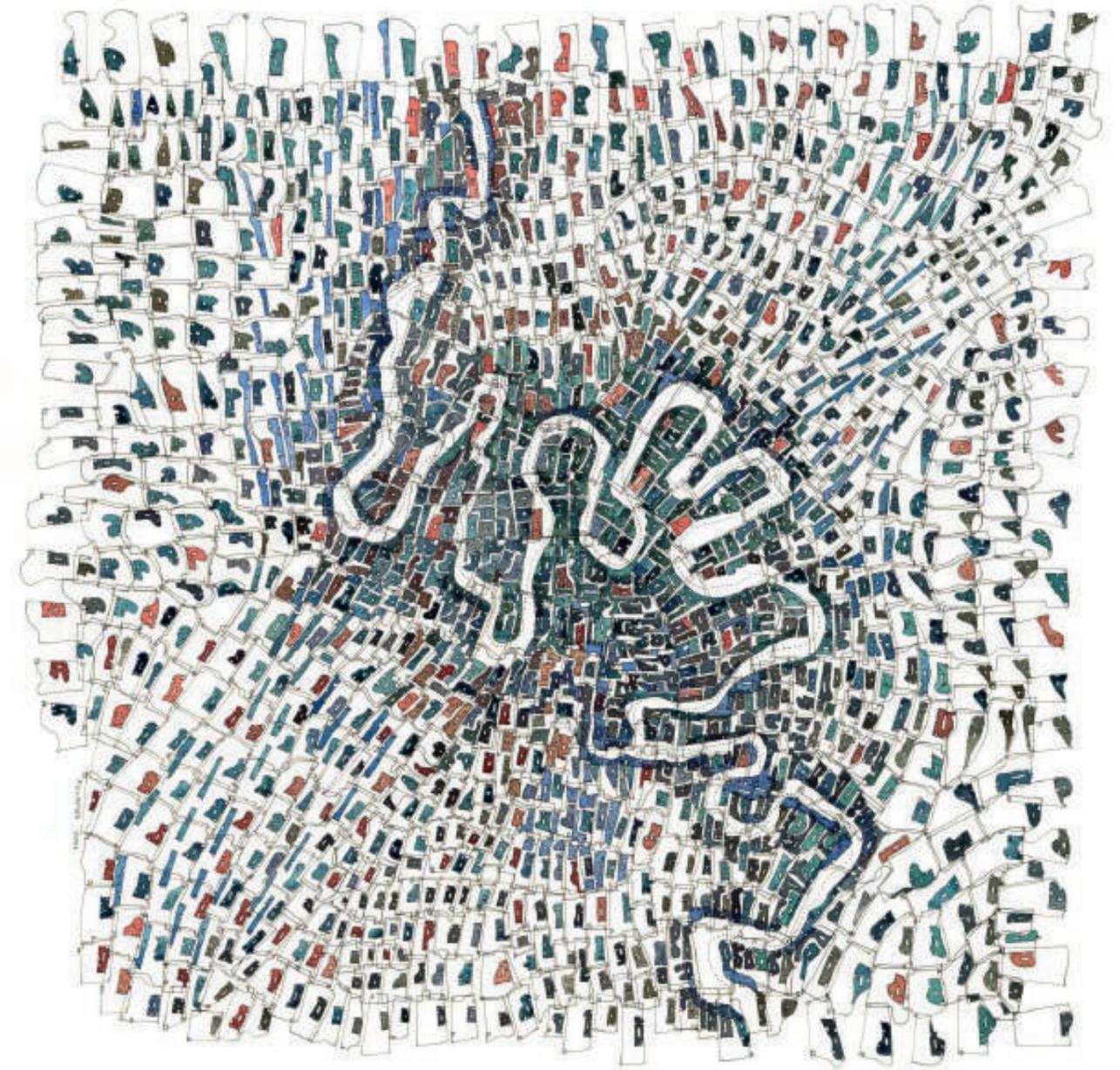
In Japan, as in most industrialized countries, we have witnessed a process that has progressively made smaller towns from independent realities to realities dependent on large urban areas, around which they gravitate for utilities, services, employment, mobility.³⁴ Japan, in particular, has a rate of urbanization of over 90%, one of the highest in the world, catalyzing services within medium to large urban areas and leading to a progressive depopulation and abandonment of the countryside.³⁵

Through interviews on the spot, with leaders of the municipality but also of the local community, it emerged a strong need for attention and study of a potential reality but, at the moment, unexpressed, vacant, extinguished in its dependence on other urban fulcrums that do not make life in Tenno attractive and comfortable.

With some differences, all these villages, through their location, history, infrastructure and space make a potential example of a new vision and conception of the Japanese coastal village of the 21st century, where the exponential decrease in production is answered and solved via a careful design process, with the aim to achieve a renewed independence of small realities.

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Fabrice Clapiès. *“Ville sur papier et autres conséquences figuratives”*. 2001

JAPAN

Otaru
121.655 inhabitants

Sado
55.655 inhabitants

Futaba
12.655 inhabitants

Okuma
18.655 inhabitants

Tenno
28.235 inhabitants

Onomichi
128.655 inhabitants

Tokyo

Hiroshima

Onomichi

Tenno

Kure

Morphology and Population

Case Studies



Case Studies

As pointed out above, Tenno and the entire hinterland of the city of Kure represent the archetype of the small to medium sized town centre of the Japanese coasts.

However, in order to have a situational spectrum as varied and complete as possible, several comparable cases have been taken into consideration, spread throughout the national territory, from north to south, from east to west.

What do these diverse locations have and have not in common?

Six urban coastal realities developed throughout the Japanese territory are taken under analysis, with the aim of giving an overview of cases as complete and exhaustive as possible, with different climatic, landscape, historical, economic and productive situations.

The common denominator of all the case studies remains the strong relationship with the sea and the infrastructure, more or less metabolized or solved to date.

CASES ANALYSIS

The starting point, the lowest common denominator of all the cases taken into consideration, is their strong relationship with water, in particular the sea, which has marked their identity development and, often, also environmental problems. Moreover, all the cases present a current or past (and solved) situation of infrastructural abandonment. Finally, the small size of the inhabited centres is also aggregating, ranging from 20,000 to 120,000 inhabitants.

The characteristics that, instead, differentiate them are:

- _ the geographical location
- _ the climate
- _ the impact of natural disasters on the territory
- _ the balance in the relationship with the natural element
- _ the balance in the relationship with the infrastructure

The heterogeneity of the cases, combined with their agglutinative characteristics, makes the situation picture as rich and complete as possible, touching different realities, different types of infrastructure and different ways in which the urban fabric metabolizes or ignores the strong presence of the infrastructure within it.¹

Let's move on from a case-by-case analysis.

ONOMICHI

"Anyway, this place is meant for the younger generation."

_ Shukichi, *Tokyo Story*, 1953.

This is a quote from the film *Tokyo Story*, which tells the story of an elderly couple who go from Onomichi to Tokyo to visit their children. The film revolves around the contrast between the behavior of the main

characters and that of their children, resulting in a comparison between the differences that arise between Onomichi and Tokyo.

Located in Hiroshima prefecture, a few kilometers from Tenno, overlooking the Seto Inland Sea (瀬戸内海 Seto Naikai). This inland stretch of sea, the waterway that connects the Pacific Ocean to the Sea of Japan, has unique morphological, climatic and cultural characteristics in the Japanese landscape.² Its central position in maritime, first, and rail traffic, then, combined with the safety of its waters have made it a place of commercial flourishing and the main economic center of Japan until the transfer of the capital to Tokyo.³

Called "The city of 100 temples" (now around 30), Onomichi, thanks to its strategic position, has been one of the main port and shipbuilding centers of western Japan. The port was built in 1168, and in the following 700 years it has served as a shipping, collection and partly production centre for rice and salt, with international connections and hegemony over the Seto Inland Sea.⁴

Located in the heart of this stretch of sea, it has developed over the centuries on terraces, from a first inhabited center on the coast to reach the top of the hills behind the beginning of Edo Era, dividing into three main areas: the dense city on the coast, the "slope city" with most of the temple complexes in the ring road upstream and the rice fields on the top portion.

Following the industrial revolution that affected Japan at the end of the 19th century, Onomichi lost its central position and commercial and logistical importance, mainly due to the sudden expansion of Hiroshima and Osaka, located on the

edge of the Seto Naikai, and to the new technologies of shipbuilding and naval trade, no longer proportional to the small inner arm of the sea.⁵

In 1999, the northern and southern coasts of the sea were connected by the Shimana-mi Kaidōle bridge, connecting the prefecture of Hiroshima to the prefecture of Ehime. This has made Onomichi regain centrality in the local and national infrastructural system.⁶

Although geographically very close to Tenno, the substantial differences between Onomichi and Tenno are many:

_ Tenno was born as several villages developed on the course of two rivers to their mouth, which only in the twentieth century have united. Onomichi immediately developed as a single urban agglomeration, which then developed over the centuries.⁷

_ Because of the different history in the formation of the urban fabric, Tenno has been partly a fishing village but it has been defined as a port only in the last two centuries, while in the case of Onomichi the birth of the port corresponds to that of the city itself.

_ Tenno is in a tangential position to the infrastructure that runs the eastern part of the Gulf of Hiroshima, then in a peripheral position in the infrastructure system both local and national. Onomichi, on the other hand, is located at the crossroads of different infrastructural systems, both terrestrial and maritime.⁸

_ The location of the shrine in Tenno is isolated from the main urban development and on a hill overlooking the coast. In the case of Onomichi the shrines are incorporated into the very dense urban fabric of the city.⁹

SADO

Sado is located in the Prefecture of Niigata, precisely in the middle of the Sea of Japan, and it is the sixth largest island in Japan. In an isolated position with respect to the main Japanese urban development areas, the island is initially inhabited by fishing communities, attracted by the high level of fishing in the surrounding seas.¹⁰ Over time, however, the interest in the sea, especially from an economic and employment point of view, has diminished. Sado, in fact, experienced a sudden economic boom during the Edo period when gold was found in 1601 at Aikawa (相川).¹¹

As one of the most profitable sources for the Tokugawa shogunate, the mines were worked by exiled people, prisoners, criminals and workers in very precarious working conditions, so much so that the average duration of a worker was only a few months.¹² The high turnout for the development of the mining system has created a strong demographic increase, culminating in the post-war period. In 1989, with the closure of the mines, the economic decline of the island was indissolubly determined, which had difficulty in metabolizing the infrastructures present on its territory and which saw the population decrease up to a third in 2019 compared to the values of 1950.¹³

In the mean time, from a commercial point of view, when the Nishimawari naval route was opened in 1672, Sado Island became a main stop on this major naval route in the Sea of Japan, between the Kansai area (with Osaka, the main port and Kyoto, the old capital) and northern areas of the archipelago.¹⁴

The peculiar landscape condition, almost untouched, and geographical conformation, together with the important history,

make it a potentially attractive place for tourist experiences with a more rural and naturalistic quality.¹⁵

FUTABA AND OKUMA

Unlike the other cases analysed, Futaba and Okuma are two cities founded and born from the productive-industrial development of Japan after the industrial revolution.¹⁶

The first data on Okuma date back to 1888, when the villages of Ōno (大野村) and Kumamachi (熊町村) were inaugurated. In 1896, Ōno and Kumamachi together with the surrounding villages gave life to the current district of Futaba, and in 1954, the villages of Ōno and Kumamachi merged to form the current city of Ōkuma.¹⁷

The latter are located in a territory rich in mineral resources, in particular coal, as real workers' villages (inspired by the European example on the rise in the previous decades).¹⁸

If on the one hand, this condition brings a rapid development of these territories north of the capital completely rural and almost uninhabited until then, on the other hand fossilizes them in a proto-industrial condition that from the second post-war period manifests itself as anachronistic if inserted in the incredible national economic boom.¹⁹

For this reason, at the end of the 1950s, the prefecture began to promote the production of electricity as a means of alleviating the economic problems that are looming on the horizon due to the imminent closure of coal mines.²⁰

And it was in 1961 that the city councils of Futaba and Ōkuma voted unanimously to invite the Tokyo Electric Power Company to build a nuclear power plant on the border between the two cities.²¹

The flat conformation of the territory, with seismic activity reduced to the Japanese average, the location on the coast and near several watercourses together with the proximity to Tokyo and Sendai make it a potentially optimal site.

In September 1967, construction began on the first units of the plant, which were fully operational in March 1979.²²

Futaba and Ōkuma have become internationally renowned for one of the worst disasters in Japanese history. On March 11, 2011, the Tōhoku earthquake occurred, a 9.0 - 9.1 magnitude earthquake, the most powerful earthquake ever recorded in Japan, and the fourth most powerful earthquake in the world since modern record-keeping began in 1900.²³ The earthquake and the subsequent tsunami, with waves up to 14 meters high, have caused serious damage to the entire prefecture of Fukushima, especially in coastal and pre-coastal areas.²⁴ The highlight was the collapse, flooding and loss of radioactive material at the Fukushima Daiichi plant.

Following the disaster and the emergency situation, the surrounding areas have been evacuated and, to date, the architectural debate is questioning the future of towns born in almost exclusive support of the nuclear power plant at a time when Japan is on the verge of a gradual abandonment of nuclear production itself. In the case of urban centres born with a productive function, when these economic and labour infrastructures are no longer in place, fate is uncertain and fragile, directly dependent on the re-establishment of local equilibrium. In fact, the metabolisation of infrastructures by the territory, the local government and the citizens is more urgent than ever in these cases.²⁵

OTARU

Otaru offers a peculiar example of how a city characterized by a purely port, commercial and productive past, following the crisis of all these sectors during the 1900s, has been able to re-function and reinvent itself becoming one of the most popular destinations in northern Japan.²⁶

Otaru is located in the middle of the bay of Ishikari, on the island of Hokkaido. The name "otaru" (小樽) literally means "river that crosses the sandy beach" and the history of this town is linked above all to its role as financial, commercial, industrial and port center of the island of Hokkaido.²⁷ Officially founded in 1865, it is connected by the first railway on the island to Sapporo, a governmental centre. In 1899 Otaru was established as a free port for trade with the USA and the UK, giving rise to a dizzying economic boom, which transformed the city from a fishing village to one of the eminent coastal centers of the entire nation, so as to earn the title of "Wall Street of Northern Japan".²⁸ This commercial opening, unusual in a Japan still very nationalist and closed to foreign influences, makes that the city is studded in the course of the XIX and XX century from commercial activities, buildings, uses, customs, international inhabitants. Otaru, in fact, differs from the typical plant of traditional Japanese cities, such as Kyoto and Nara, thanks to an exquisite mix of Japanese and Western influences.²⁹

After the Second World War, if Otaru became more and more a commercial city,³⁰ the main industry present in the metropolitan area, that of coal, goes into crisis. It gradually gave up its role as the economic centre of the island to the nearby Sapporo, which was experiencing a dizzying demographic and financial rise throughout the 20th century, becoming almost a dormitory city.³¹

In the 1960s, therefore, the port area was massively abandoned. Warehouses, industries, silos.

Nevertheless, the position of Otaru, on the coast but very close to the most famous mountains of Hokkaido, its history, its cultural, architectural and gastronomic tradition, make it progressively an international tourist destination. The former port areas became residences, centres for commercial, cultural and community activities, so much so as to make it the main tourist destination of Hokkaido in a few decades.³²

Otaru, therefore, following the complete reversal of its balance of identity as well as economic, has managed to go through a process of re-functionalisation, made of restoration of the urban fabric, investments, small projects injected into the territory that have allowed a progressive rebirth. A peculiar example of this is the buffer zone between the city and the sea, the system of canals and promenades, which has become the symbol of the city, once a place of collection and distribution of goods arriving in the port, now a famous tourist attraction, flanked by some of the buildings that symbolize the glorious past of Otaru.³³

TENNO

Tenno is located within a widespread communal area, a very frequent reality in Japan, due to the progressive depopulation of small and medium-sized towns. The area consists of a capital, Kure, from which it takes its name, and several smaller towns, such as Tenno, second in size and detached from the others, Yasuura, rural community on the hills behind, Aga, Ondo, Yoshiura and Kamagari, coastal agglomerations around Kure.³⁴

The history of Tenno is common to that of

many Japanese villages.³⁵

The first settlement to be found in the area dates back to the 15th century under the name of Oya, a village of fishermen and rice farmers located in the small plain at the mouth of the river.³⁶ Since the beginning of the 17th century (Genna Period) there has been a calculation and tracking of rice production in the villages of the area, which allows an indicative calculation of population and economic production. Next to Oya, in fact, there are several secondary villages, especially on the slopes of the hills and inland, aimed at the cultivation of rice, the main source of local production.³⁷

During the 19th century there was a gradual evolution of fishing towards the cultivation of oysters, which is now one of the main businesses in Hiroshima Bay. The geographical connotation of the area, particularly protected from currents, typhoons and tsunamis, makes it chosen as, initially, the main site of production of armaments and, later, also as the seat of the Japanese Navy.

At the beginning of the 20th century, in fact, Kure and Hiroshima considerably increased their size thanks to the expansion of the war industry. During the First World War we have the first strong impulse that is followed, with renewed vigour, by the Second World War and the Korean War. The atomic attack on Hiroshima in 1945, the prohibition imposed on Japan of possessing its own military force and the positioning on the national territory of numerous American military bases translate into a momentary arrest of the economic growth of the area.³⁸

The recovery took place towards the end of the 50's with the expansion of the shipbuilding industry and the reconstruction of the city of Hiroshima. In those years the agglomeration of villages was unified under the name of Tenno (1950) and later united to the city of Kure (1956). The name Tenno derives from Japanese mythology and is the title given to the first emperor in Japanese history, who is said to have been born in the village of Oya.³⁹

KURE CITY

KURE CITY

Kure, like Tenno, was born from the agglomeration of several villages in a plain at the mouth of two rivers. The main urban agglomeration is located on the coast, not particularly strategic from a commercial point of view, given its proximity and immediate rivalry with Onomichi, but protected behind by high mountains, on which large plantations of rice develop. Because of the morphological conformation of its territory and its position, it was chosen as a military and shipbuilding port (the second oldest in Japan) in 1899. The navy in this location protected from land attacks and in the middle of the Seto Inland Sea, sheltered from winds and tides, finds one of the main nationwide, the Kure Naval Arsenal. The Kure plain is divided into two distinct parts, the urban fabric to the north and south, divided on the one hand into camps, while the military port is located at the end of the cove, the most external.⁴⁰

During the course of 1900 the city expanded over the whole plain until it reached the hillsides, on the summit of which the ricefields still remain. The city is divided by an American-style grid plan, in which each lot is purchased by a private individual and built in a rather heterogeneous manner from a formal and stylistic point of view, creating an architectural mixture unusual in Japan. The expansion of both the city and its port is such as to impose itself as the main Japanese military port during the first of the Second World War.

This strategic prominence makes it one of the main targets of the bombing of western

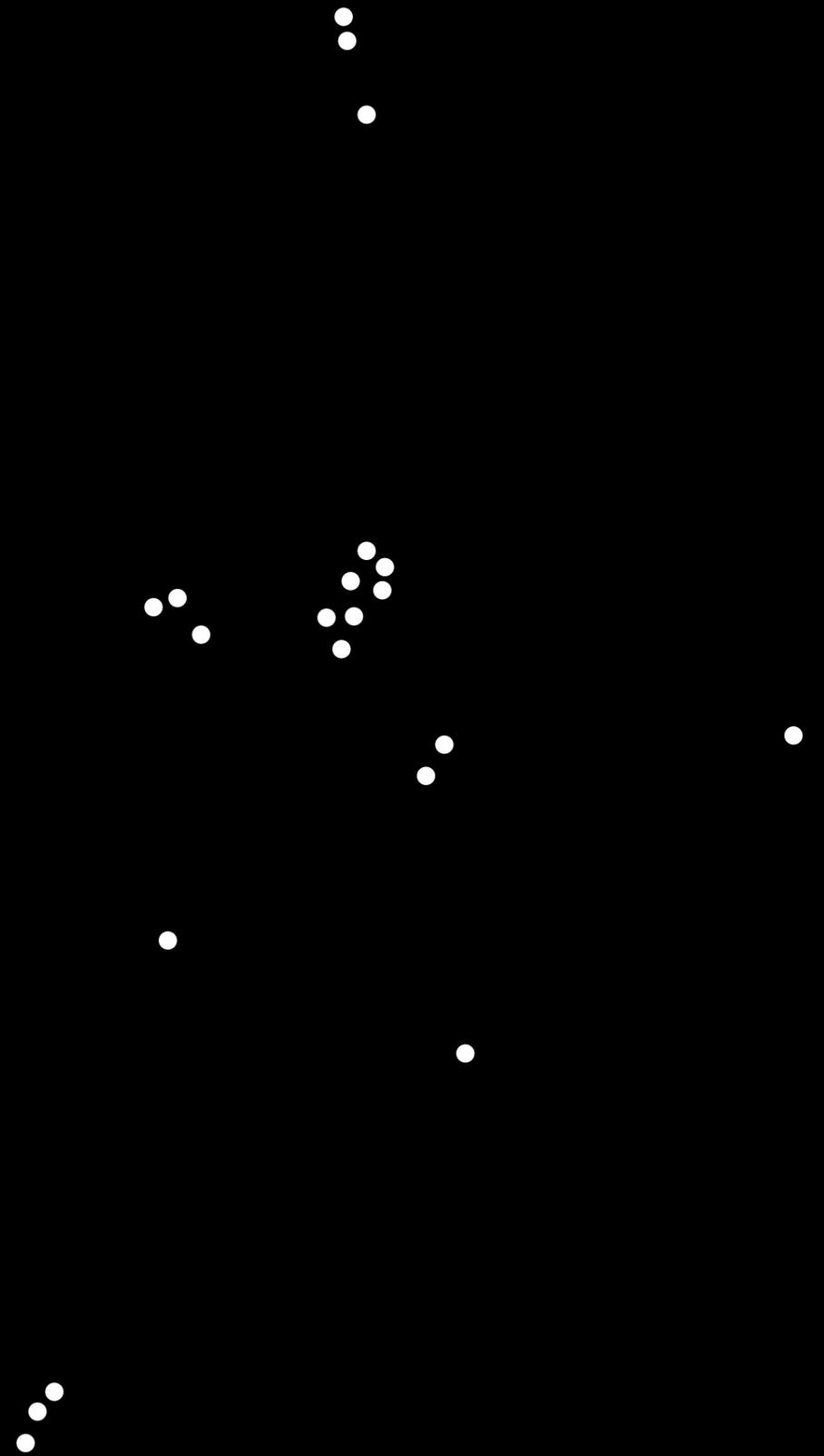
Japan, being repeatedly attacked in 1944 and 1945.⁴¹

In the 1950s, however, Japan's new political and military situation, technological changes in shipbuilding, the renewed size of ships, the tracking of more optimal shipping routes, the bombing suffered, combined with the rapid reconstruction and renewed rise of nearby Hiroshima, meant that Kure became primarily a support for this great city and was redesigned as a port for heavy industry, going to reclaim land from the sea to accommodate the large steel production industries. This generates the design of a vast coastal infrastructure and, at the same time, the interconnection between Kure, Hiroshima and Higashi-Hiroshima, a new internal metropolitan area.⁴²

Since the Second World War, therefore, Kure has been affected by a progressive deflection of the population, despite the union of neighboring municipalities (including Tenno, in 1956) in the creation of the municipal area widespread. The city today, with a population of about 228,000 inhabitants, presents the characteristics and therefore the main problems of medium-sized urban centers in Japan (as in most industrialized countries): dependence on large neighboring urban centers, loss of identity, lack of exceptional services, abandonment of the urban fabric, lack of interest and national funding, lack of public transport, aging of the average age of the population.⁴³

There are many questions that the city is asking itself in the 21st century, all concerning the future of a reality that is less and less attractive and more and more poised in its fragile equilibrium.

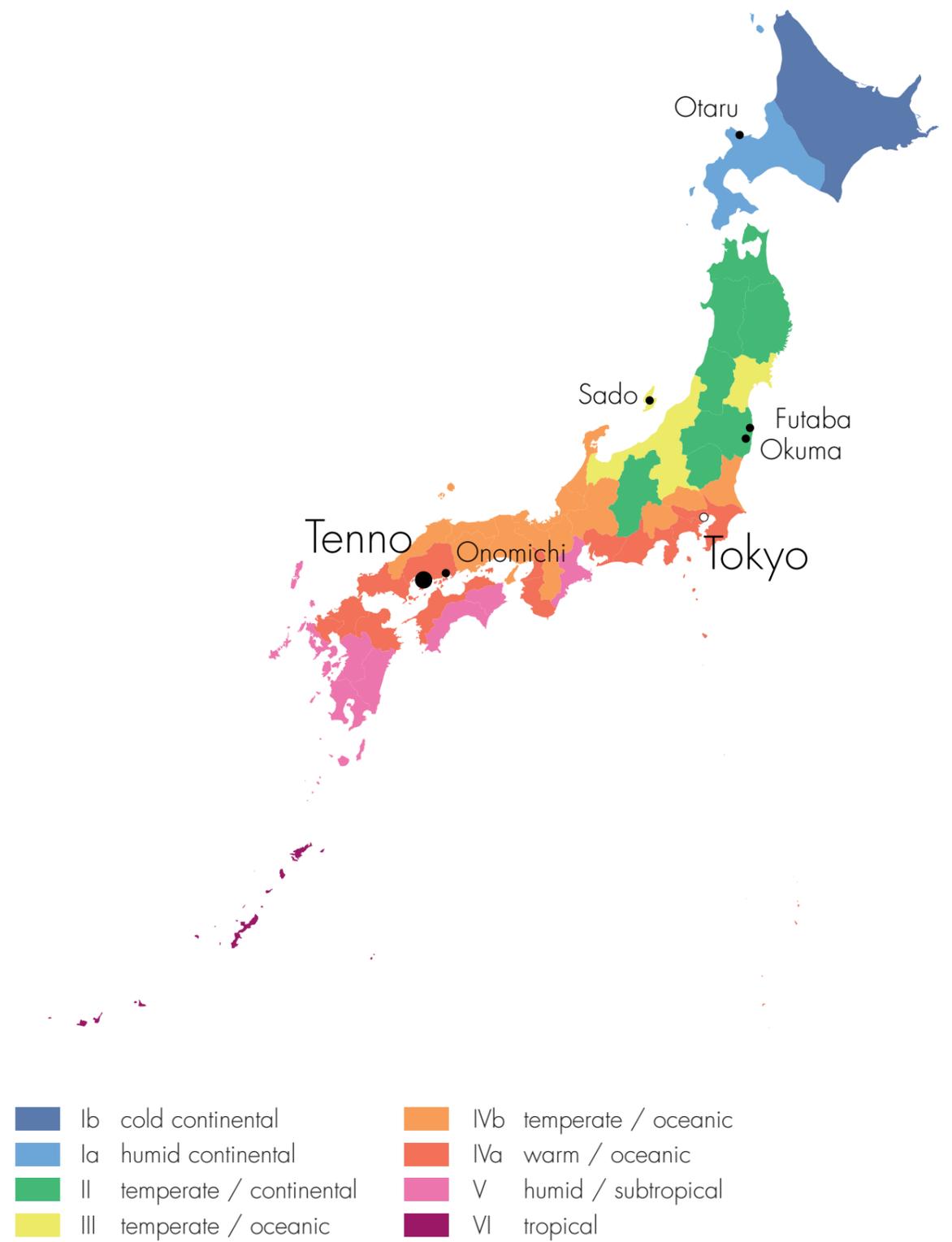
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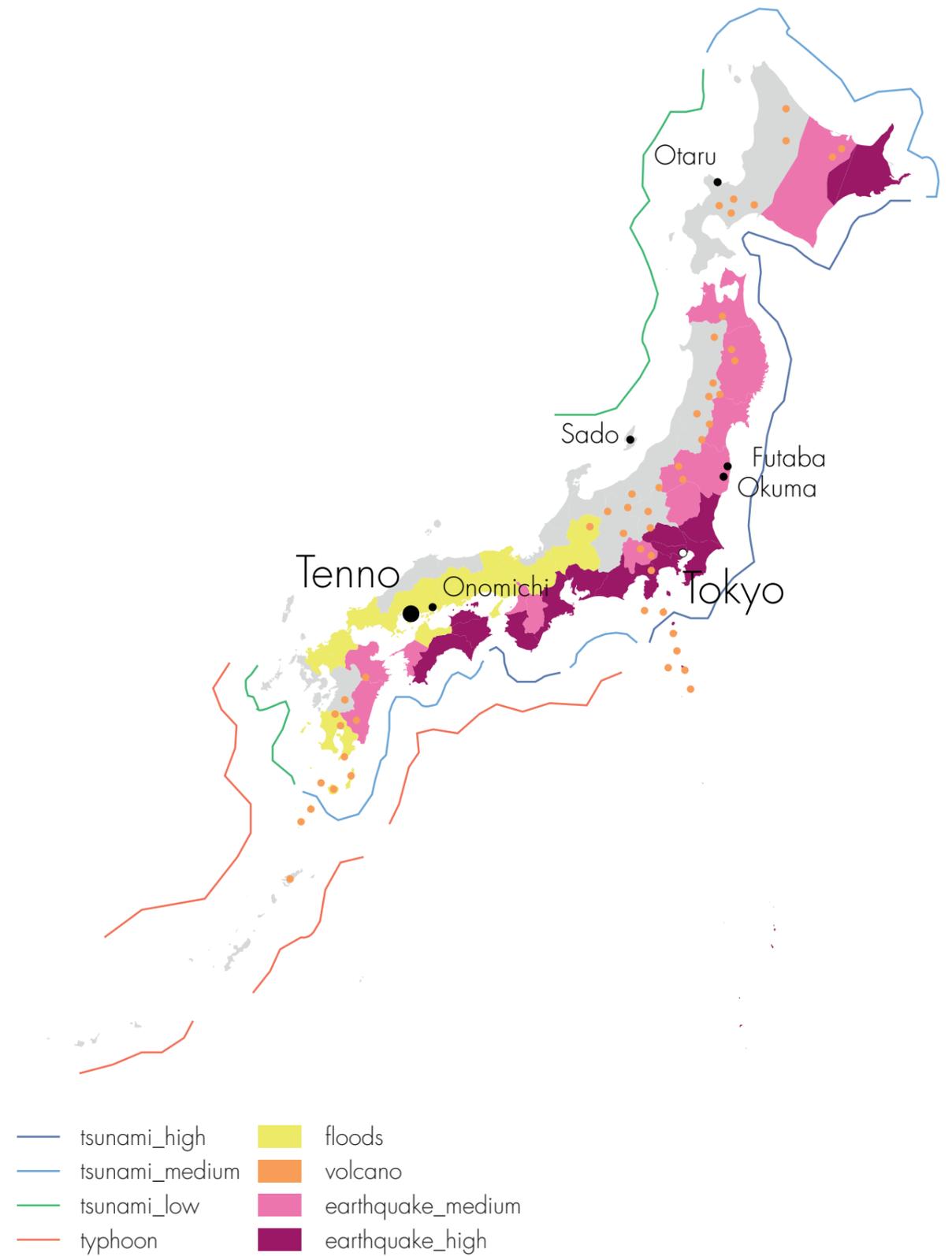


Climate Regions

Case Studies

Tenno is located in the IV climate region, having a warm oceanic climate, with hot summer and warm winter. The mountains in the Chūgoku and Shikoku regions block the seasonal winds and bring mild climate and an high percentage of sunny days.





Natural Disasters

Case Studies

The area of Tenno, unlike western and southern Japan, is not affected by earthquakes, tsunamis and has no volcanoes. The area is, however, subject to heavy rains that cause frequent floods and landslides.

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- 1887-1941*. Annapolis, MD: First Naval Institute Press. p. 159.
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Tenno: Origin of a Name

Tenno, ("heavenly emperor" in Japanese), the title of Japan's chief of state, bestowed posthumously together with the reign name chosen by the emperor. The term was first used at the beginning of the Nara period (710–784) as a translation of the Chinese t'ien-huang, or "heavenly emperor", and replaced the older title of mikado, or "imperial gate".¹

The imperial line was founded around the 660 BC by the legendary emperor Jimmu, a direct descendant of the sun goddess Amaterasu, probably born in the Hiroshima area. It is precisely to him that the nickname Tenno is affiliated for the first time. The imperial institution survived for 2,000 years despite the removal of individual emperors and murders resulting from court intrigues.

In 1868 the leaders of the Meiji Restoration claimed the reestablishment of direct imperial rule and built a centralized nation-state with the capital in Tokyo and the emperor as the symbol of national unity, until then very fragmented and without a unity of identity. Therefore loyalty to the emperor was made a sacred duty and a patriotic obligation, and he had been invested with an aura of sacred inviolability.

The defeat of Japan in World War II dealt a blow to the emperor cult and the ancient myths of divine origin.²

Luca Lagorio. *“Shield of shells: protection for the cultivation of oysters”*. 2019



Tenno Photo- graphic Analysis

pictures by Luca Lagorio





_ river



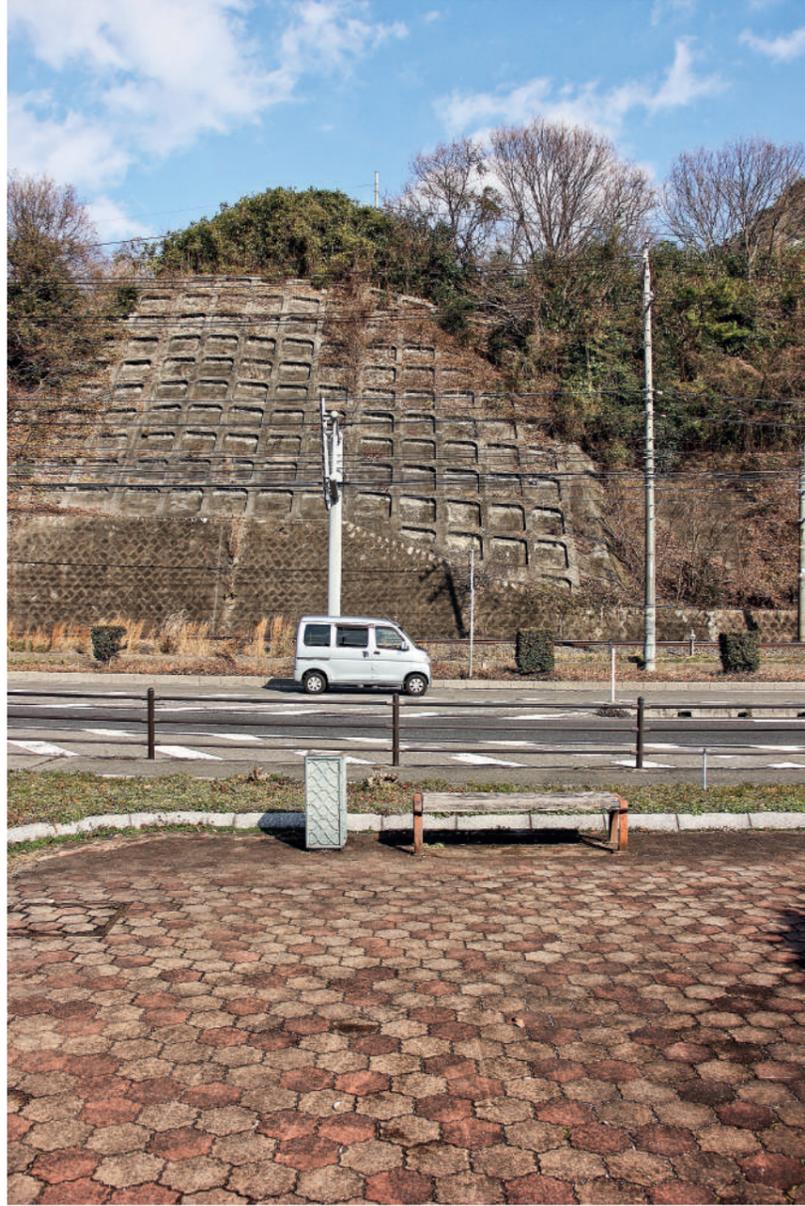
_ dereliction



_ sport



_ breaking waves wall



_ retaining wall



_ lifted highway

Micheal Hardy, in his journey through Japan, was shocked by the ominous grey walls that line the coast.

"What I'm interested in as a photographer is how they've totally shut out the views of the sea. I'm walking in the sea coast area, I want to take a photo of the coast, but I can't see it."

Many local residents make their living in either fishing or tourism; now, both industries are under threat from the walls.

Who to blame? The impetus for the massive infrastructure project on a powerful central government unresponsive to local concerns, as well as the giant Japanese construction companies who benefit from massive government contracts.

Most of the Japanese coastal cities, following the third industrial revolution, have seen the infrastructure interpose between citizens and nature, denying the traditional local identity.

Misperception of the Landscape

Infrastructure as a Barrier



The Evolution of the City

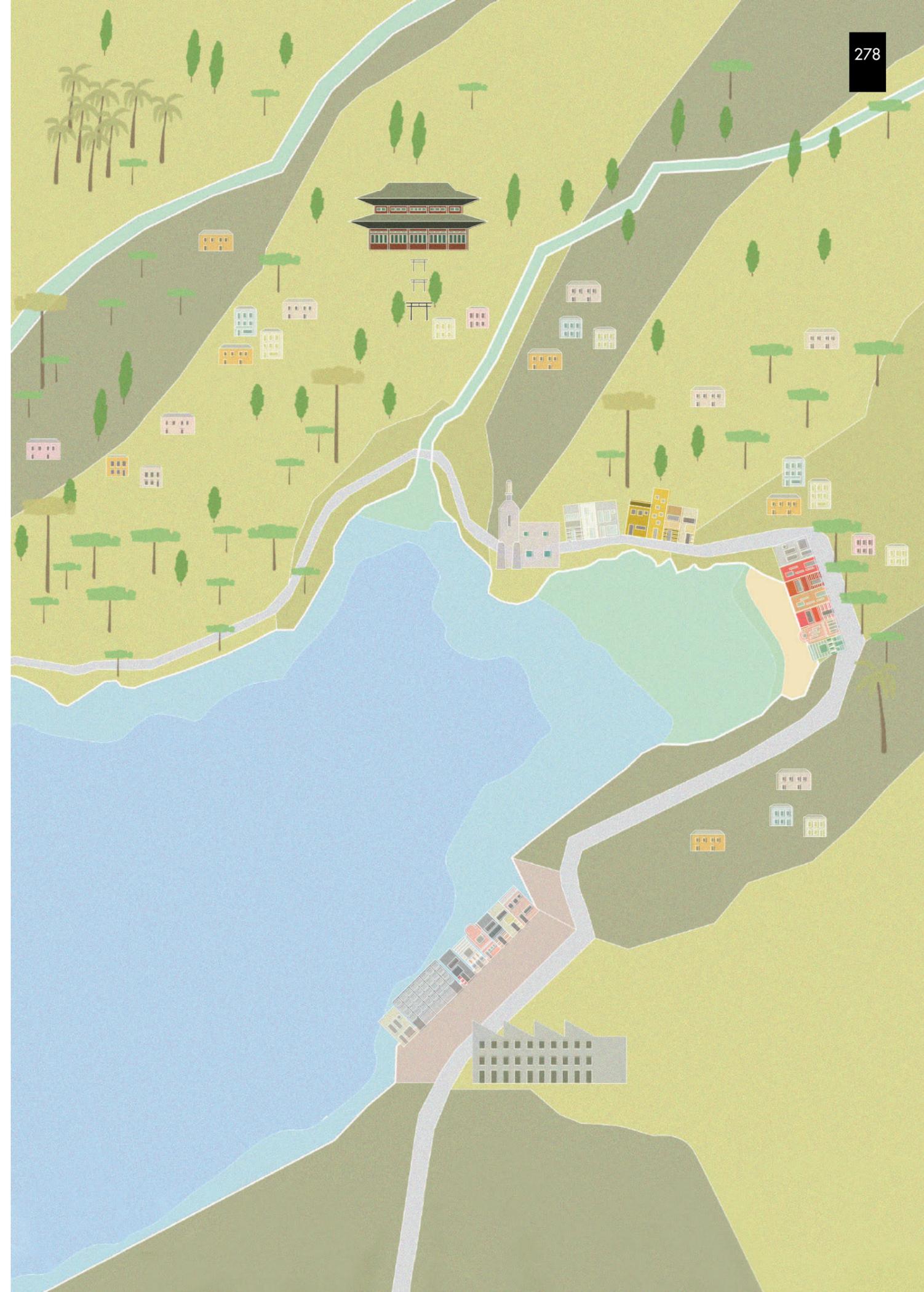
"The city changes as a result of deeper movements of social structures and power, of imagery and representation, of political and institutional culture; changes that are obviously linked to those events, but in a mediated way.

The future of the city is designed mainly by three semantic basins, respectively by fear, imagination or continuous confrontation with everyday life, while the past is designed by nostalgia, severe criticism and the will to separate itself from it."

_ Bernardo Secchi

Tenno Historical Footage

XIX century
different villages with a strong
relationship with water



Tenno Historical Footage

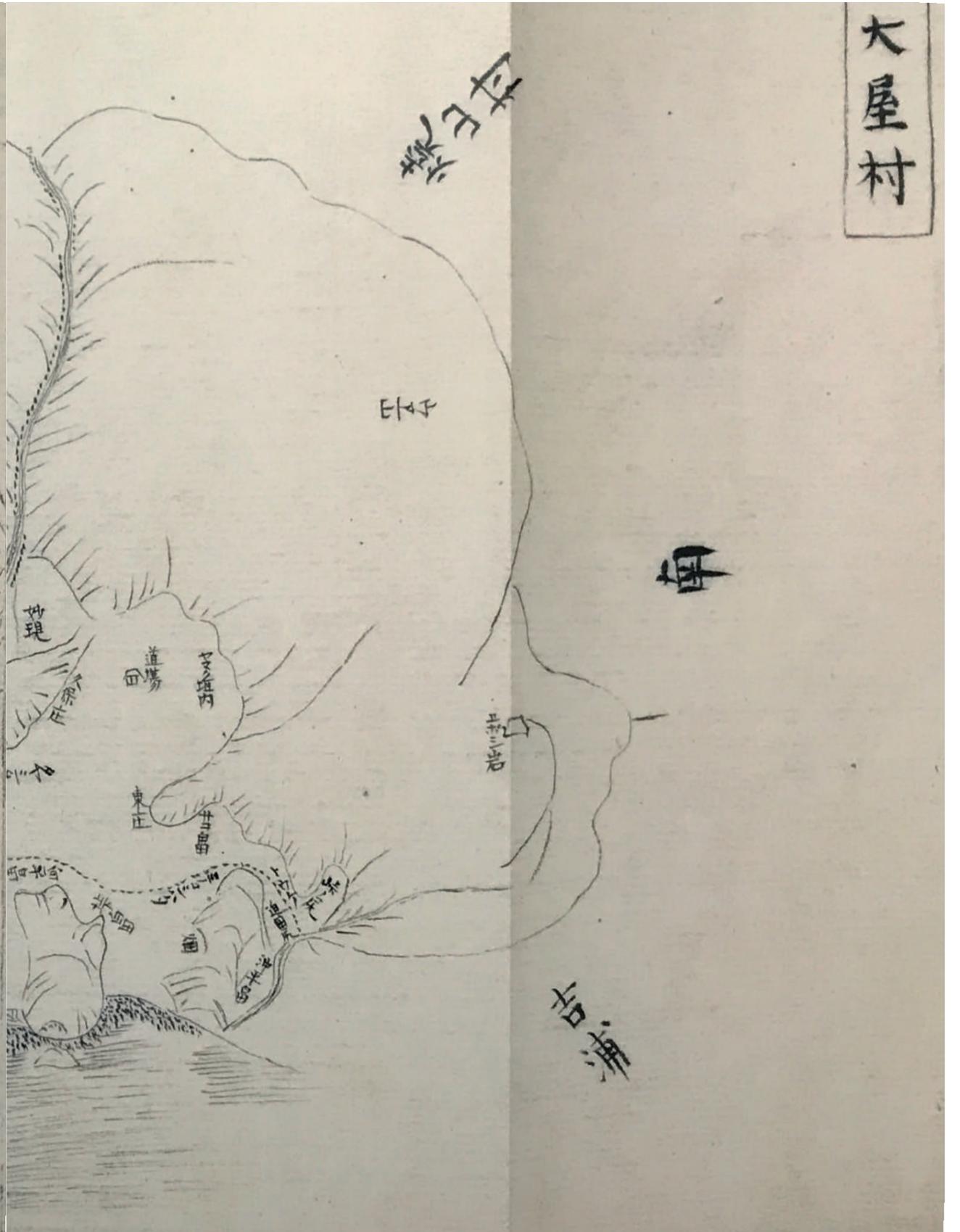
today
an unified village divided from the
water by a huge infrastructure
system





The village of Oya (former Tenno)

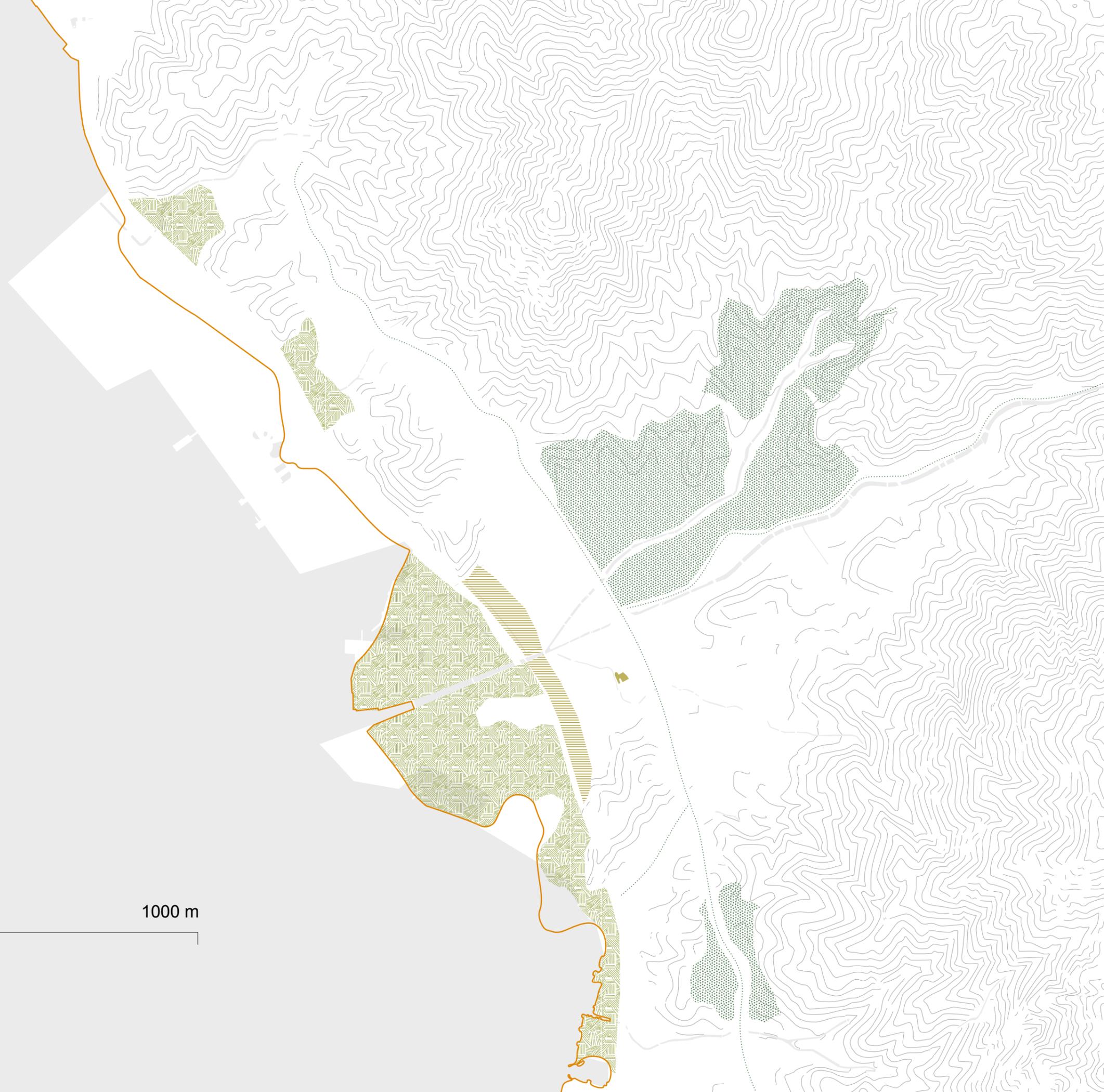
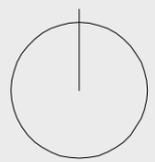
XVIII century



大屋村

XVIII century

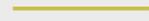
- access road
- coastline
- ▨ urban fabric
- ▨ rice fields
- ▨ grass fields
- temple

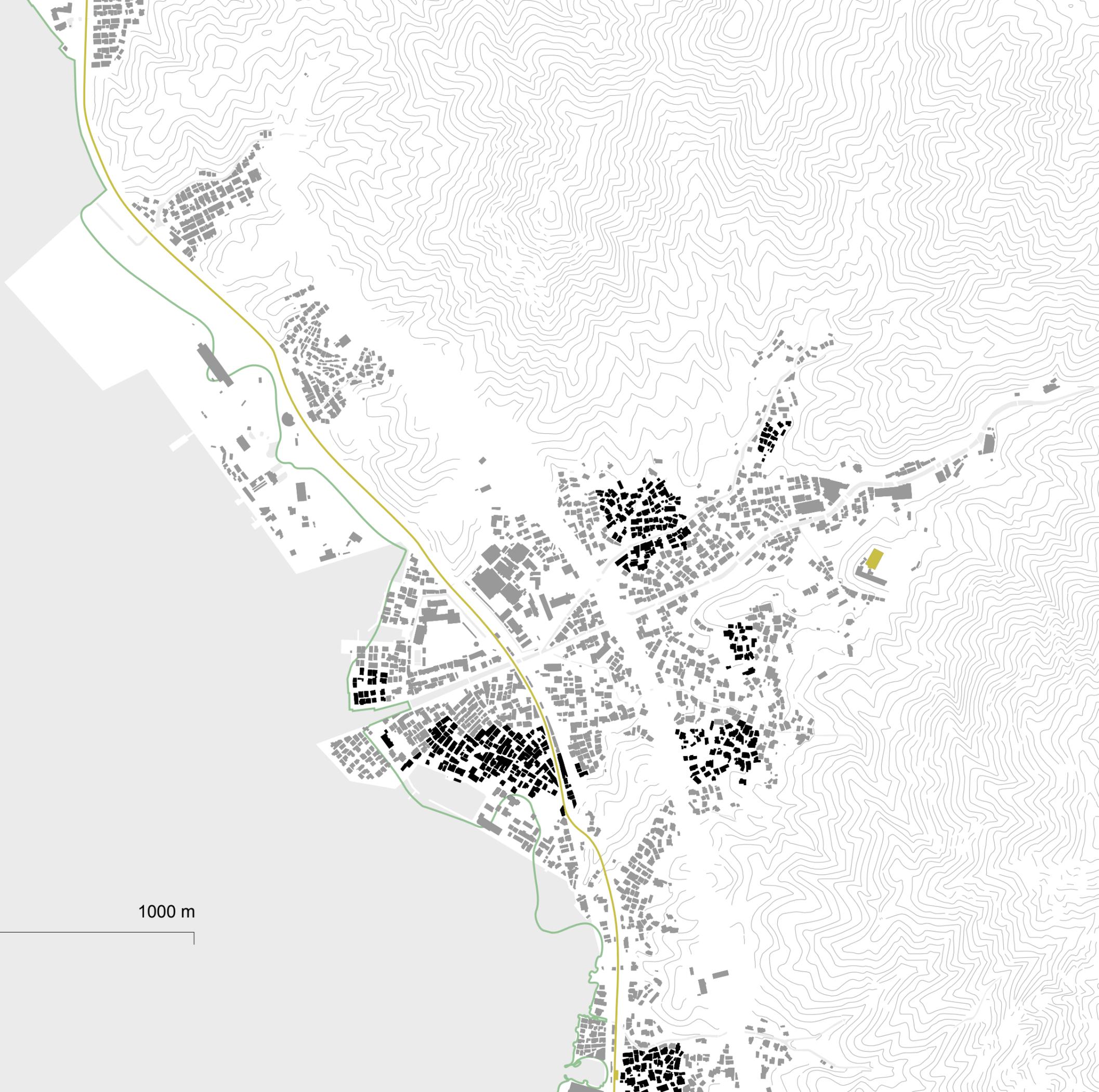
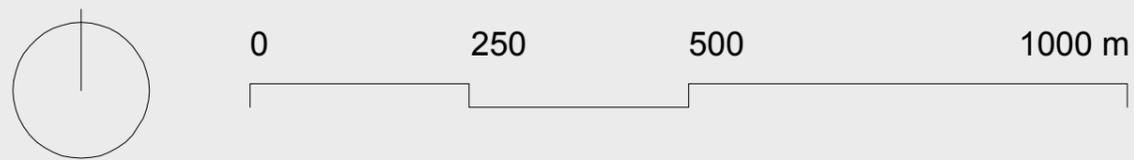


1874 / 1931

- 1874 name of the school established
- 1903 constructed the railway Hiroshima-Kure established the Tenno station
- 1914 World War I established a post office growth of naval industry
- 1918 the school improved

1700 inhabitants

-  new construction
-  coastline
-  not existing urban fabric
-  existing urban fabric



1935 / 1950

1935 constructed the road Hiroshima-Hu
established the Pen factories

1945 World War II
defeated and typhoon
Korean War
lack of food
new elementary and middle school
new community centre

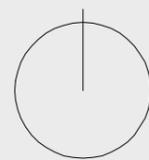
4900 inhabitants

 new construction

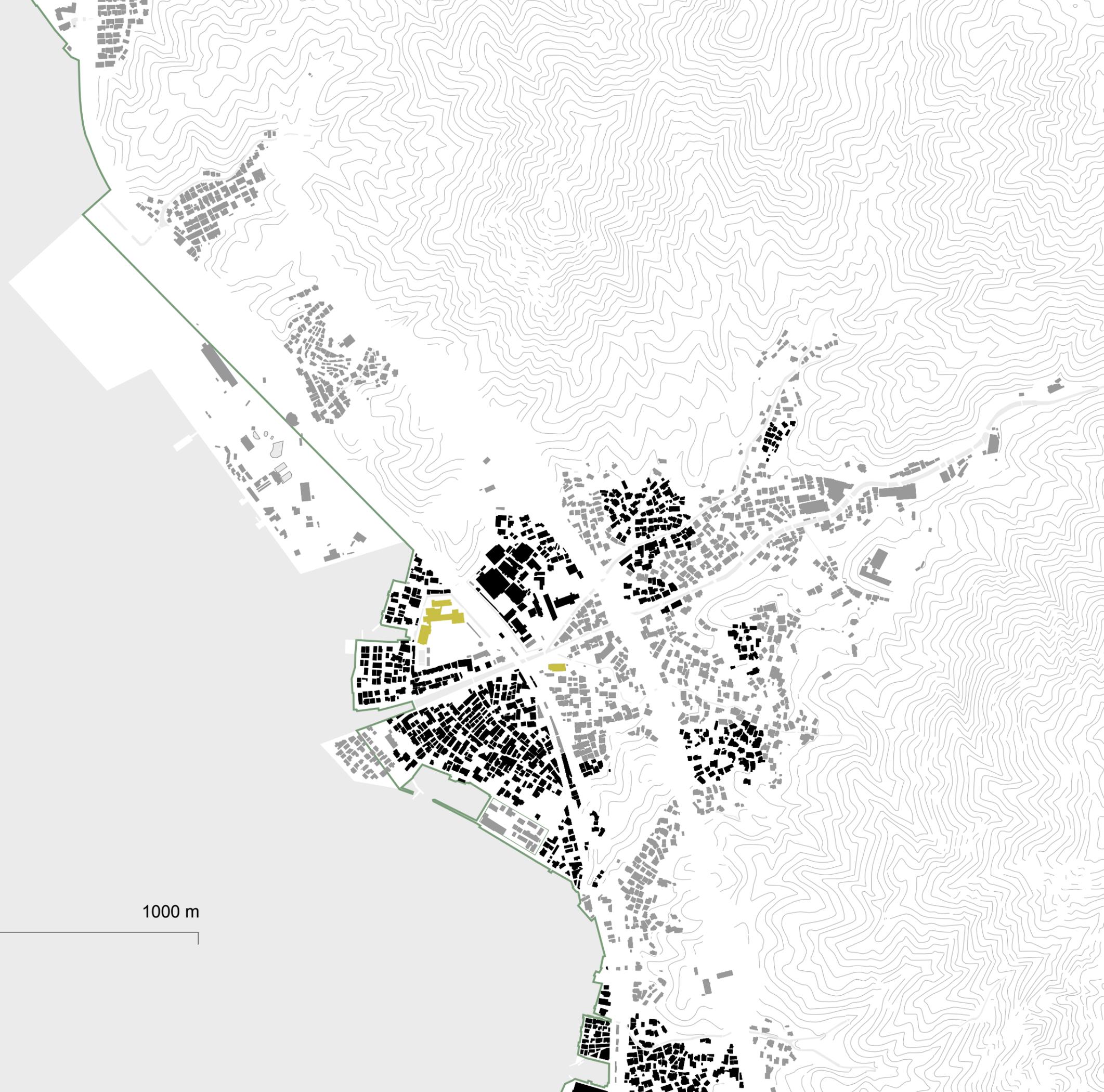
 coastline

 not existing urban fabric

 existing urban fabric



0 250 500 1000 m



1956 / 1969

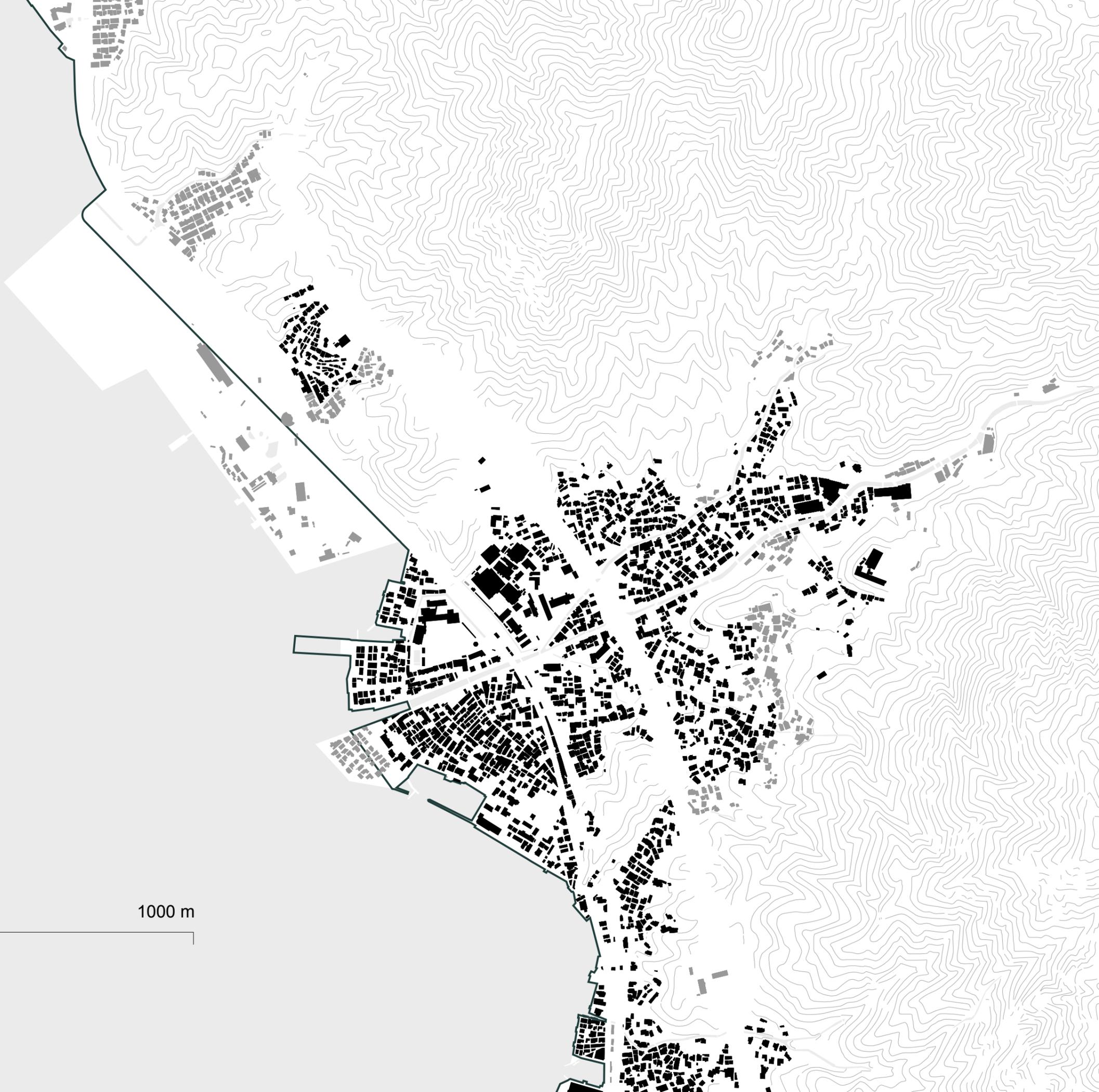
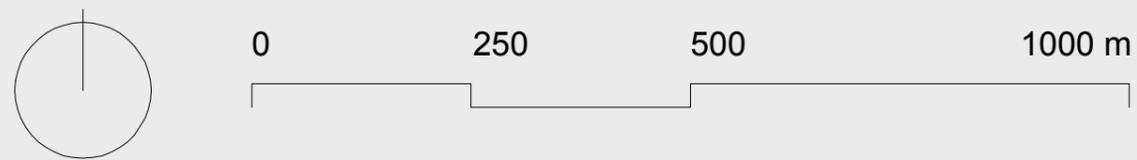
1956 merge to Kure

1967 rainstorm

1968 new middle school

5480 inhabitants

-  new construction
-  coastline
-  not existing urban fabric
-  existing urban fabric

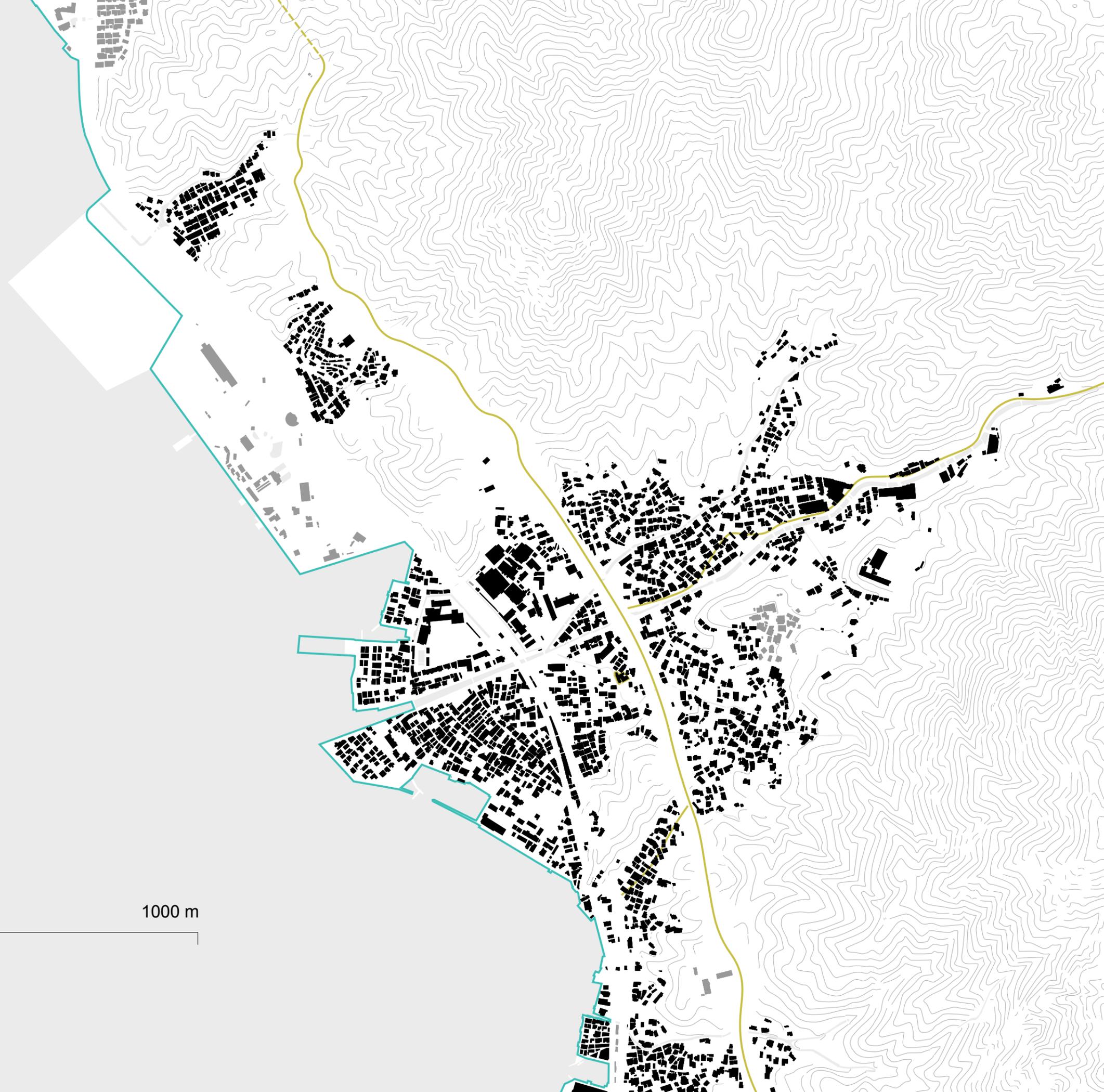
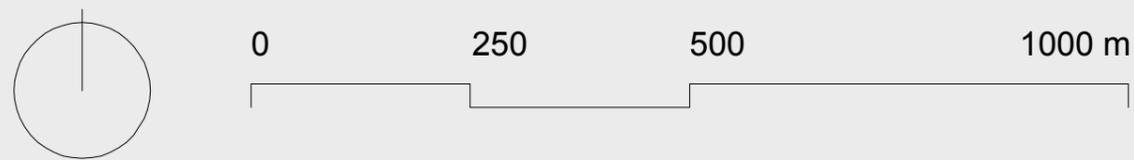


1971 / 1987

- 1971 constructed Highway31
- 1975 constructed Senior Citizen Day Care
- 1980 renovation of the elementary school

5620 inhabitants

-  new construction
-  coastline
-  not existing urban fabric
-  existing urban fabric

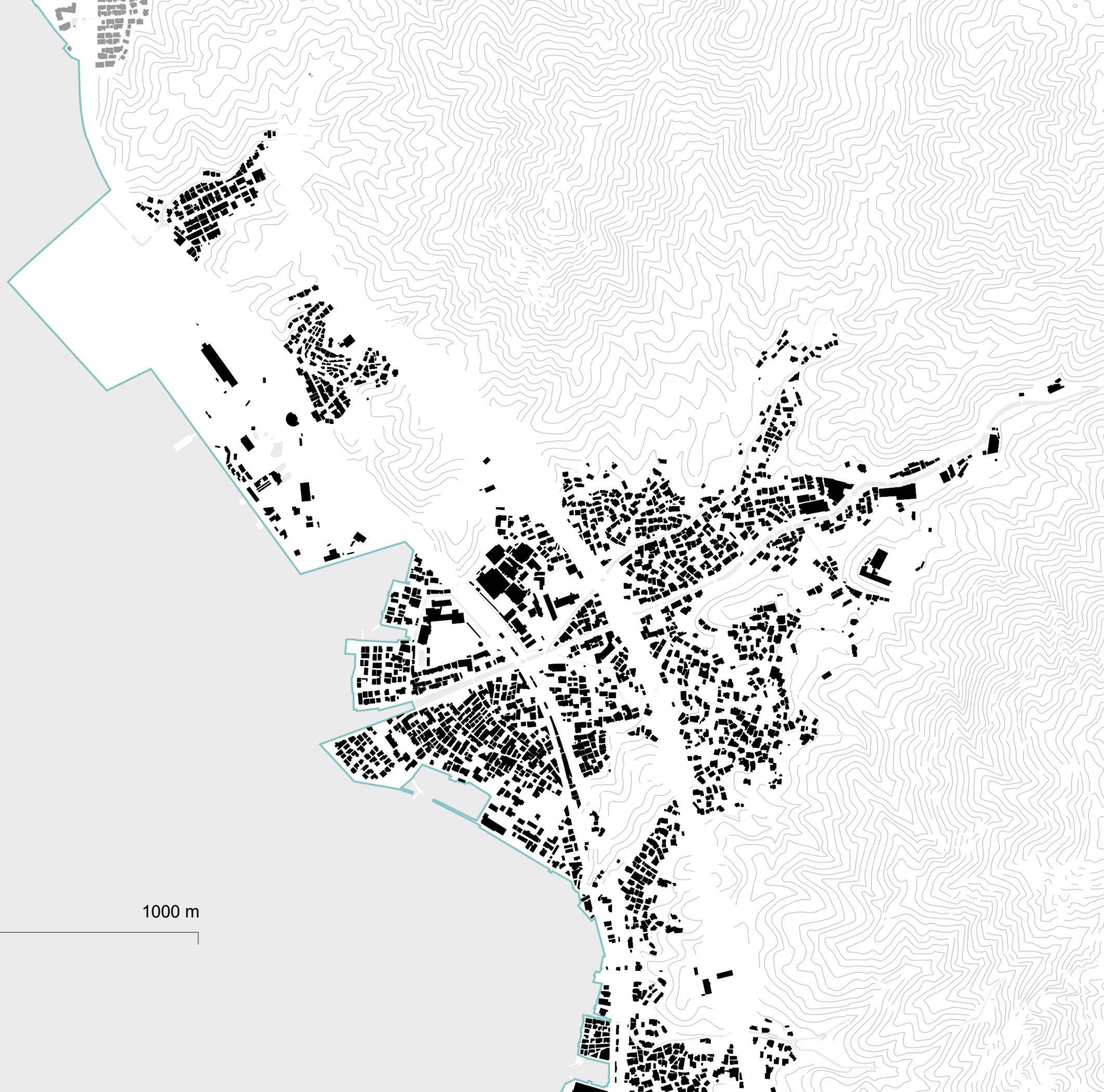
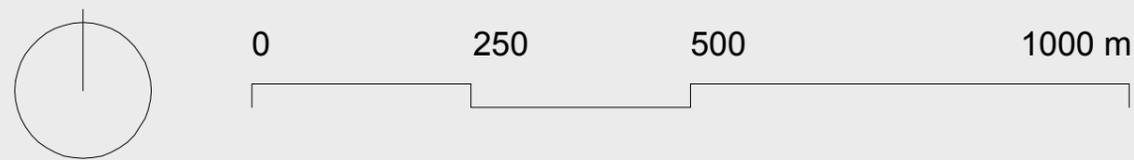


1990 / 2000

1995 decrease of population

4910 inhabitants

-  new construction
-  coastline
-  not existing urban fabric
-  existing urban fabric

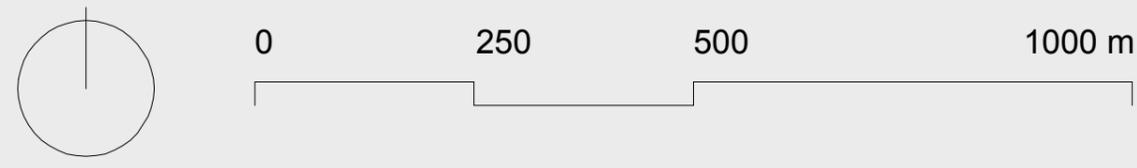


2018

2018 rainstorm

4220 inhabitants

-  new construction
-  coastline
-  not existing urban fabric
-  existing urban fabric

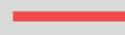


Why is the Landscape so Infrastructured?

During the second half of the XX century the landscape has been a victim of a severe infrastructuralisation. This process has been massive and oversized, but with an important aim: prevent the Japanese cities from natural disasters.

It's following an analysis about Tenno and the presence of dangers above its territories.

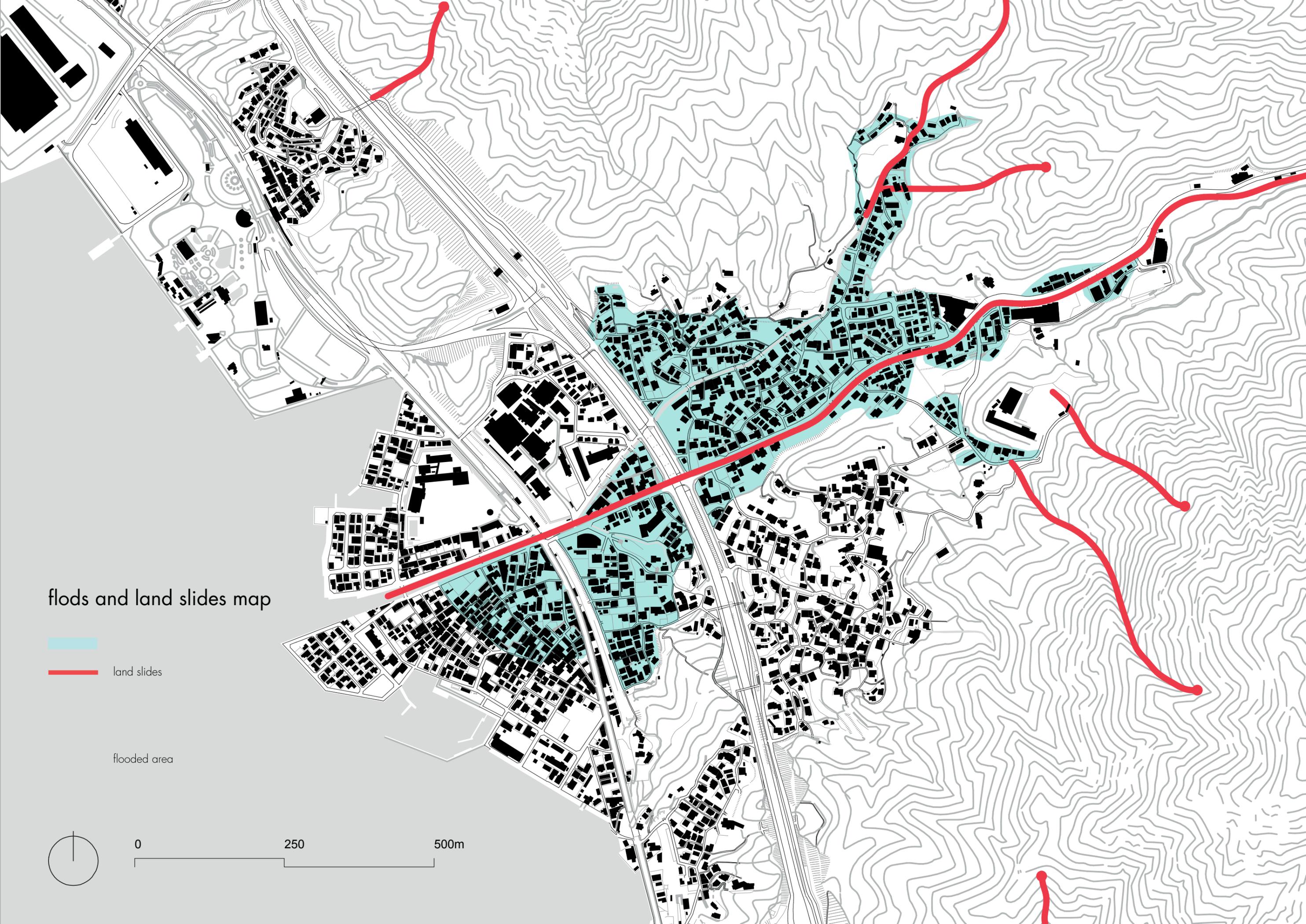
flods and land slides map

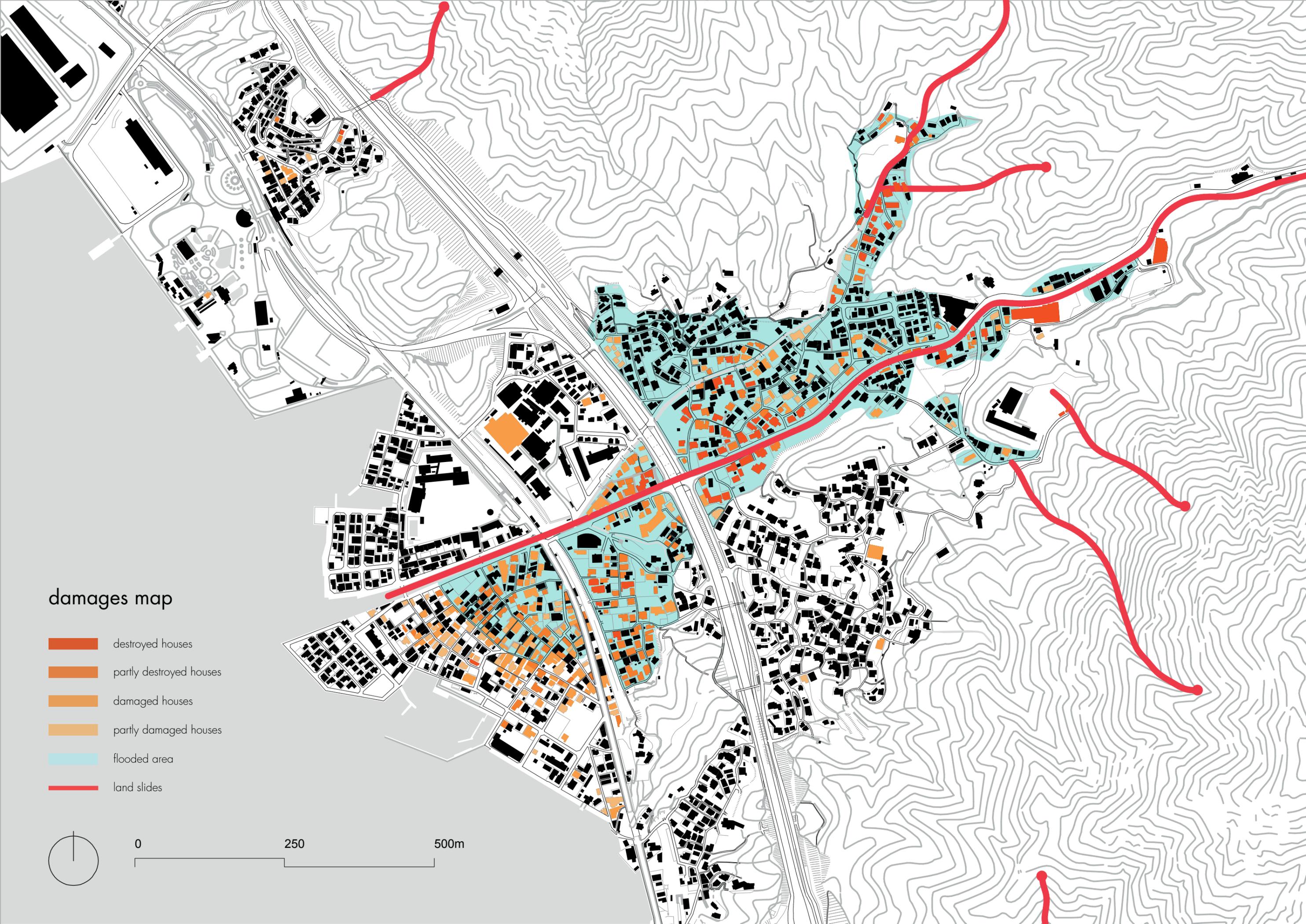
 flooded area
 land slides

flooded area



0 250 500m





damages map

- destroyed houses
- partly destroyed houses
- damaged houses
- partly damaged houses
- flooded area
- land slides



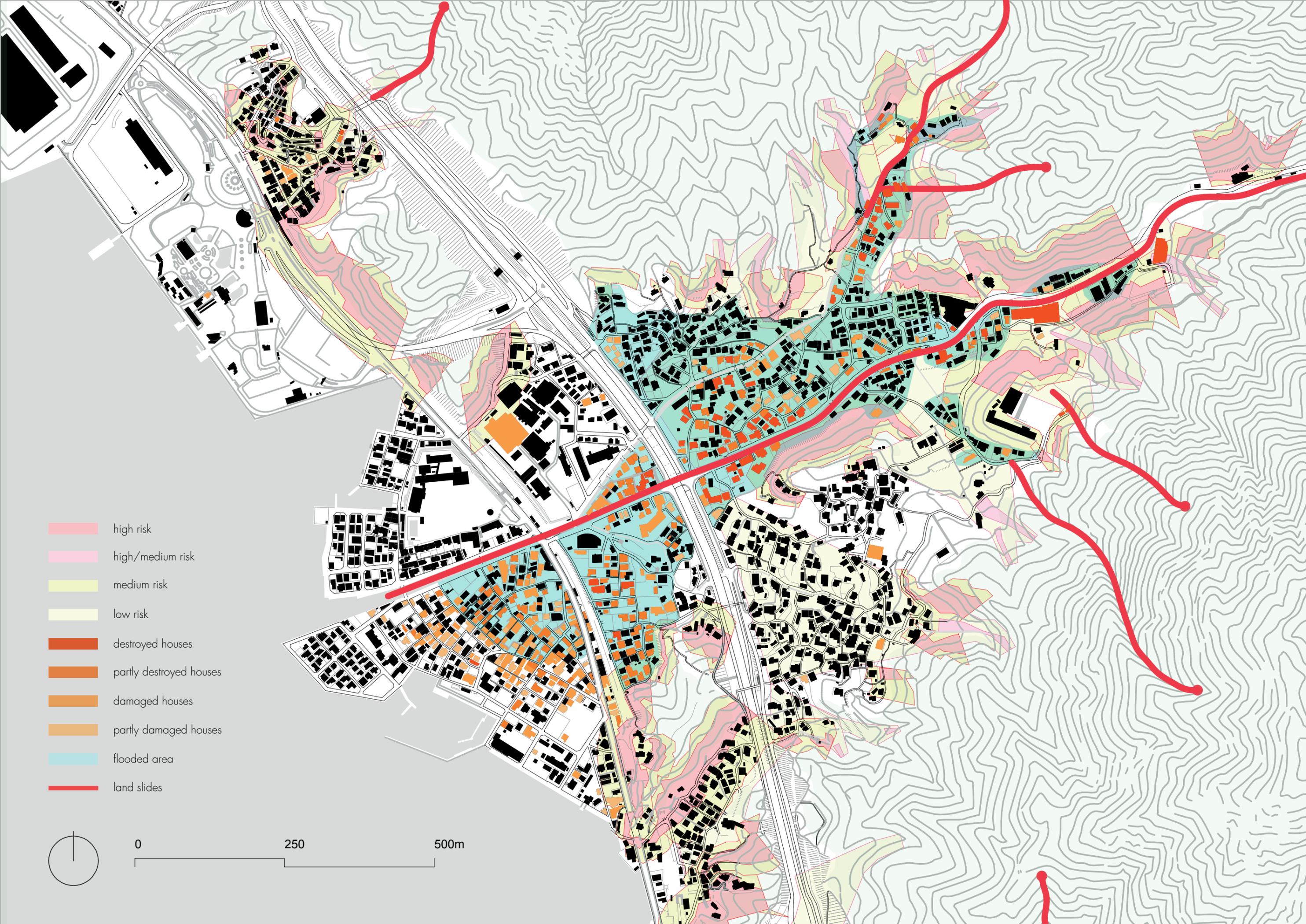
0 250 500m



hazard areas

- high risk
- high/medium risk
- medium risk
- low risk





- high risk
- high/medium risk
- medium risk
- low risk
- destroyed houses
- partly destroyed houses
- damaged houses
- partly damaged houses
- flooded area
- land slides



Quality of Spaces in Tenno





- XXXX reclaiming land
- ==== retaining wall
- wave wall

Tenno

Infrastructures in the Landscape





to Etajima Island
 28min

to Hiroshima
 70min
 27min
 28min

to Hiroshima Airport
 105min
 55min

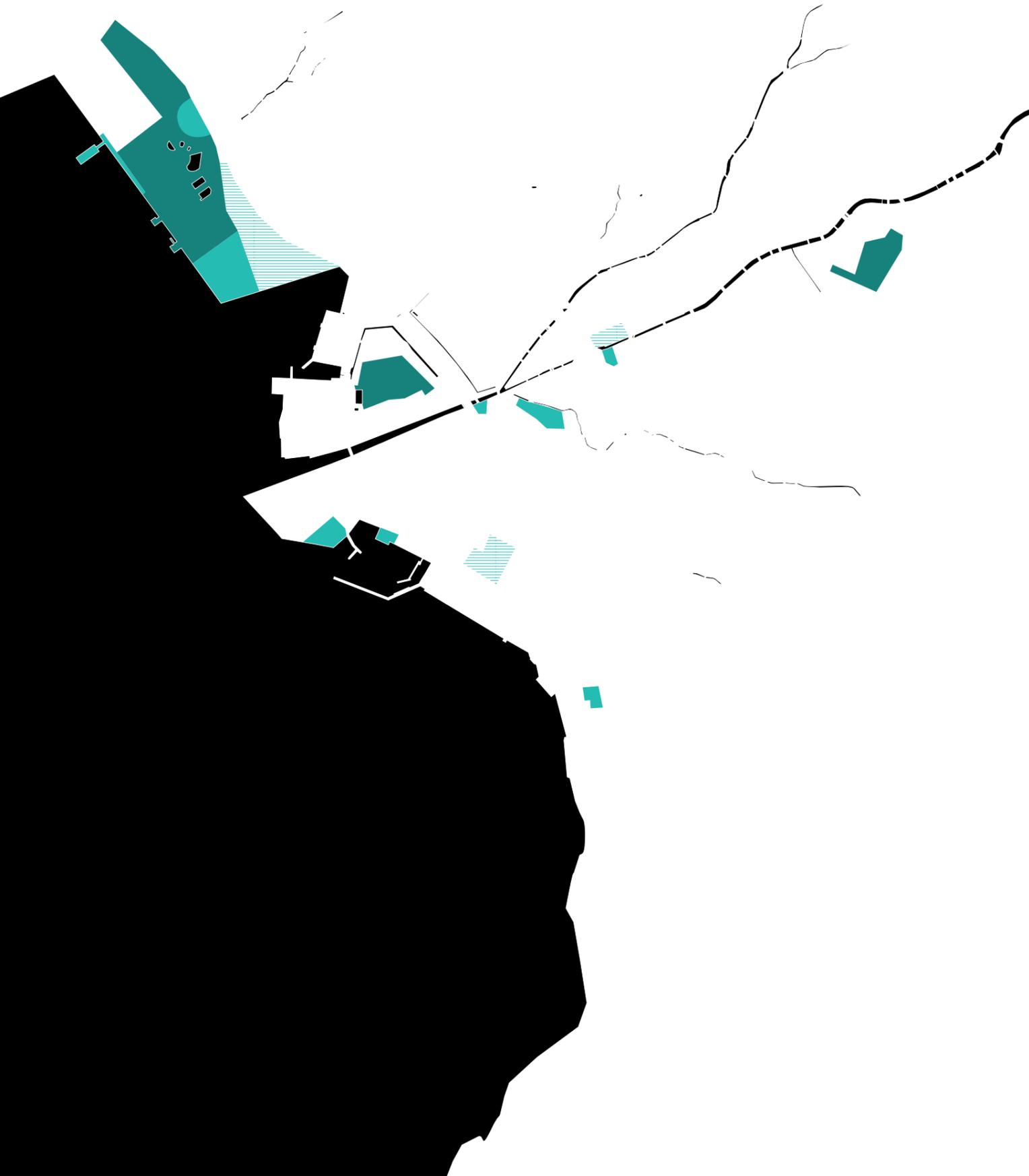
to Kure City
 35min
 15min
 28min

to Kami-Kamagari Island
 55min

-  railway
-  highway
-  prefectural road
-  ferry

Tenno

Main Infrastructural Networks

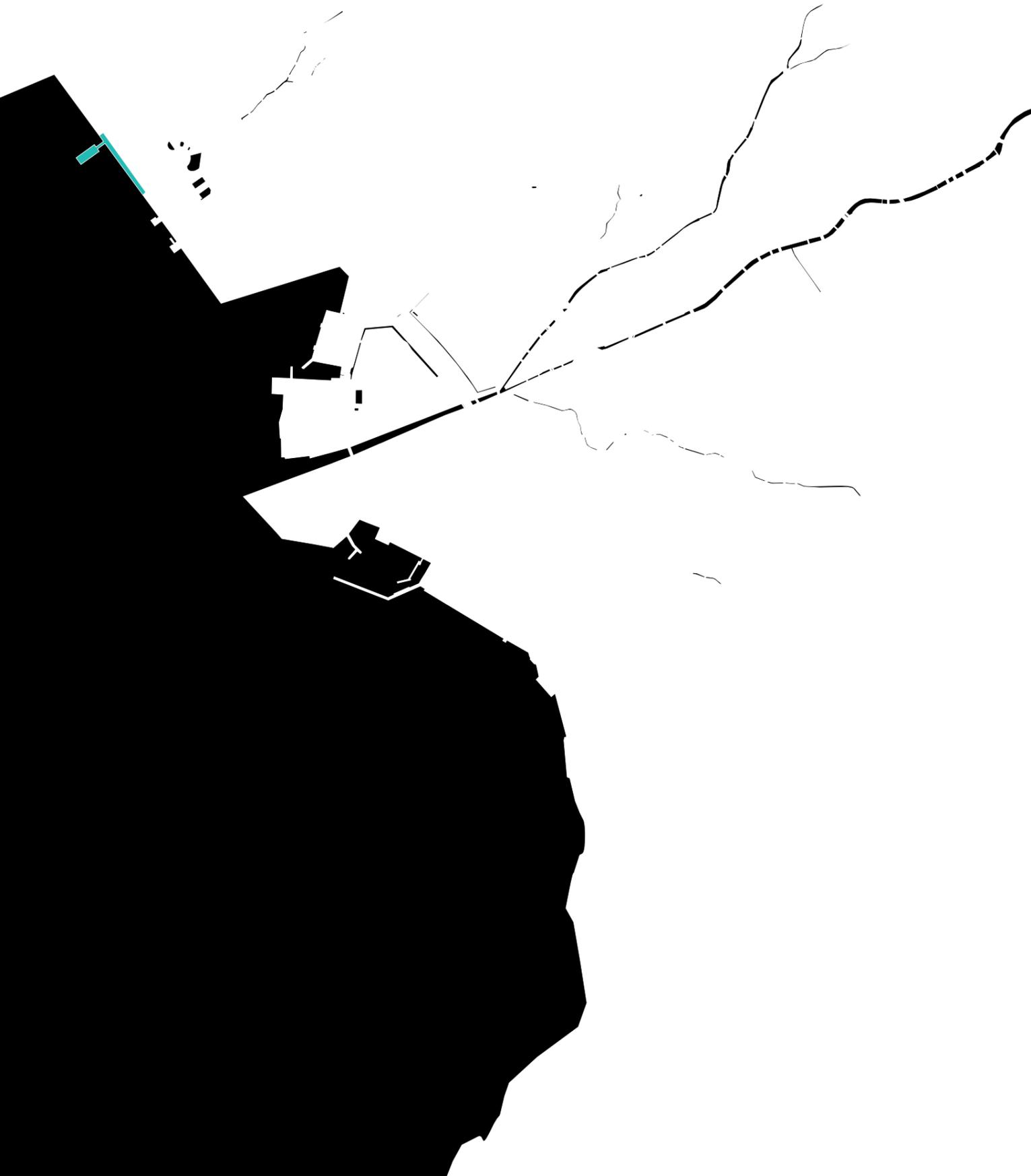


- public
- semi-public
- parking area

Tenno

Public and Semi-public Spaces

Map of the public and semi-public spaces that are currently present in Tenno.
There is an actual and urgent need of designed public spaces.



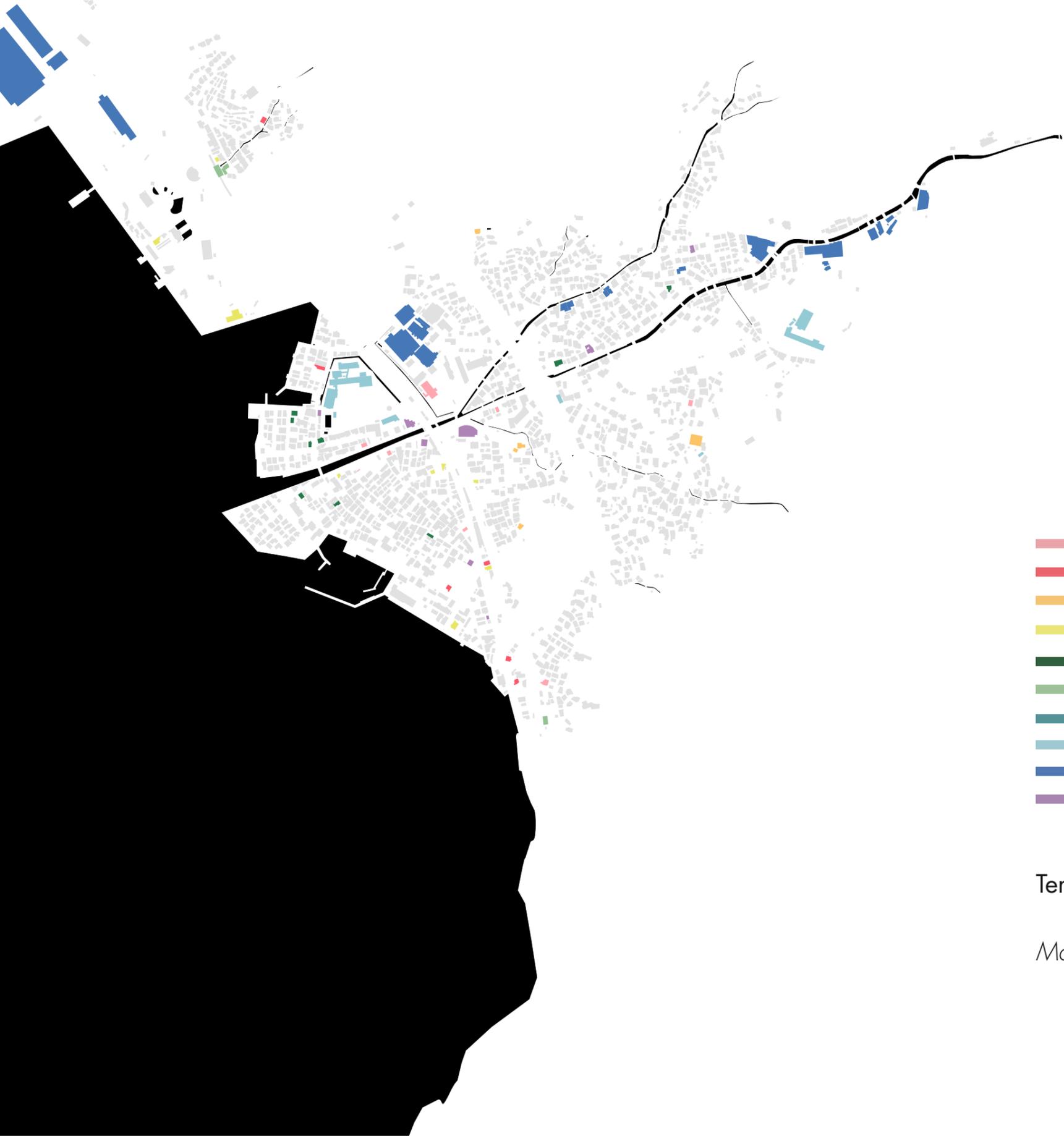
 public space connected with the presence of water

Tenno

The Relationship Tenno / Water

Map of the spaces that are currently present collaterally to the presence of water.

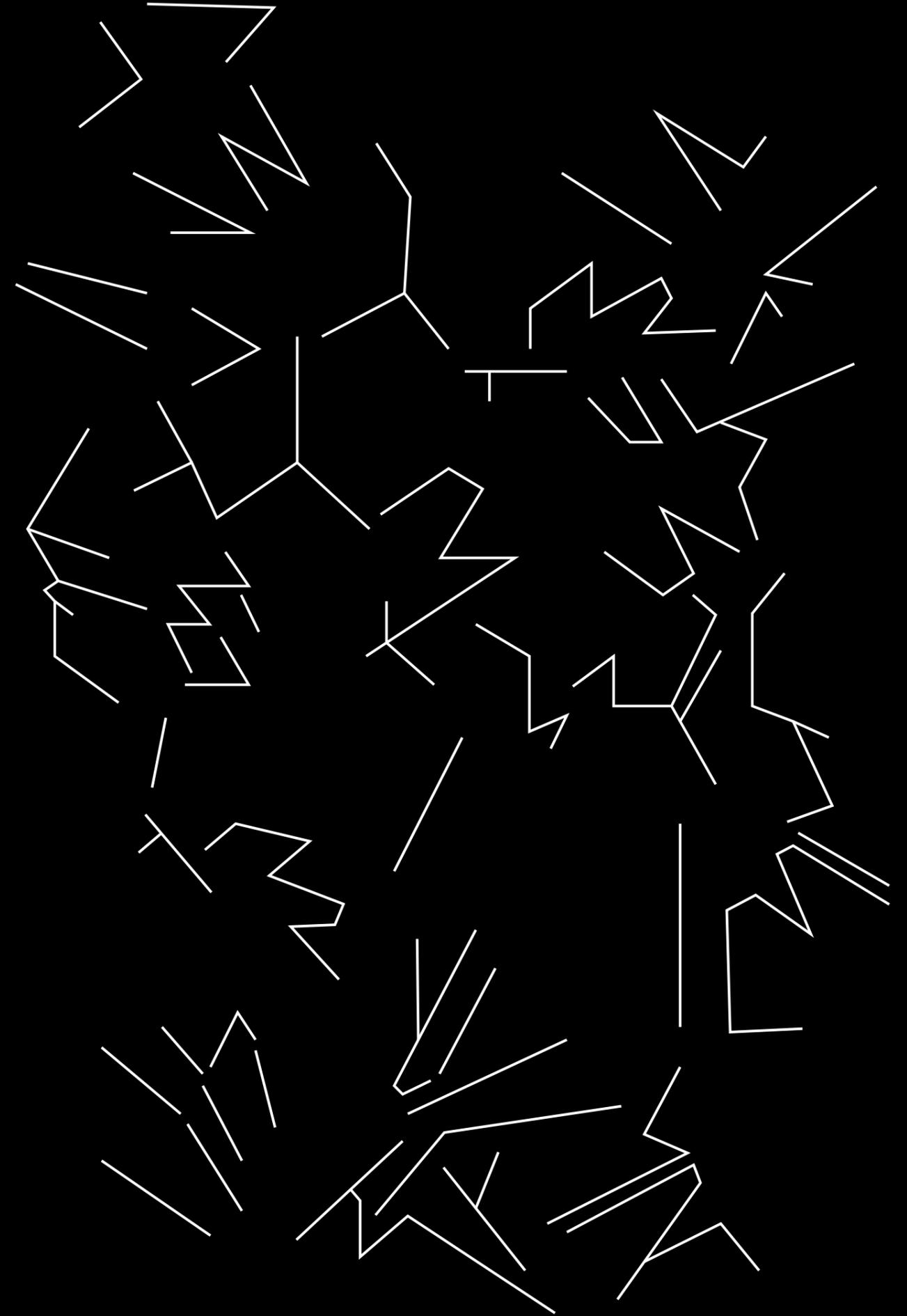
It is easy to observe the radical closure of Tenno towards the sea and the rivers.



- shopping
- health
- religion
- gastronomy
- office
- transportation
- leisure
- education
- industry
- service

Tenno

Main Facilities



Fragmentation of the Landscape due to the
Presence of the Infrastructural Network

Infrastructures as Spontaneous Public Space



Interviews and Workshops with the Local Population

"When I imagine a fictitious people, I can give them an invented name, treat them openly as a fictional object, found a new Garabagne, so as not to compromise any real country in my imagination.

It is precisely this system that I will call Japan."

_ Roland Barthes



INTERVIEWS

During the analysis phase of the case studies I carried out several interviews with the local population, activities that involved them both in the reconstruction process following the disasters that occurred in their communities and in filling a sense of community and synergy manifested by most. ²

With the collaboration of a team of professors and researchers from the Imperial University of Tokyo, we investigated a number of issues related to our field of research and interest, referring to both the population and the local government:

- _ The current relationship between city and nature, with particular reference to water.
- _ The needs of citizens and the community.
- _ The level of stress following a natural disaster (where it occurred).
- _ Memory and local historical heritage, to be recovered or enhanced.

The interviews were carried out on three occasions, two months apart, in order to monitor the process of acceptance and critical development of the community.

The sample chosen was as heterogeneous as possible and the feedback we received was very interesting and useful in the subsequent design concept, which set as its main objective to solve some of the strong local shortcomings, in particular:

- _ An intensification of the quality of public space.
- _ Increase in services offered to the community.
- _ Greater contact between the city and nature.
- _ Enhancement of the territory.
- _ More attention to potential disaster situations.

Interviews are organized with a division

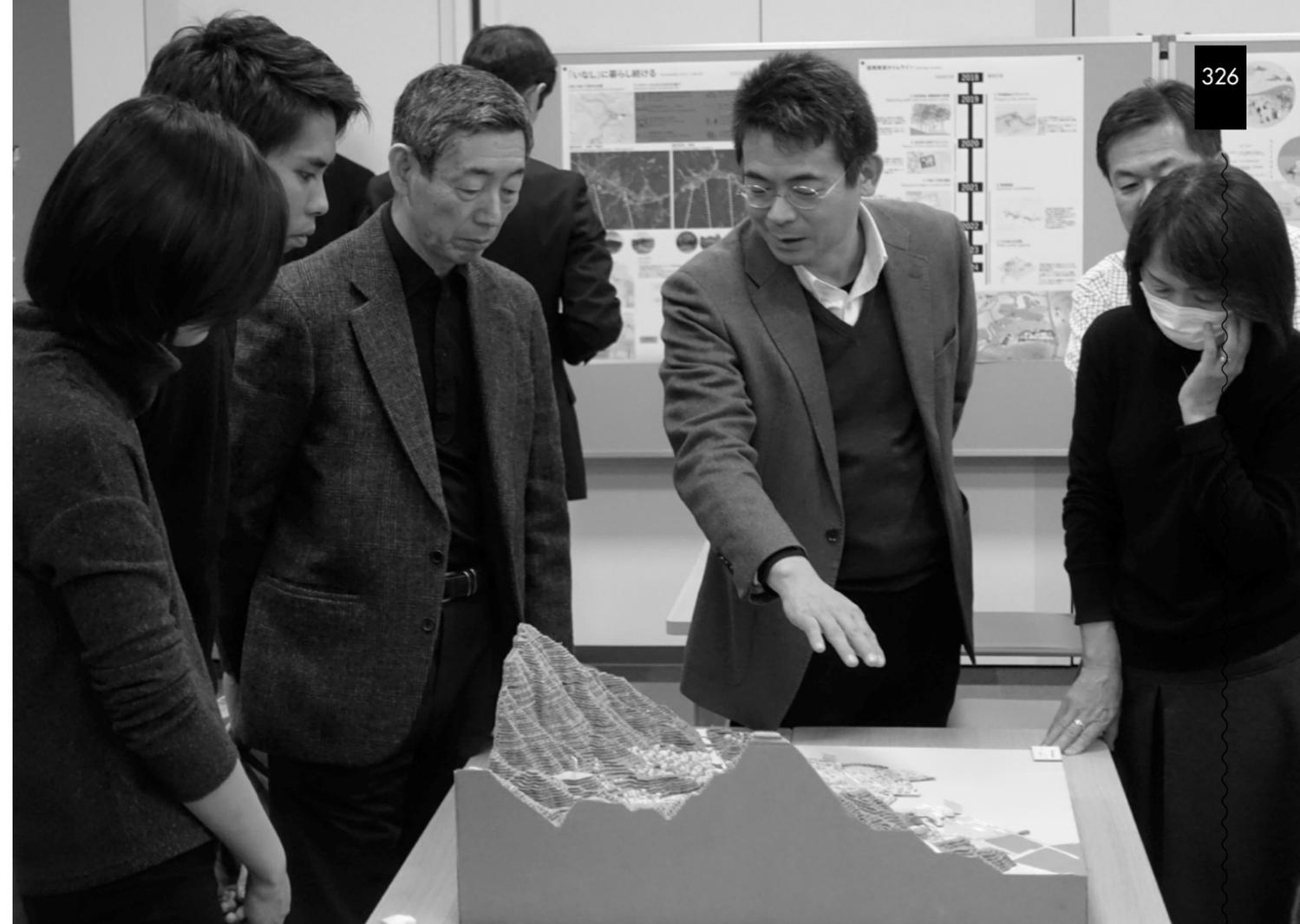
between those addressed to local government and those addressed to citizens, subdivided in turn into subgroups according to the country of origin.

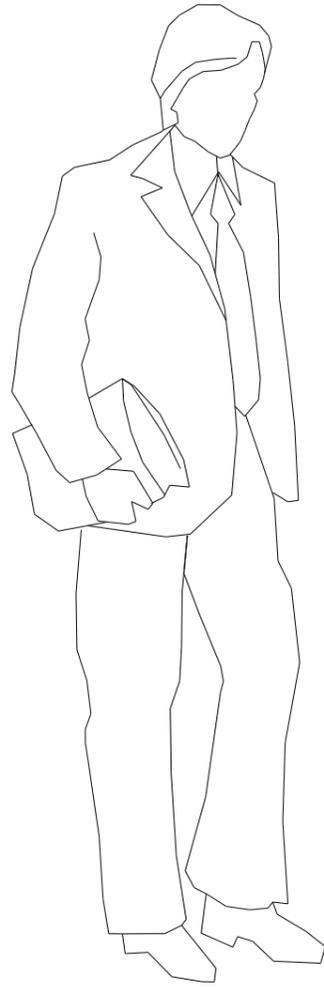
INTERVIEWS WITH LOCAL COMMUNITY LEADERS

The leaders of the local community are chosen by the community itself every five years as representatives of the citizens and intercessors with the municipal and prefectural government.

Following some observations on the relationship between cities and nature and infrastructure.

All the interviews have been personally translated from Japanese to English.





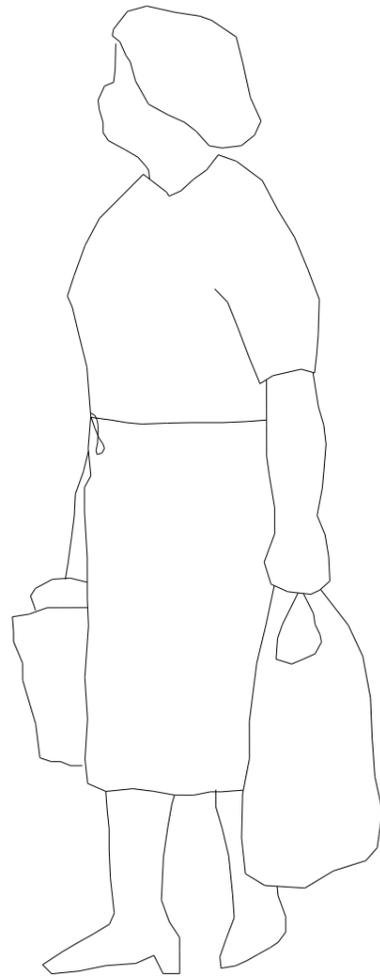
Kengo, 72 years old

"Tenno changed a lot during the 1900s. Since the 1960s, the city has expanded as a dormitory for Hiroshima. Large palaces, dams, and several sea basins were built, which almost completely erased the beaches. Once people came here to enjoy nature, eat oysters in restaurants on the coast. Now the restaurants are gone and the people with them."



Sota, 65 years old

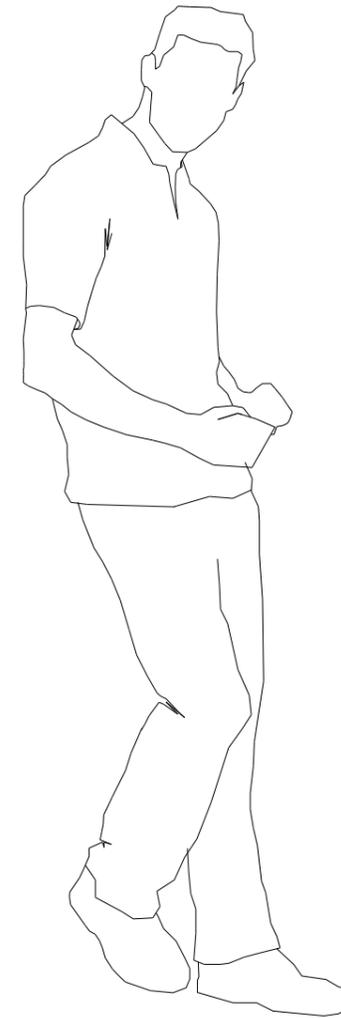
"Before the relationship with the rivers was way closer. The riverbanks were bigger and covered with grass and we used to swim in the river during all the summer. Cherry trees had been planted in the past, and the river was way more intimate and closer with the population, that used to swim in it."



Imoto, 62 years old

"At least 50 years ago there were a lot of sakura trees along all the rivers, mainly in the middle part of Tenno. In spring the landscape was amazing but with the anthropization of all the banks the sakura were removed and now there is concrete at their place."

"The population, when it comes to big purchases, go to the area around Kure station to do all the shopping. It is convenience traveling in public transportation to Hiroshima, Kure, Showa. Up until the middle of the 80's, there were about 40 retail stores, but as a result of the increase in the size of commercial facilities in East and West and the decrease of the population in Tenno, Hiroshima and Kure became more convenient. The shops that still remain are barely portable and just used by the elderly."



Kento, 45 years old

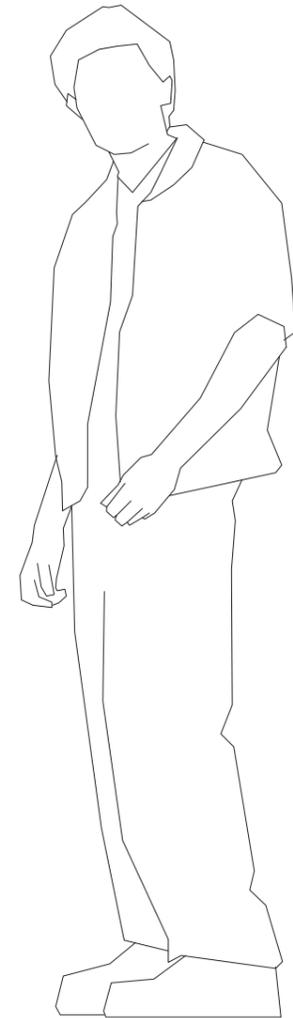
"Tenno was born as an agglomeration of fishermen's houses and oyster producers, but with industrialization these traditions have been lost. Fishing is now just a hobby."

Terraced elds are managed by local residents. There are many farmers who work as a part-time. At least 10 years ago there were around 30/40 producers, now just 10. They are shipped to the agricultural cooperatives in Beno and sold at the morning market in the agricultural cooperatives. Crops, rice, vegetables are the main cultivations."



Hiromi, 29 years old

"After all the natural disasters that have hit Tenno in recent years, we need a place to remember, not to forget what can be caused by the brutal and uncontrolled action of man against nature. Somewhere, a designed and physical place in the city."



Yuchiro, 32 years old

"In Tenno there are several festivals (matsuri) that start from the shrine and run along the sea to immerse the floats in the sea. It would, however, require community spaces where people could gather to take part in the path of the floats and a different morphology of the coast would facilitate the celebration."

Furthermore, Tenno, thanks to its proximity to Hiroshima and the presence of Portopia (a former amusement park gone bankrupt and donated as a legacy to the community), has a flow of more than 1 million tourists per year. However, there is a lack of any kind of equipment for reception, hospitality, catering within the municipality, which leads tourists to move nearby immediately after the visit, in the creation of an impromptu tourism that stresses the territory without giving any benefit."

INTERVIEWS WITH THE INHABITANTS OF THE VILLAGES

GROUP 1_TENNO DISTRICT

_ The evacuation of the northern areas of the city is difficult and from the large retaining walls comes down a lot of water that floods the streets. A way should be found to inform and educate people in the event of a disaster and to support people who have difficulty moving independently.

_ The coastal area is not adequately exploited, there are no community spaces, there is only the playground for children but it is not equipped and nobody uses it. Children are often forced to play on the street.

_ There are no adequate accommodation for tourists or accommodation of any kind.

_ The river should be designed so that it does not create floods so frequently, for example by restoring its original course or cleaning the river bed from weeds and sedimentary trees. I remember once that it had a sinuous and curvilinear course, before it was cemented in the 1970s.

_ The primary school should be equipped with facilities to make it usable for community functions and as a reception center in case of disaster.

GROUP 2_ONISHI DISTRICT

_ Design a way to temporarily use floodable spaces or in the vicinity of rivers and the sea, which in case of disaster are evacuable or removable.

_ Dams to maintain the hills are indispensable. But is there a way to use the adjacent space or the dams themselves every day?

_ In the event of a disaster, communication between citizens and with the local government must be allowed.

_ The course of the river is too much infrastructural at the moment. Cement should be removed and the original natural essence returned. When I was a child I never had any floods.

GROUP 3_HIGASHIKUBO DISTRICT

_ The word "unexpected" is often used, but I don't want it to be used anymore. It should be considered that 300-400 ml / h of rain can occur in the future. More consciousness is needed. I think it is important for the citizens to continue to prepare for disasters in the future, as they continue to speak.

_ I thought my house was safe, on top of the hill. During the typhoon in 2005 it was. But not this time. It was placed in the low-risk zone by the government but it was completely flooded. The first floor was full of mud almost up to the ceiling.

_ Portopia doesn't really function as an amusement park or urban park anymore. Effective use of the area should be reconsidered.

_ There should be more community centers and evacuation points in the municipality, we often meet in the shrine park, we organize activities here, even if there are no properly designed spaces.

GROUP 4_SHIMONISHI DISTRICT

_ We have to make sure that in case of need there is an evacuation place, a place where people can find each other and be safe.

_ Evacuation plans should be formulated according to the type of disaster.

_ We should promote urban development that is resistant to floods, such as improving drainage capacity of the entire district.

_ Multifunctional community structures should be designed to be useful in case of need, negative or positive events, be they disasters or festivals.

_ Implementation and disclosure of information because there is no briefing session or information on infrastructure reconstruction plans and reconstruction plans, and future plans are not well understood.

_ Why not redesign Portopia as a community space?

GROUP 5_OHAMA / MISTUHA / HONOMACHI DISTRICT

_ I want people who have experienced damages, including reconstruction and event planning.

_ When there is a risk of a disaster, or when it is about to occur, I would like you to contact me with a warning such as a siren.

_ A development corporation will be set up to reorganize the entire area of Minamicho and create a completely new town. Implementation by the municipal administration, a new town development and land readjustment that do not make the vacant land after a disaster in the town a negative legacy. New facilities for Tenno, such as commercial activities, new houses, accommodation for tourists, public parks and a community outdoor space, new developments for the north district and Portopia.

_ I want the administration to manage the river by cutting trees and removing large stones in order to be able to flow in the event of a disaster. The river, especially near the bridges struggles, and this time it got stuck. Its thickness is getting smaller and smaller, so is doing the volume for use which increases the risk of flooding.

_ We couldn't hear the broadcast inside our house because of the sound of rain and reflection. I'm sorry to have lost an important person.

Even if the situation was quiet at night, I was overwhelmed because there were no broadcaststoinform us about the situation.

_ When I heard that the river broke down, I was wondering whether to evacuate without knowing when the water would come to my house. I never knew what to do because I had never experienced a lot of water flowing at once.

INTERVIEWS OUTCOMES

From the different experiences of contact with the population and administrative bodies at local and regional level, the main conclusions that can be drawn are of a heterogeneous nature.

As far as the direct needs of the population are concerned, these are related to the improvement of the quality of the public space, an increase in the services offered, a greater and better city/nature contact, potentially through a careful enhancement of the territory.

From an infrastructural point of view, structures are often considered an impediment, unused space, a barrier, a fracture in a fragile and disconnected territory. But the very fragility of the territory is often the reason why the infrastructures in primis have been realized, and remain strongly necessary in the majority of cases (even if oversized or obsolete) for the safeguard and security of the citizens. Moreover, in small communities without large economic interests, such as Tenno, the possibility of demolishing or replacing them is very remote, being an onerous and complex action.

These large bodies lying on the territory, therefore, remaining in most of their sleepy existence, passive to what happens around them, could be activated, through punctual interventions of acupuncture, aimed at transforming the "continuous monument" that is the Japanese infrastructure system into a space for the community, where the actions necessary to the population, in a more or less temporary way, can find a place and, in the case of disaster risk, easily removed or resistant to the disaster itself.

¹ K. Henshall. 2012. *A History of Japan: From Stone Age to Superpower*. London: Palgrave Macmillan.

² W. Johnson. 2006. *The Pacific Campaign in World War II: From Pearl Harbor to Guadalcanal*. Abingdon, Oxon: Routledge.

³ The interviews were carried out on three occasions, two months apart, from October 2018 to March 2019, in order to monitor the process of acceptance and critical development of the community.

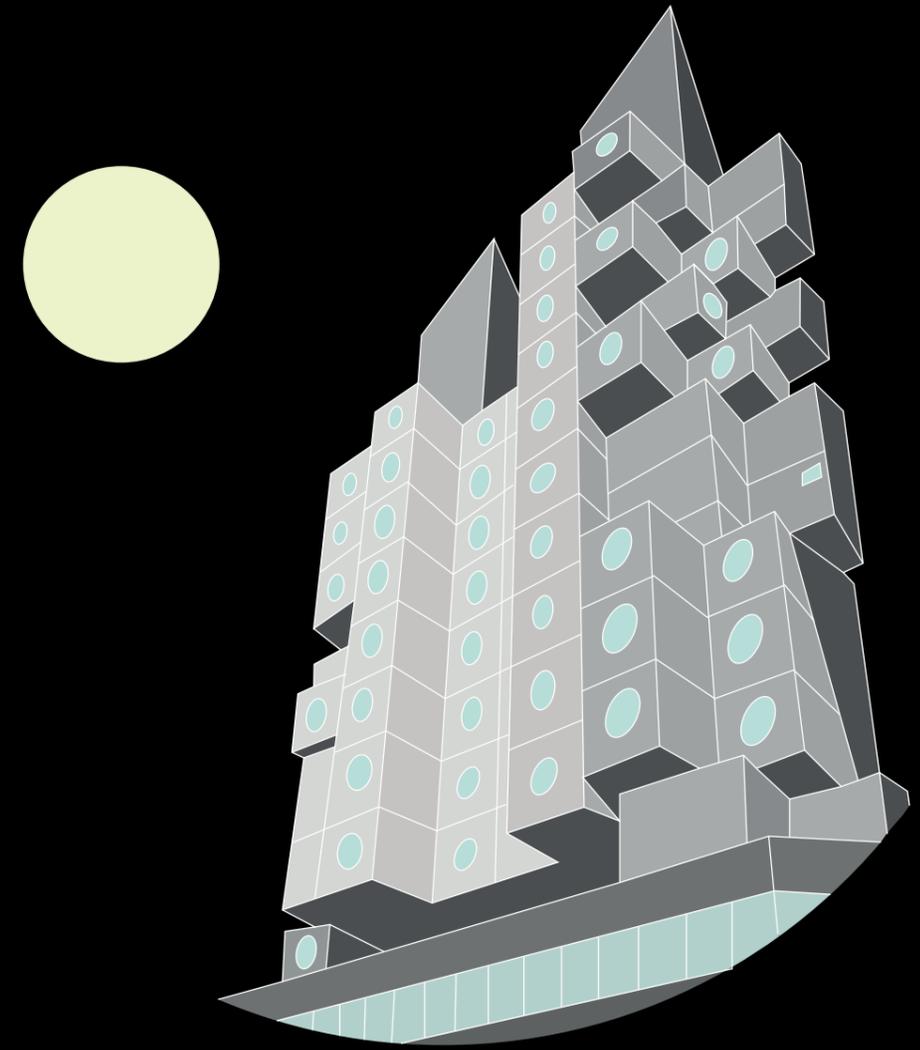
The sample chosen was as heterogeneous as possible and the feedback we received was very interesting and useful in the subsequent design concept, which set as its main objective to solve some of the strong local shortcomings.

All the interviews have been translated personally from Japanese to English.

A thorough analysis of existing infrastructures, tsunami and retaining wall, reclaimed land, train rail, highway, station, parking, bridge, orientates the awareness of the huge potentiality of the infrastructural network, that through punctual, low-cost operations could be activated, restore as a "continuous monument".

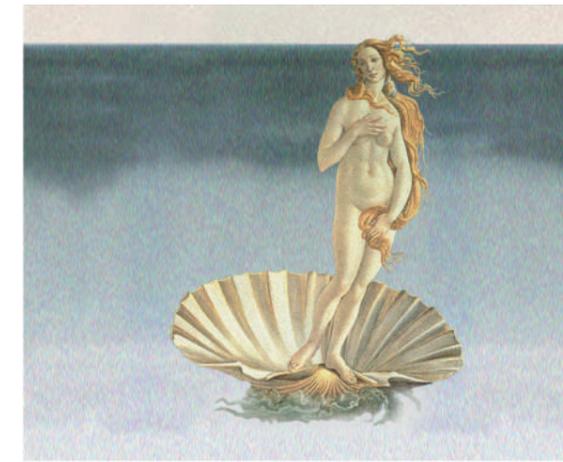
Thresholds towards the city are particularly strategic to boost the project's effects at the urban scale: newly-built folies are installed, acupunctural interventions re-link the local urban fabric to the sea, lastly, a potential new network of urban connections emerges at a wider scale.

A new possible balance is suggested between the city and the sea, with the infrastructures not anymore interposed as barriers but present as link, as engaging part of the urban soil, in a new landscape of deliberate architecture.



Kenzo Tange. "Shizuoka Tower". 1967





Contemplation of a Monument



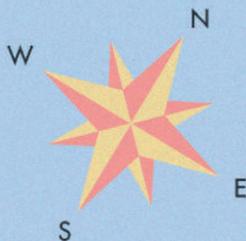
Manifesto

"The city, an artificial world, should be such in the best sense: made with art, configured for human purpose."

_ Kevin Lynch, Paolo Ceccarelli (ed.), 1964.

The pervasive presence of the infrastructure on the territory creates a very wide and complex situational range. The following map, as a real manifesto, represents the archetype of the Japanese coastal settlement, with its recurrent characteristics: the presence of nature, of a cultural and architectural heritage, the overlapping and coexistence of different industrial systems, the fragmentation of inhabited areas, their different densities, an industrial past with consequent legacies often as residues in the landscape, an omnipresent infrastructure in the territory.



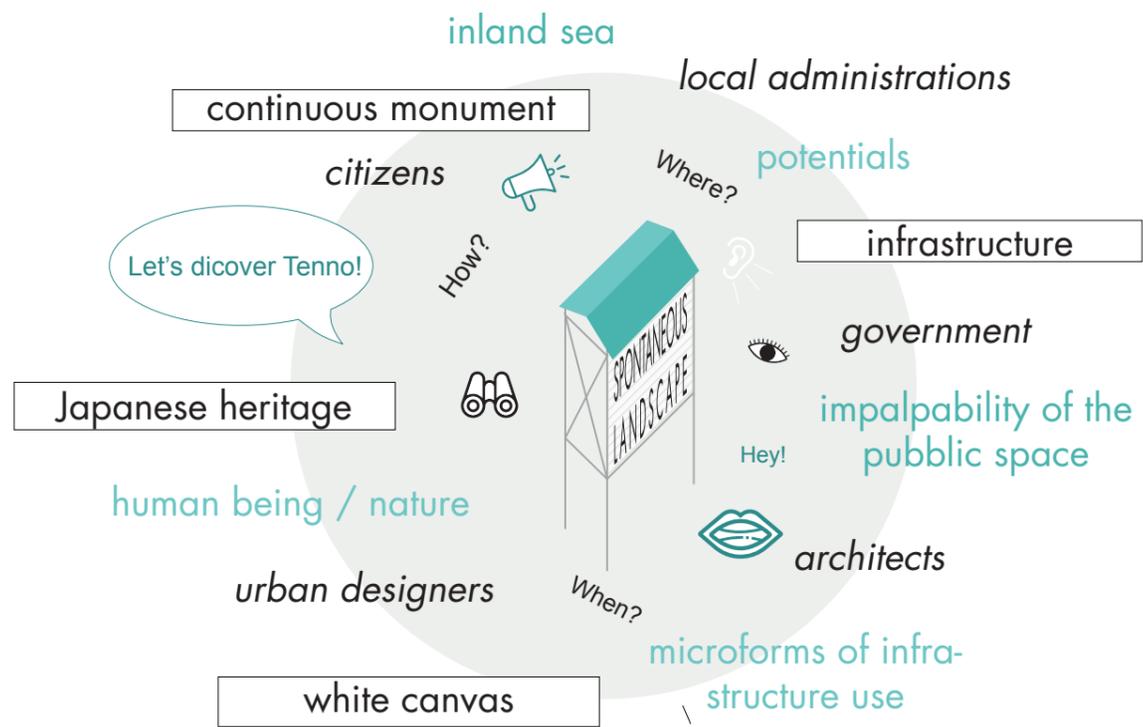


Cultural Strategies

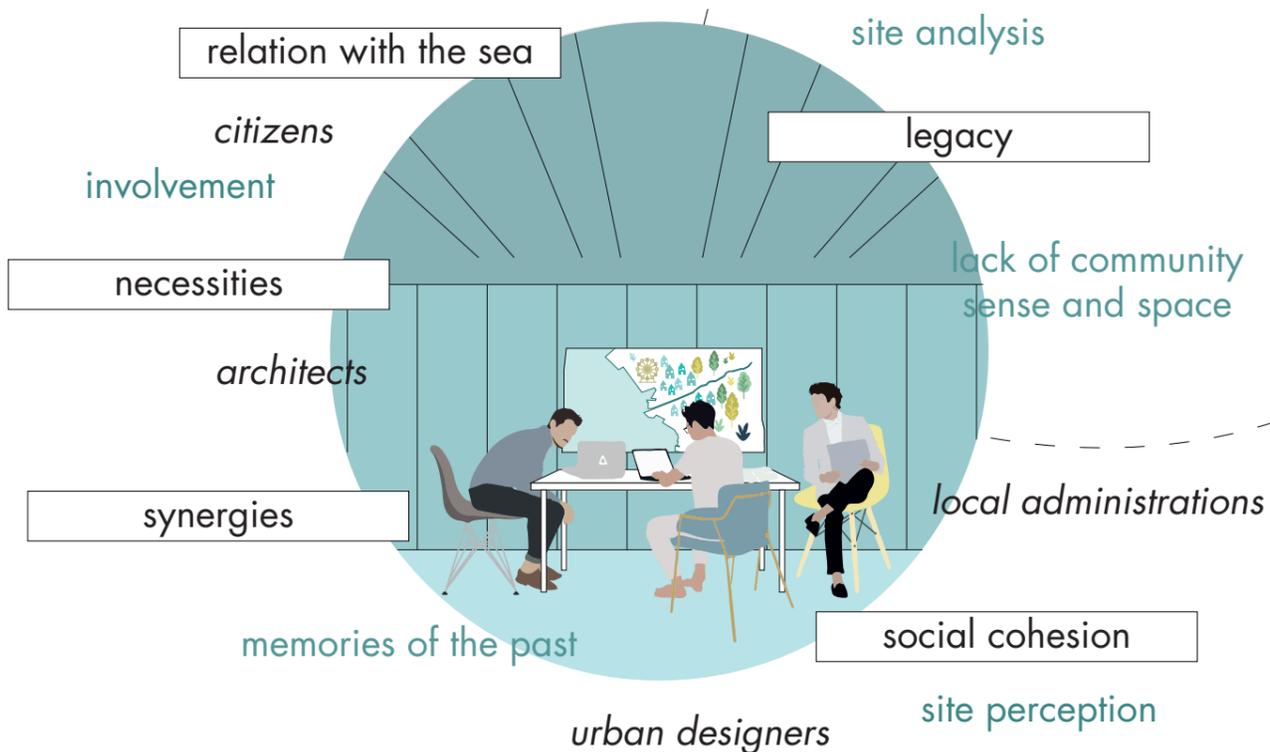
cultural activating modus operandi



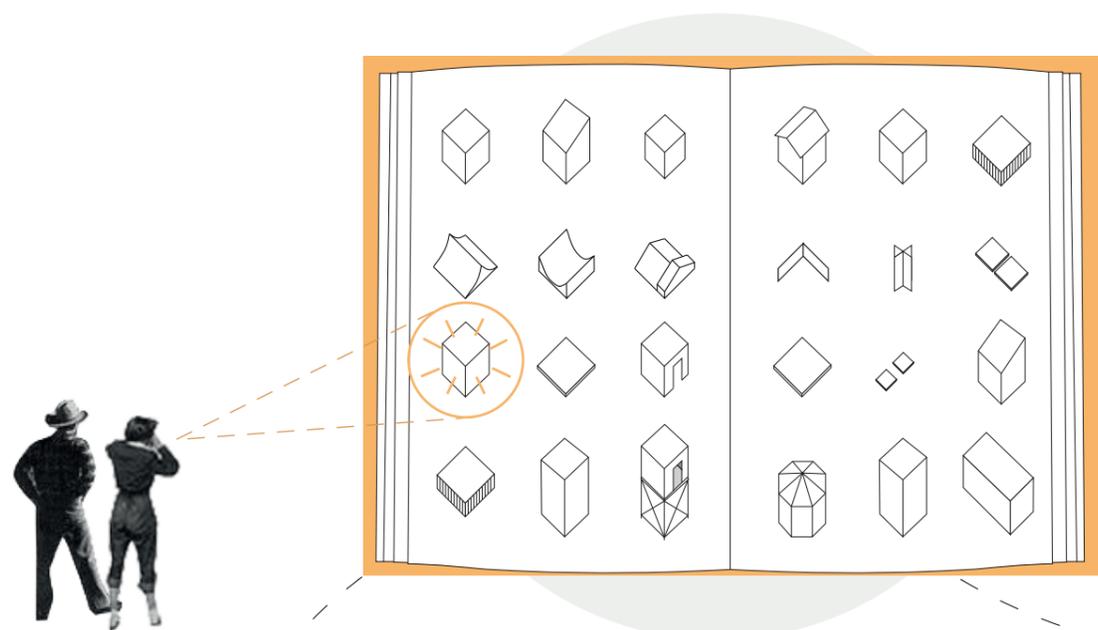
1_ ATTRACTION AND POTENTIALITIES



2_ INTERVIEWS AND WORKSHOP



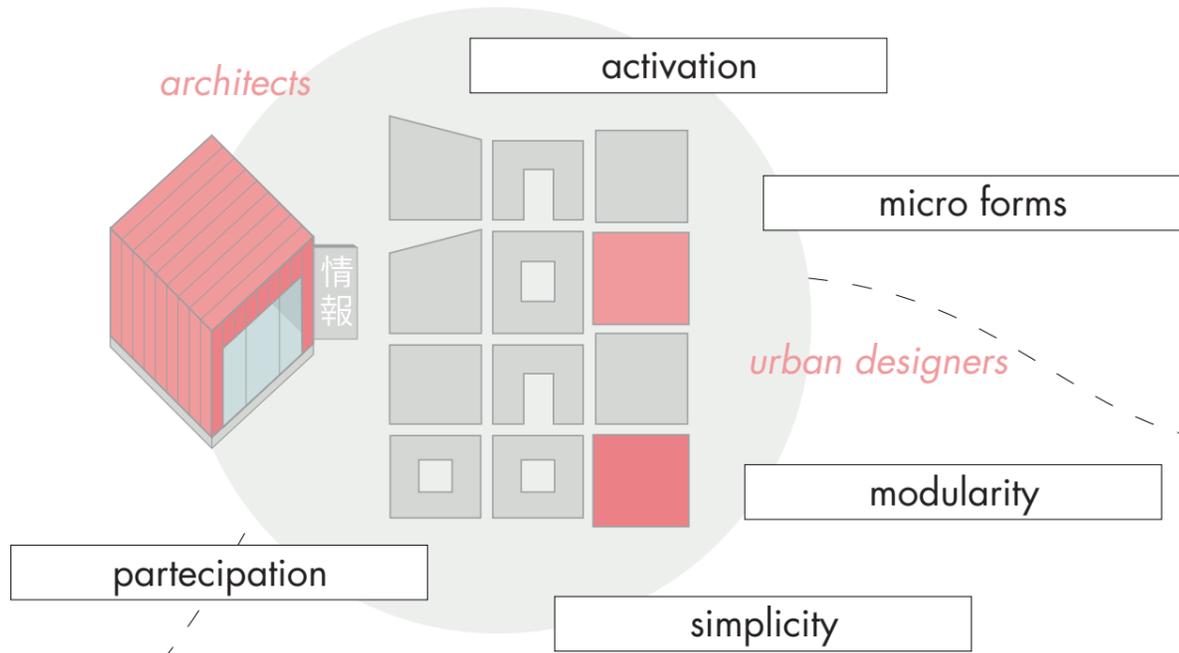
3_ UNVEILING THE MONUMENTALITY OF PROTECTION: A Landscape of Pet Architectures



through microforms of the use of infrastructures, *pet architectures*, this omnipresent "continuous monument" upon the Japanese territory is reactivated, linked and customized to the local community needs, in an unveiling process of its potentiality



4_ CONSTRUCTION



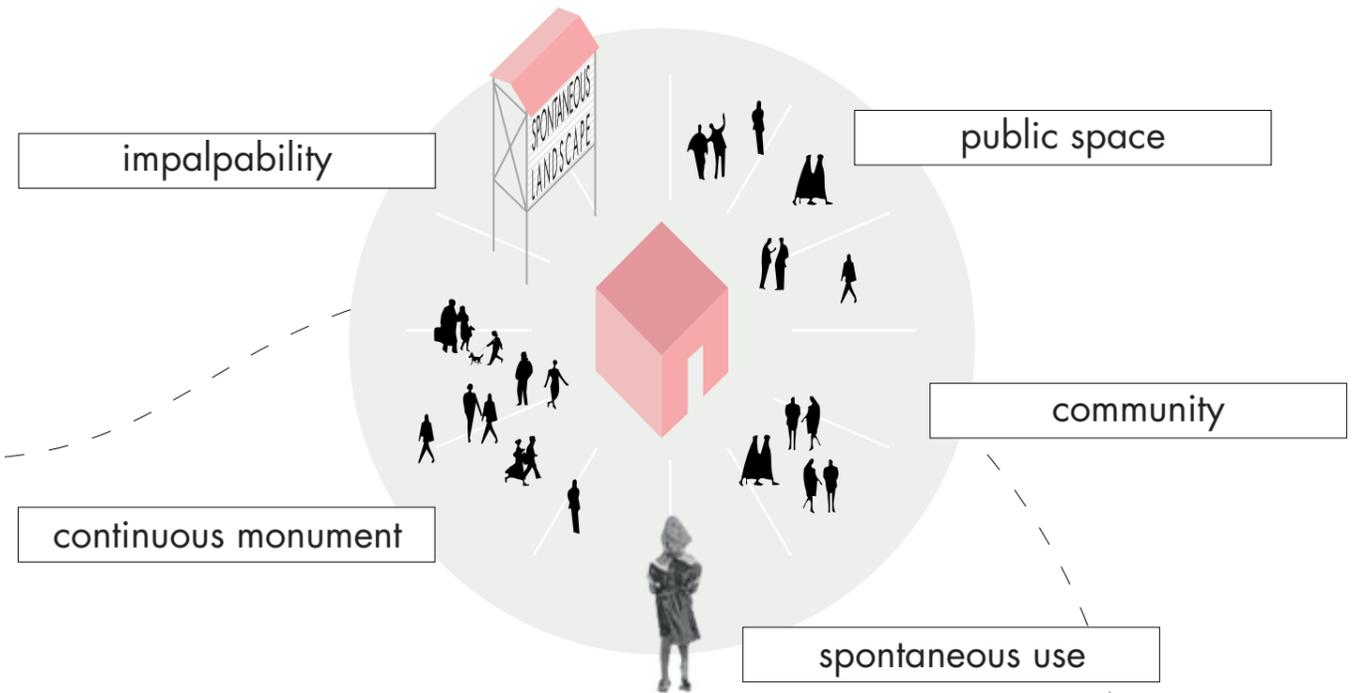
all sites remain open to further developmen-
ts, towards more permanent forms of settle-
ment or in the direction of a full activation
of the infrastructural system

7_ FUTURE DEVELOPMENTS

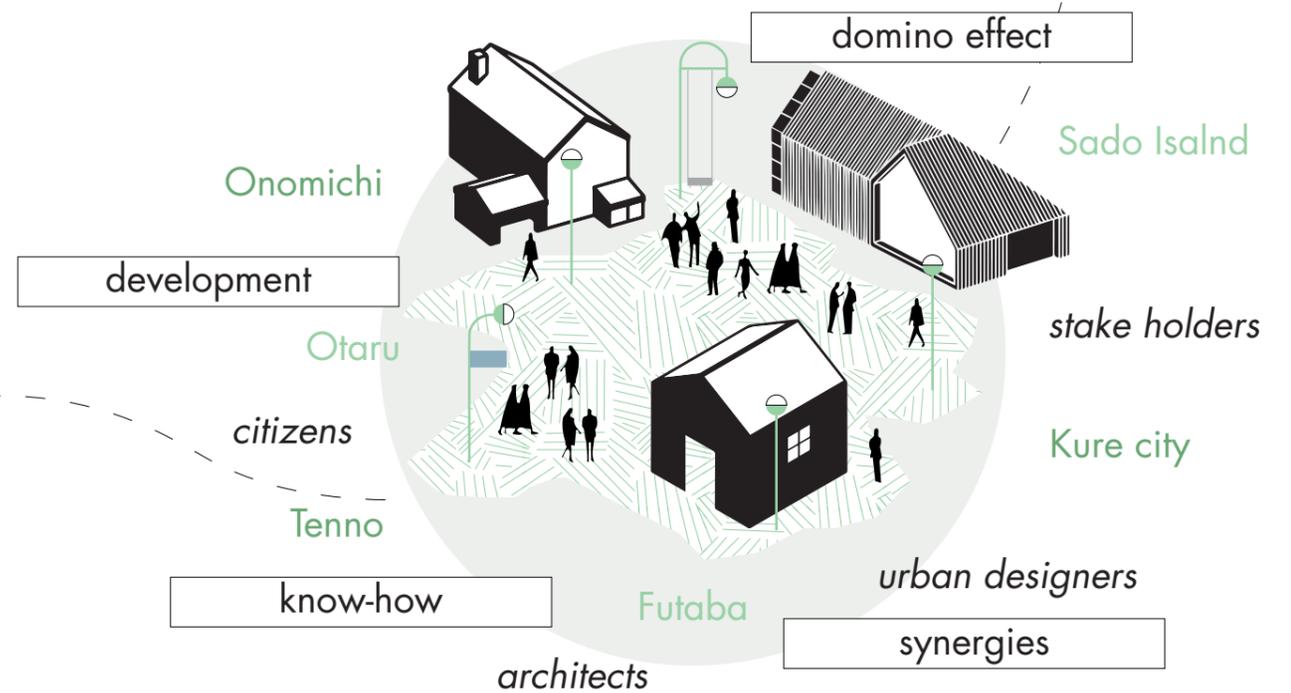
this landscape of *pet architectures* inherits a set of typo-
logies of infrastructure, a set of clusters of action, a pre-
cious tool to keep designing the *behaviorology*, the com-
plexity of the relationship with the infrastructural legacy,
the sea and the urban fabric, in the upcoming years



5_ ACTIVATION OF THE INFRASTRUCTURES



6_ DRIVER FOR NEW DEVELOPMENTS



Unveiling the Potentiality of Protection

"Freeways are the cathedrals of our times."

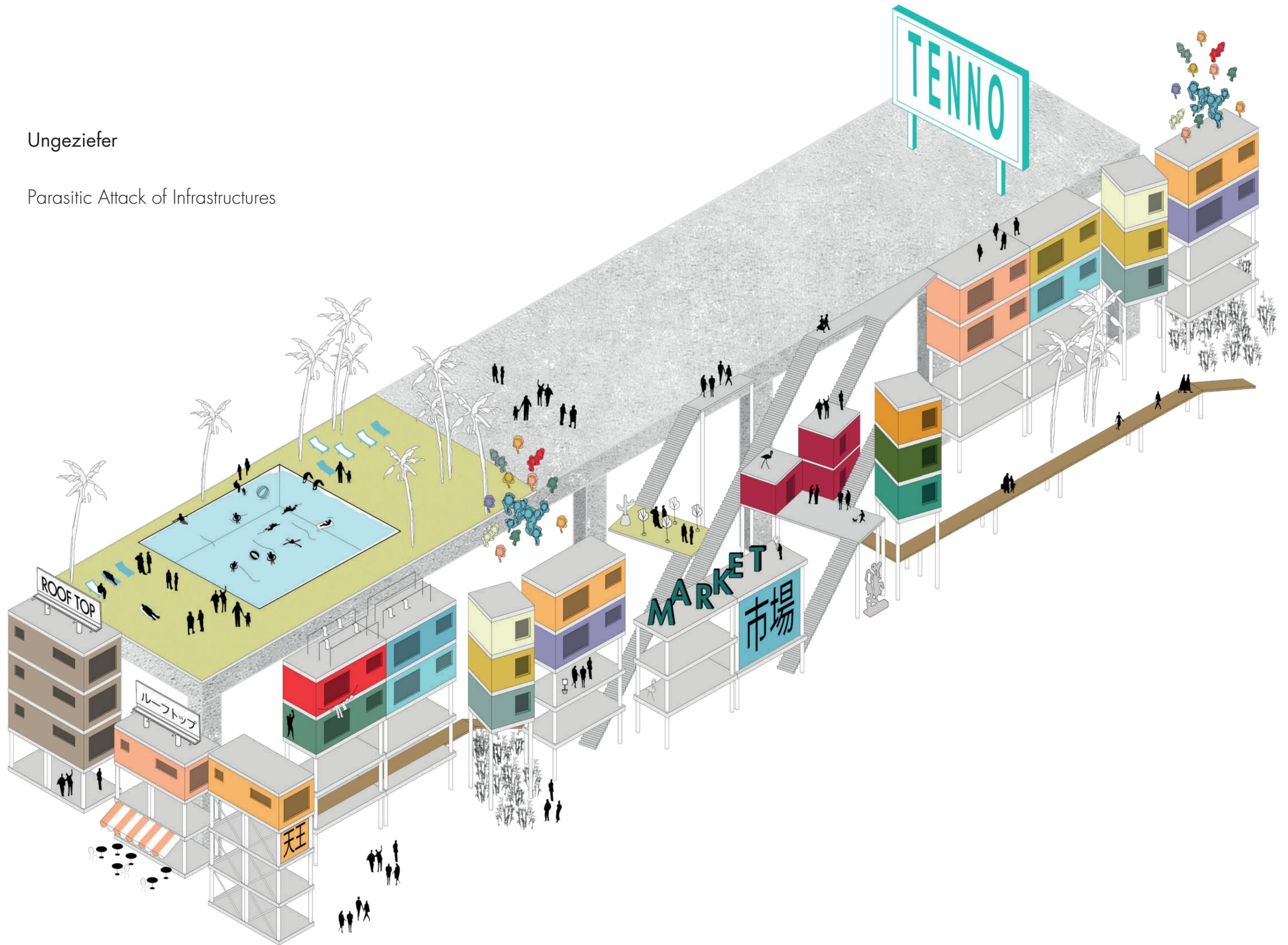
_ David Byrne, *True Stories*, 1986.

Is the infrastructure the whole of the electrical, hydraulic and functional systems for the life and livelihood of the human environment or is it the true lifeblood of the space we live in?



Ungeziefer

Parasitic Attack of Infrastructures



DESIGN APPROACH

The infrastructural system facilitates and allows the fluid circulation of objects, people, ideas and information. If on the one hand this system has a strong engineering to guarantee a series of functional characteristics, on the other hand this network is the decisive basis for buildings, cities, metropolitan areas, nations, the basis of contemporary globalization.

These great founding systems, even though they have a pre-eminent role in the creation and development of contemporary society, often remain unnoticed, with an almost indifferent attitude that leads the everyday life of cities to ignore them, leaving them as a backdrop.

They are often the result of laws, parameters, generic protocols that do not take into account local specifications and possible environmental consequences. Omnipresent and anonymous, they are common and obvious in the contemporary urban landscape.

Infrastructure, in fact, could be considered an underlying urban logic that perpetuates uncontrolled, independent production and consumption conventions.

Japanese society has experienced decades of "conflict", hybridization between architecture and engineering, in which the cross between them has usually taken over. The importance of the engineering approach has meant that the economic-industrial development of the country has been sudden but, at the same time, has been put before the environmental and historical-cultural protection, before the preservation and enhancement of the architectural and artistic heritage.⁴

The same questions, posed in Europe since the 1950s, have given rise to the formation of various avant-garde movements. As far

as the approach to infrastructure is concerned, among the most interesting are those of Superstudio and Archizoom, already mentioned, and of Yona Friedman, who theorises the concept of "mobile architecture" from which the concept of *ville spatiale* springs.⁵

In the case of the former, architecture is intended as modular (but not standardized), incremental, customizable, easy to implement from both a technical and economic point of view and, most importantly, built with the ultimate goal of the "happiness of citizens", through the awareness and achievement of their needs.

From this concept and its application on a large scale, the *ville spatiale* is created: a mode of urban planning that provides for the minimum intervention and the minimum demolition of existing buildings, going to maintain the local identity and increasing it. In order to make this possible, the city is provided with a structure, the "skeleton", which performs the tasks of grid and guide for future expansion, in which the city can expand with many degrees of freedom. According to this concept, a winter plan and a summer plan should be envisaged, related to which many structures are converted, adapted, changed, and, moreover, an interconnections plan is designed, which will allow the citizen to be in physical or potential proximity to the community centre, the services, the other inhabitants.

"Imaging a beach as a macro structure (the skeleton) and the people going to the seaside that implant themselves in the sandy surface as plug-in. Putting the towel or the umbrella in the sand is the same that playing with the structure of the skeleton, where you can move buildings or structures, but easily as towels at the beach. But how would be possible for people to act actively in the process? They should be

able to improvise architecture, new kinds of spontaneous city, and the city shouldn't resist the actions of the inhabitants.

Architecture is something always in progress, in a process of creativity and evolution, never in a final stage!"

_ Yona Friedman

Friedman, in an overall reasoning that from the infinite scale of the American metropolises where the car is the means through which it is possible to carry out private and collective actions, from a progressive and totalizing standardization, consequence of the modern movement, proposes a more "local" dimension of the spaces, in which he tries to design a selfmade architecture, flexible and scalable in a free way, inserted in an urban space that is the blank canvas on which the citizen can leave a mark.⁶

Through the previous analyses it can be seen how Japanese society strongly lives these contrasts, contradicting itself between two extremes of maximum control on one side and on the other a shameless spatial composition that creates unexpected spaces in the extreme density of the built environment. It is therefore potentially highly receptive to this type of urbanity, which is more fragmented, temporary and spontaneous.

In the Japanese context, however, it is not necessary any superimposed structure, being the infrastructural system already a blank canvas where to take actions and "colonize" the empty space with acupuncture interventions due to an activation of the infrastructure itself.

Faced with difficulties in dealing with sustainable practices on a global scale, infrastructure must be seen as a key to reorienting our ways of inhabiting the

globe, making it not only a means, a instrument of utility, but responsible for distinctions from a contextual, social and cultural point of view claimed as a community resource of primary importance.

In order to make possible the triggering of these dynamics, first of all, there must be a revelation of the potential of these structures, as a useful element in an ecology of interrelationships vital to furthering life. The reactivation and redesign of infrastructures is an unusual, unused road, even if it hides a great potential.

"Discovering that there is no relationship between space and its use, identifying the separation of the two parts, means expressing one's critical attitude towards architecture that refuses to accept any 'vital' aspect, reducing itself to 'monumental' structures that are not able to contain the dynamics of human relations."

_ Ugo La Pietra

"I have always thought that a human being guarantees his survival through the modification of the environment in which he lives and works, not only but I have always believed that living in a place means being able to understand, love, hate, explore, etc.."

_ Ugo La Pietra

THE "VILLE SPATIALE"

LAST, BUT NOT LEAST, I GET BACK TO MY FAVORITE IDEA: THE "VILLE SPATIALE"

IT MEANS A PARTICULAR MIXTURE OF RULES AND IRREGULARITY

THE "VILLE SPATIALE" CONSISTS OF A MORE OR LESS REGULAR, RIGID SUPPORTING GRID: THE "INFRASTRUCTURE"

WITHIN WHICH INDIVIDUAL HOMES ARE INSERTED FORMING AN IRREGULAR PATTERN

AS FOR THE SHAPE OF THOSE INDIVIDUAL HOMES ANYTHING GOES

THUS THE "VILLE SPATIALE" IS A "MERZSTRUKTUR" AT URBAN SCALE FOR A MASS-SOCIETY CONSISTING OF INDIVIDUALISTS

THIS IS OUR SOCIETY TODAY: A CROWD

I DO NOT KNOW HOW A "VILLE SPATIALE" WILL LOOK

IT CAN BE THIS

OR THIS

OR THIS

OR ANYTHING ELSE

THERE IS NO GRAMMAR TO THE "VILLE SPATIALE" EXCEPT RESPECT OF DAY-LIGHT

IT CAN LOOK AS WELL AS THE CITY YOU LIVE IN

OR IT CAN BE COMPLETELY UNLIKE TO ANY CITY

IT CAN NOT BE PLANNED, IT CAN ONLY HAPPEN

DESIGN ACTIONS

"Ideally architecture is not about fixing activities, fluxes or programs, or worse, about solving spatial problems. On the contrary, it is about opening up possibilities: the potential of a site, the hidden opportunity of a particular situation in time, of a programmatic conflict. It is about dealing with uncertainty, about enabling different and unforeseen scenarios."

_ Xaveer De Geyter

The type of urbanity proposed by Friedman, however, can only be taken as a reference at a conceptual level and not practical or applicative, for the enormous difference from the urban carat between Japan and the Western world, with which the architect is confronted.

Through the securing of the country and its consequent infrastructuralisation, in fact, the defensive system has established itself as a continuous monument, omnipresent on Japanese soil. A continuous monument but also a barrier, which has made the landscape fragile, discontinuous, fragmented and fragmentary. This system, however, is in the same time a blank canvas, an instrument of order, a guarantor of formal balance, a potential void, missing in the Japanese urban fabric.

In architecture, the figure-background relationship is nerve-wracking and this imposing and vast system of infrastructures has the prerequisites to be the basis for a new type of architecture. At present, the material consistency of the space, halfway between architecture and engineering, does not have an intrinsic value of its own, but it is like a homogeneous and widespread white canvas, like a hybrid artifact. A landscape of passage is generated, in a condition of continuous periurbanity, where being outside the dynamics properly

related to large urban centers is in itself a degrading condition, in socio-economic, cultural and service levels.

This "continuous monument" is redesigned as a contemporary Zen garden made of pop-up micro architectures. The Japanese landscape, in fact, is typically designed and influenced by individual architectures, unlike the typically European large-scale urban planning that then defines the dogmas of individual architectures.

From this awareness comes the term "*pet architectures*", coined by the studio tokyota Bow Wow, defined as "*byproducts of urban development*", fragments escaped a planner's perspective, all-inclusive. It is only through abandoning this large-scale approach, in fact, by focusing on specific spaces, that one can record and appreciate the richness of the spontaneous practices active in the city, to make them an inductive and inclusive element of future projects.

It is not the compositional or technological spectacularity of the micro architectures themselves that is important, but the more it reveals and enhances the void, giving rise to what is defined as *void metabolism*, keeping together the relationship between man, space, architecture and the environment, defined by Bow Wow with another neologism *behaviorology*. This syllogism is rooted in a hierarchical approach to architecture, focusing on the functions and location of micro forms of architecture rather than their dimensions. Small but crucial, simple but effective.

The small size of the same, *smallness*, should not be perceived as a limit, but as an opportunity, to simplify, select practices and programs that can accommodate human actions. Moreover, this implies an inevitable opening towards the outside, involving the context of "emptiness" in which they are placed. Through the outplacement of supportive actions, the small

architecture define, enhance and engage a space that is way beyond its actual dimension.

These micro forms of architecture, points strategically placed, exceptions in a homogeneous space, are able to activate the "potential void" of the defensive infrastructural system, giving space to some spontaneous actions that already take place on these areas or at their margins and suggesting further ones.

The articulation of the design action takes place through a cultural approach. The first stage of analysis corresponds to the metric and photographic measurement of the infrastructures, subdividing them into different recurrent typologies: tsunami wall, retaining wall, reclaiming land, highway, railway, dam, station, bridge, parking.

After the study and the achievement of a situational and contextual awareness, workshops and interviews with the population, the government and the local media were organized. From the needs, perplexities, awareness, memories, needs that emerged, the basis for the compositional action was created. The main issues regarding the local population are, at first the total lack of community space, rather than the townhall, or an open public area, and then the huge change from the past related to the presence of the defensive infrastructure on the territory, that totally sovverted the *behaviorology*, the balance between citizens, nature and the urban fabric.

This landscape of pet architectures inherits a set of typologies of infrastructure, an almost infinite set of actions, a precious tool to keep designing the relationship with the infrastructural legacy, the sea and the urban fabric in the upcoming years.

There is no rigor, no grammar, no specific program. This new landscape that is to be generated is the basis for a potential rebirth of places on the edge of urbanity, without services, without support, without intrinsic value.

"It can not be planned, it can only happen."

_ Yona Friedmann

The design process, in fact, does not want to have the presumption of demonstrating the best solution or all possible design actions, but aims to unveil the potential of Japanese defensive infrastructure through micro conservative interventions, suggestions impose on the continuous monument.

Infrastructure as a White Canvas

*the relationship between architectural shapes and
their background colonizing the void*





Colonize the Void

Pierre Clément / This Account Has Been Suspended

A Landscape of Pet Architectures

micro devices of urban activation



Infrastructures Analysis



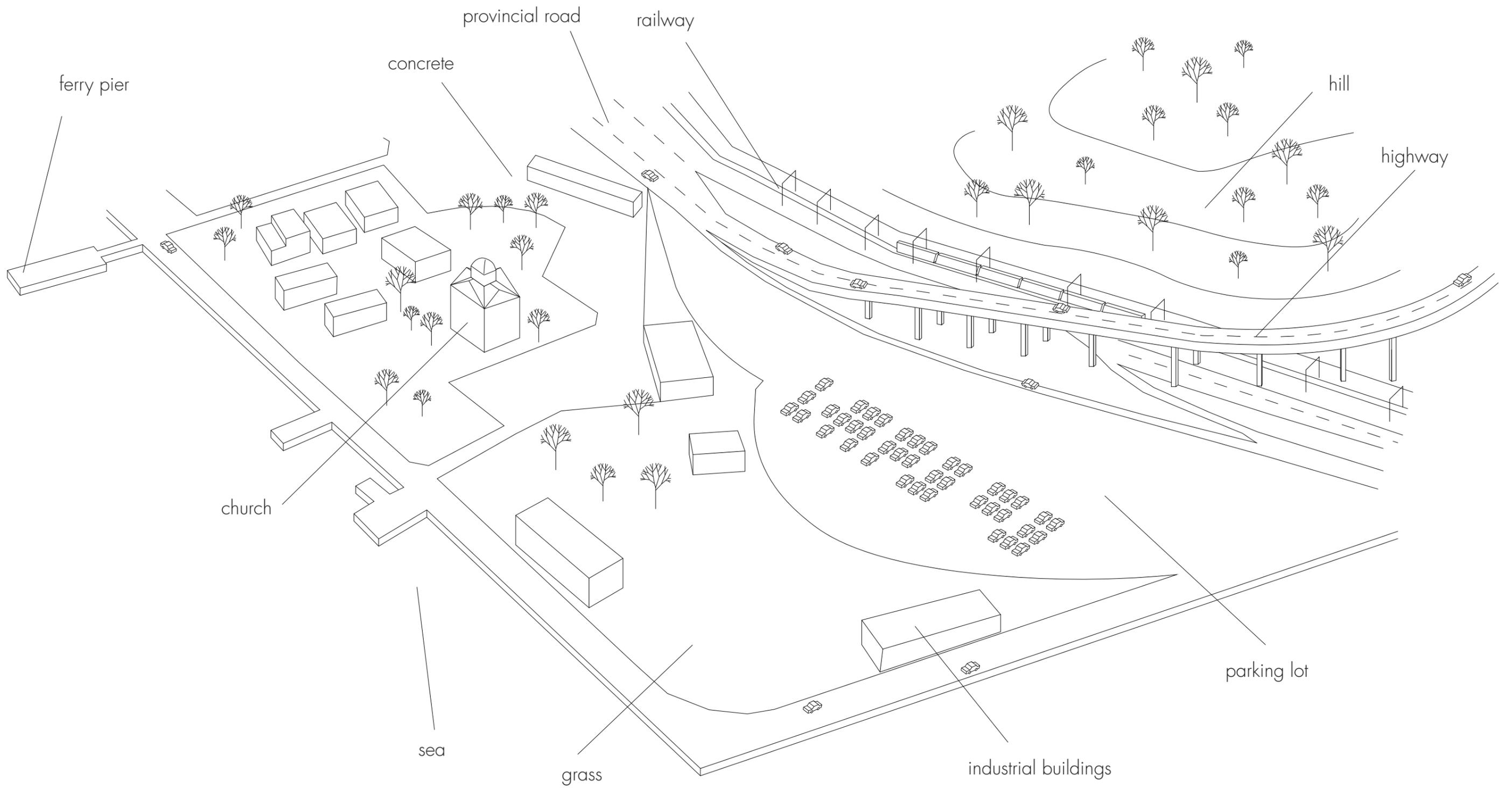
#1 reclaimed land, highway, pier

Tenno Portopia

function: park + (abandoned) productive site + highway + railway + station + parking lot
location: Tenno, Kure - shi, Hiroshima Prefecture

- _ next to portopia train station
- _ the biggest brownfield of the village
- _ all the building are abandoned but a "church" that hosts weddings





10: 30 parking lot



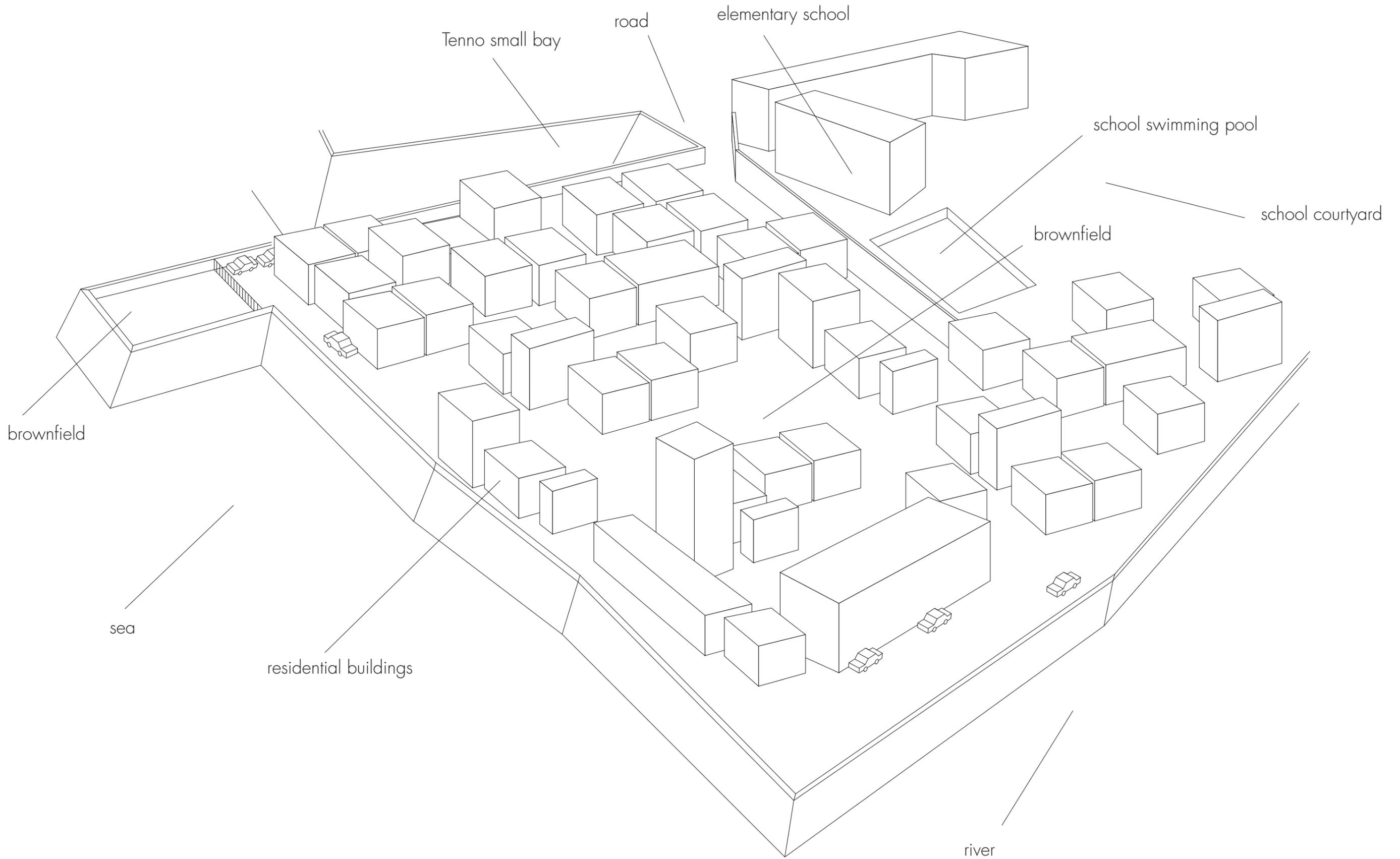
#2 waves wall, urban fabric

Tenno Coastline

function: (abandoned) playground + coast road + dense urban fabric + school
location: Tenno, Kure - shi, Hiroshima Prefecture

- _ next to Tenno centre
- _ coastline without any physical or visual access to the sea
- _ the school courtyard is not designed at all, and the lot is disconnected with the surrounding





*12: 00 the shade of the houses projecting
on the wave wall*



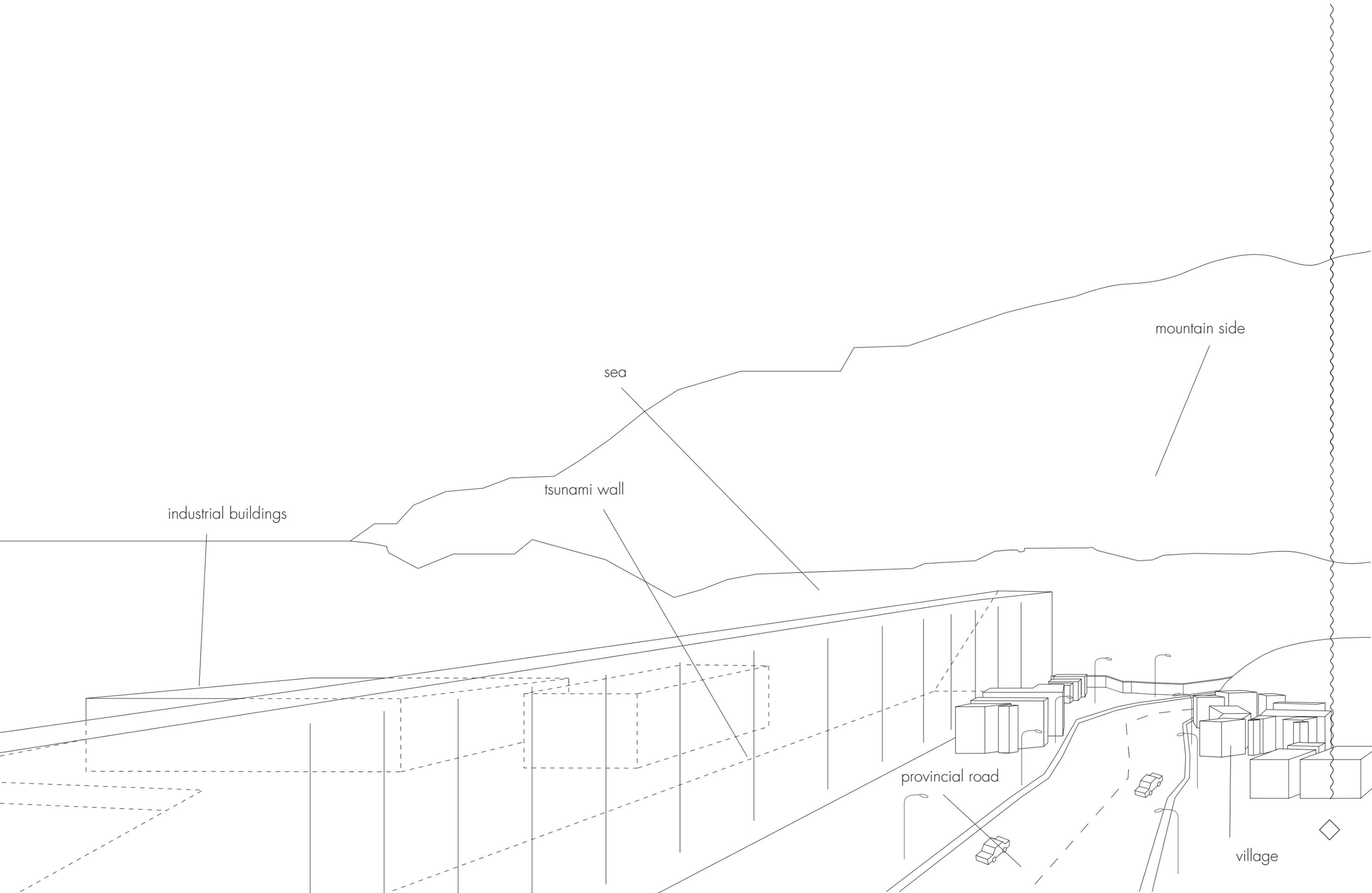
#3 dam, reclaimed land, tsunami wall

Miyako Port

function: industrial site + tsunami wall + provincial street
location: Miyako, Tōhoku Prefecture

- _ industrial area and residential one divided by the tsunami wall
- _ a sea visual from the village is not possible anymore because of the presence of the wall





industrial buildings

sea

tsunami wall

mountain side

provincial road

village

15: 50 the tsunami wall sahde over the houses



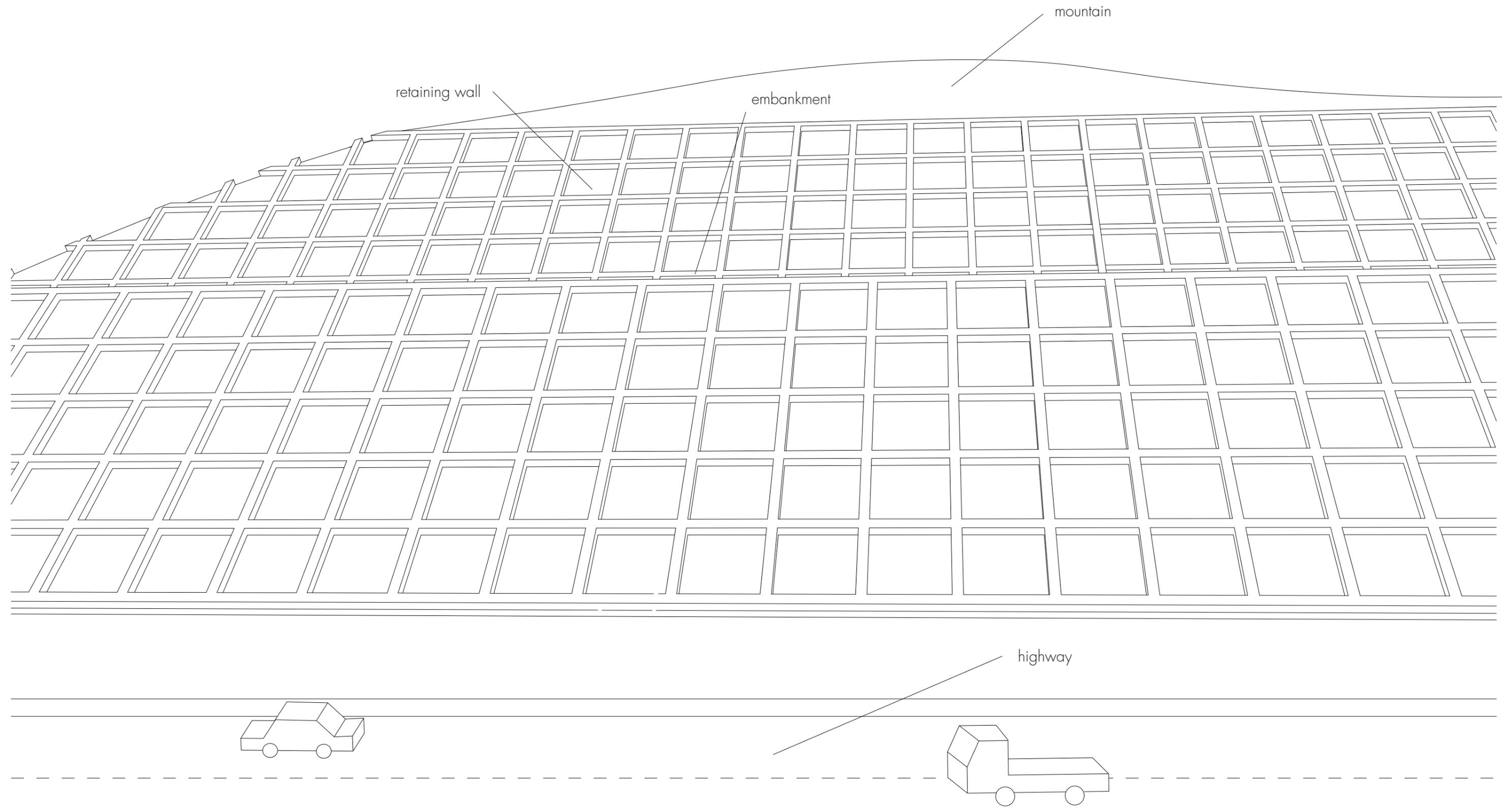
#4 retaining wall

Tenno Portopia

function: retaining wall + highway
location: Tenno, Kure - shi, Hiroshima Prefecture

- _ retaining wall covering the mountain on the back of the village
- _ different retaining wall one above the other





17: 20 retaining wall covering the mountain on the back of Tenno



Infrastructure Typologies

This thesis proposes a reflection on the metabolisation of infrastructures in the contemporary urban fabric. Each infrastructure corresponds to a fixed, peremptory action, a huge immersion of capital in the territory, modifying it in a way that is difficult to reverse. It tends to consist of a connection between points where, however, the interstitial space is often crossed in an indifferent way, going to redistribute and rebalance the values of the territory itself.

The restoration and recycling of infrastructure is a central issue in contemporary architecture. In this case, however, the angle at which the theme is approached is different: what happens when the infrastructures are necessary for the territory but their construction has gone to subvert the local equilibrium?

Thanks to the design action, architecture can be parasitically grafted onto large infrastructures, through flexible structures, variable in size and use, technically simple to create, designed with local materials and with the potential to be self-built.



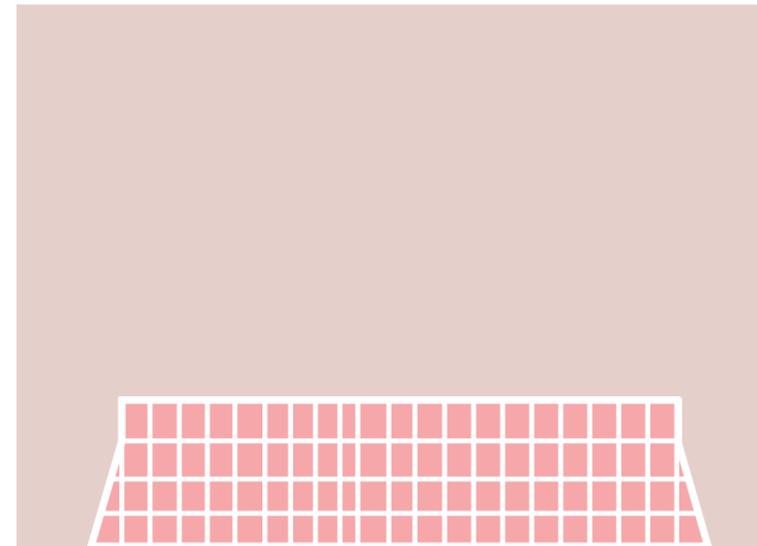
"It is a city like a dream: everything imaginable can be dreamed of, but even the most unexpected dream is a rebus that hides a desire or its reverse, a fear. Cities like dreams are built of desires and fears."

_ Italo Calvino

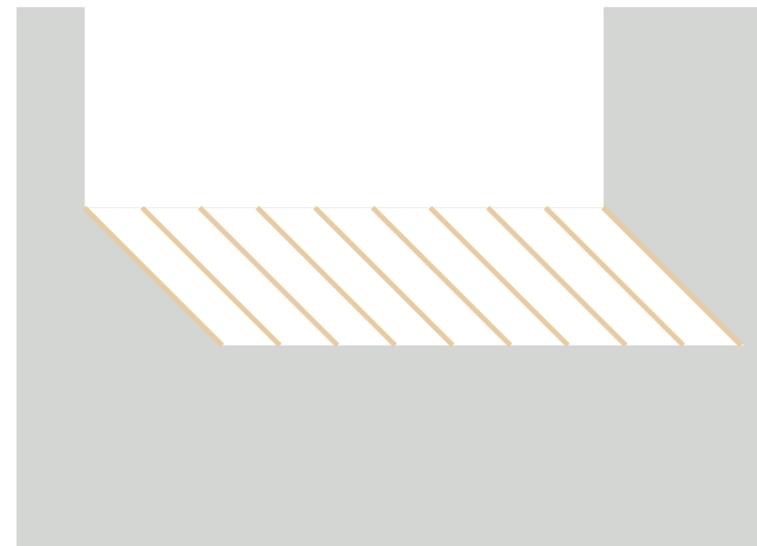
tsunami wall



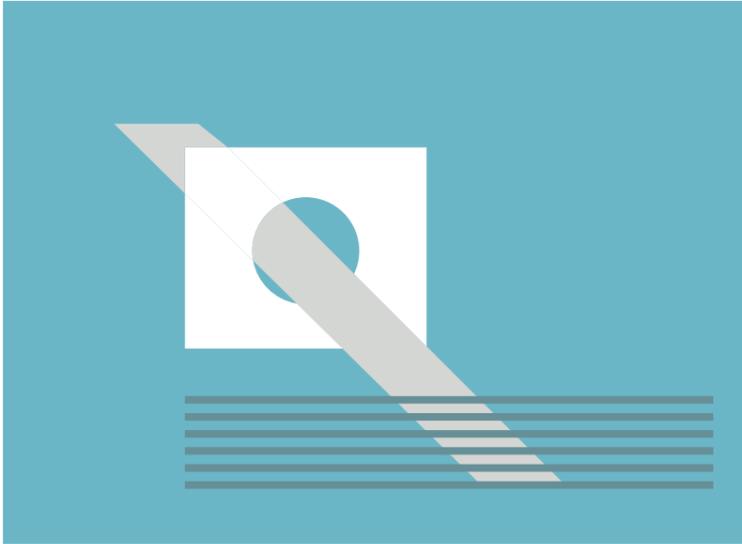
retaining wall



reclaiming land



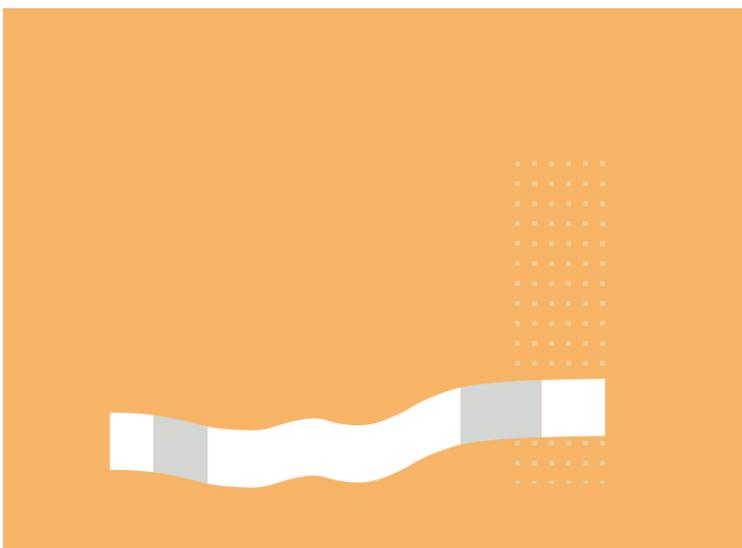
highway



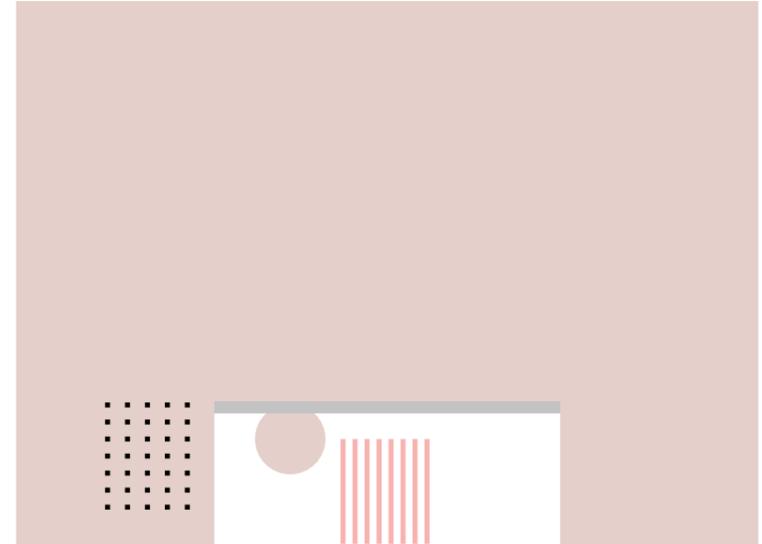
railway



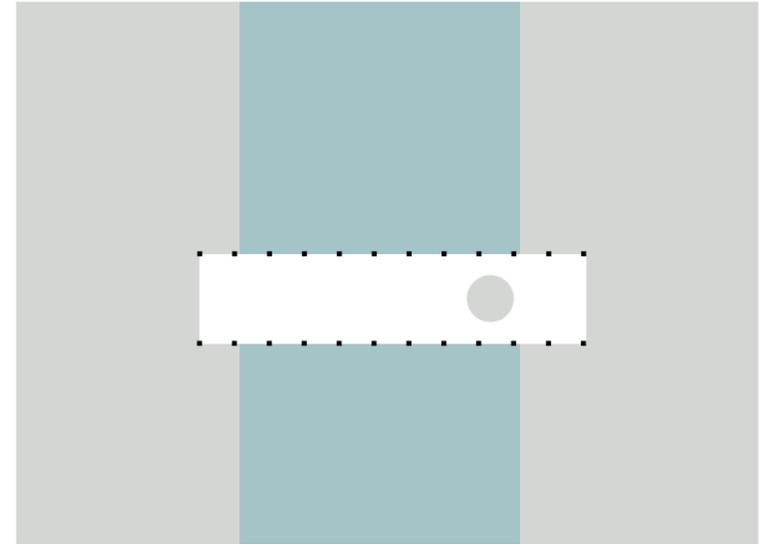
dam



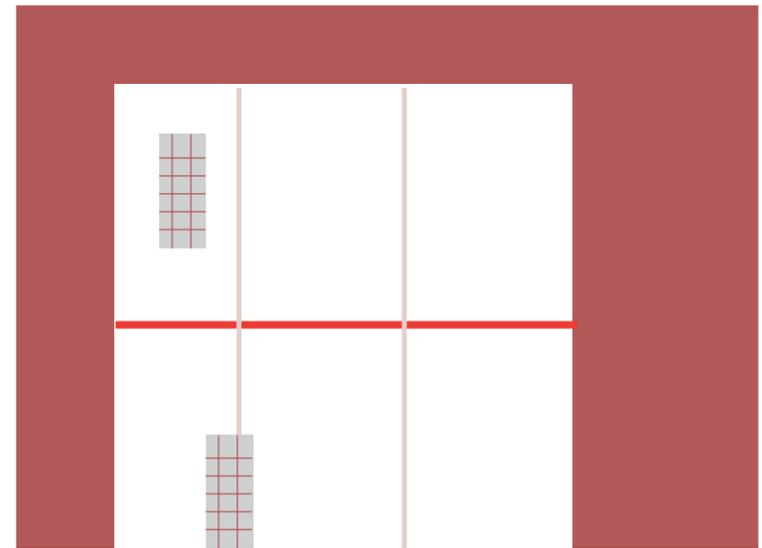
station



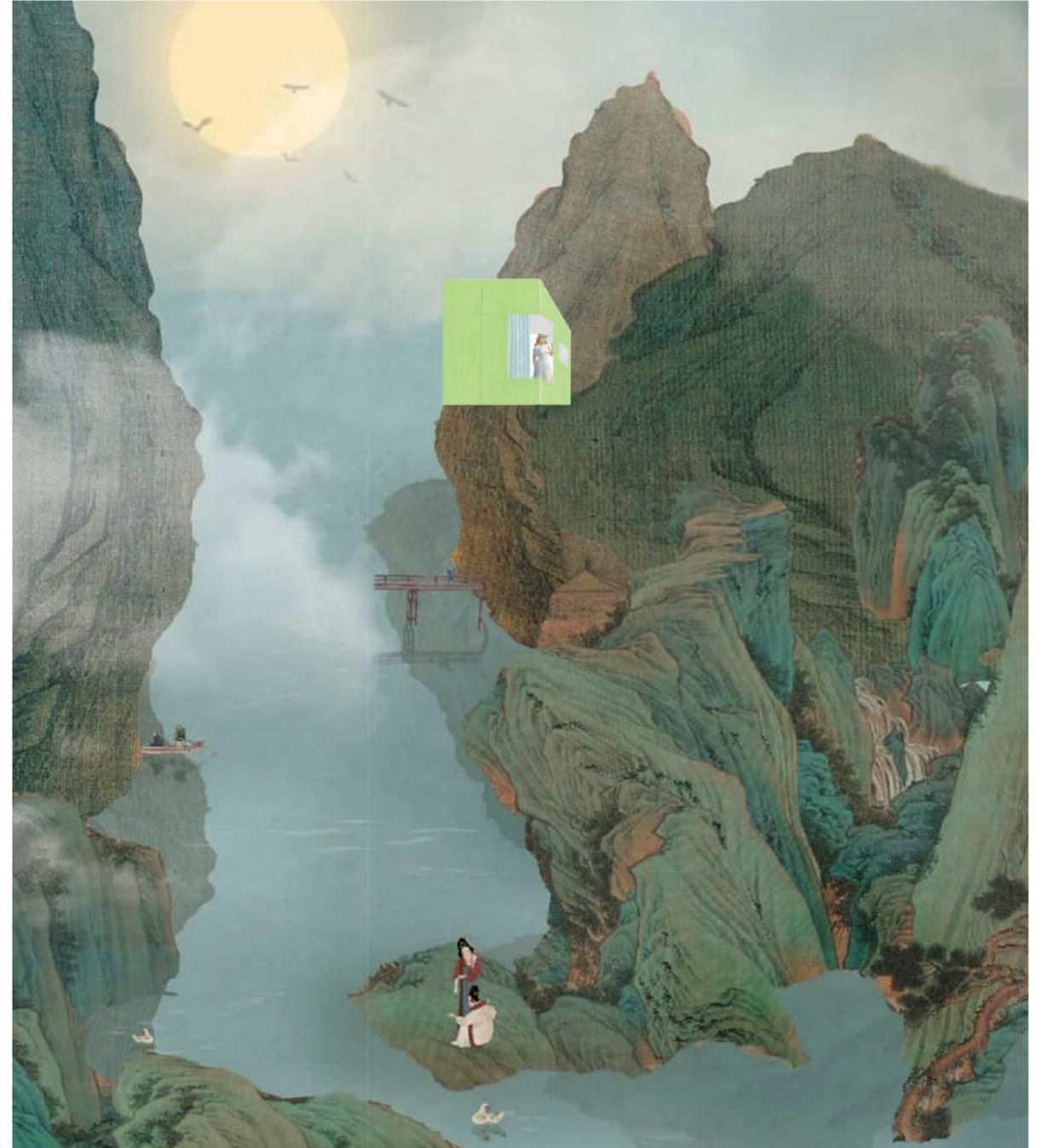
bridge



parking



A Landscape of Deliberate Architecture



#7

*Unveiling the
Monumentality of
Protection*

Pet Architecture

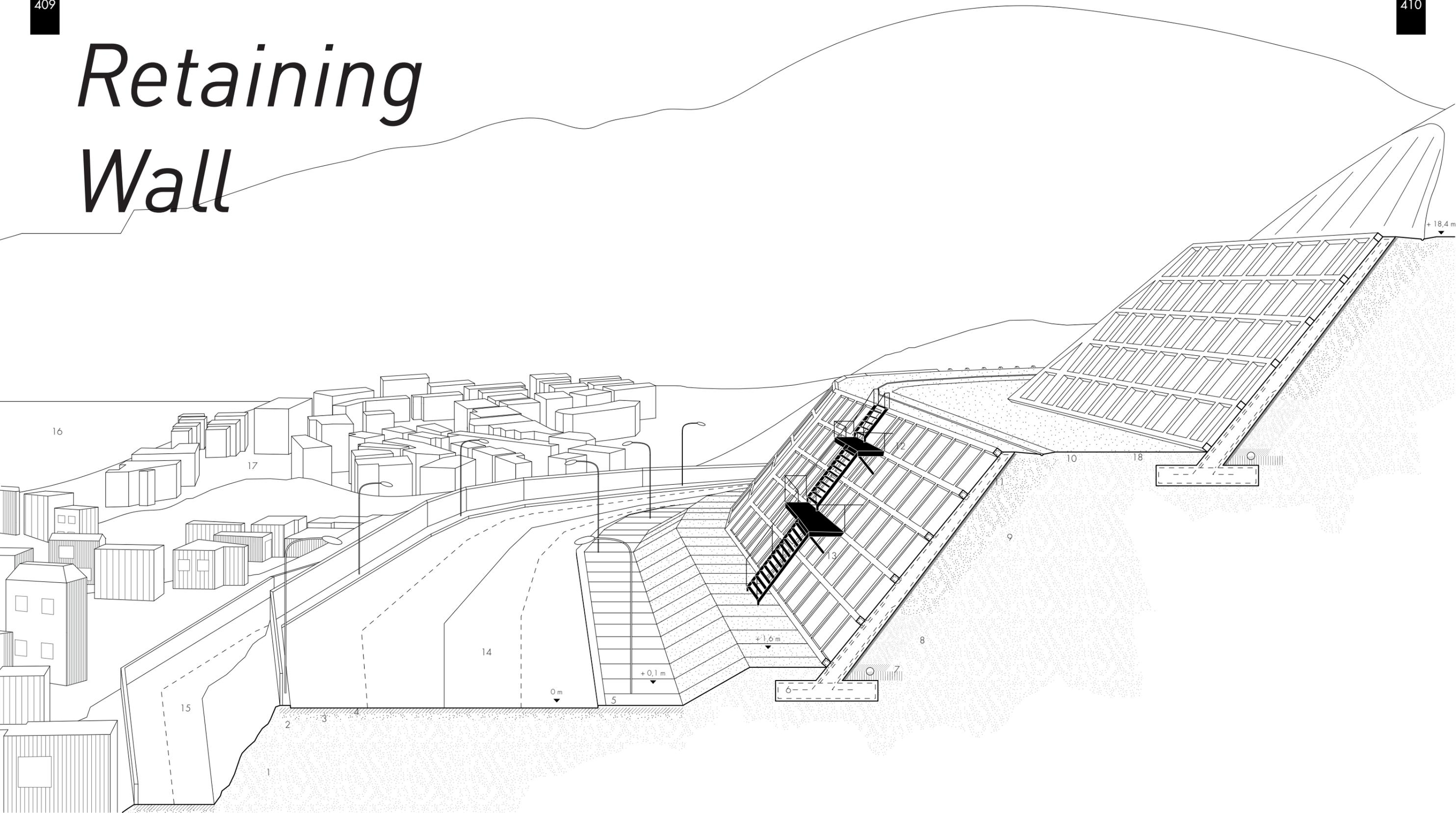
Akira Yamaguchi / Tokyo Urban Devices



The Japanese Infrastructural Network as an Urban Device:

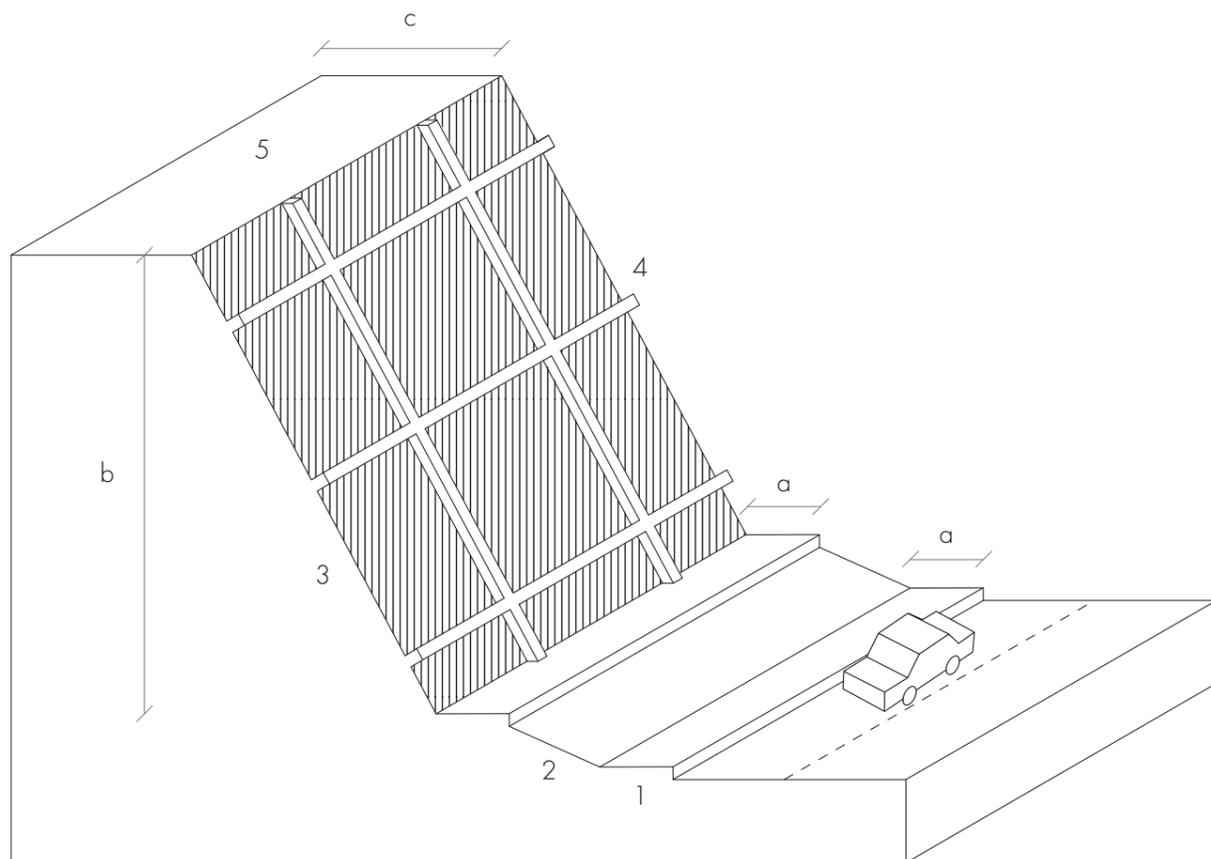
three examples of application

Retaining Wall



perspective section

1. compacted fill material, 2. draining bituminous conglomerate, 20 cm, 3. open bituminous conglomerate, for binder and basis, 5 cm, 4. close bituminous conglomerate, 5 cm, 5. sidewalk, 6. retaining wall, reinforced concrete, 0,5 - 1 m x 8,5 m, 7. perforated drainage pipe, 8. small drainage material, 9. wide drainage material, 10. drainage channel, 11. protective surface, 12. retaining wall grid, 13. steel stairs, 14. highway, 15. local road, 16. sea, 17. village, 18. embankment.



barrier

infrastructure as a barrier, a fracture between city and natural/environmental context

retaining wall average composition

1. sidewalk + horizontal concrete platform, in order to create a separation between the road and the wall, 2. inclined wall, on average height around 1,5 - 2 m, 3. inner part of the wall, inclined reinforced concrete surface, retaining the mountain and creating an embankment, 4. retaining wall frames, made by a reinforced concrete grid, with variable section and height, 5. embankment, variable depth, usually the proportion is around half of the length of the wall.

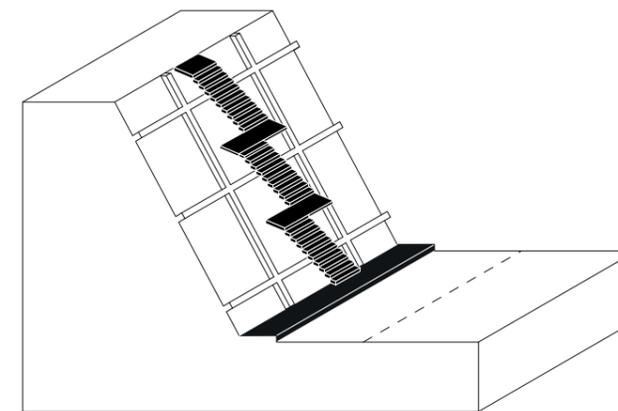
average scale proportions

$$8 < a < 14$$

$$c = b/2$$

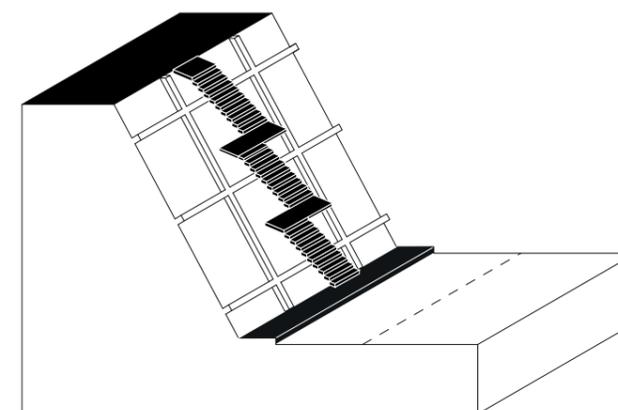
$$a = c/3$$

activating process



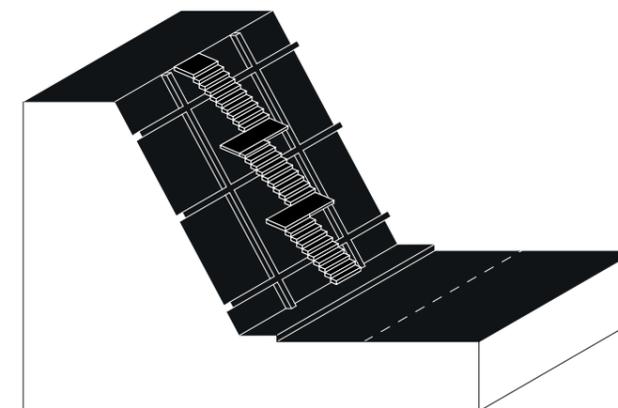
reaching the top

an outside staircase system hung on the inclined facade allows to reach the top of the wall, through different platforms as belvedere spots



lifted plaza

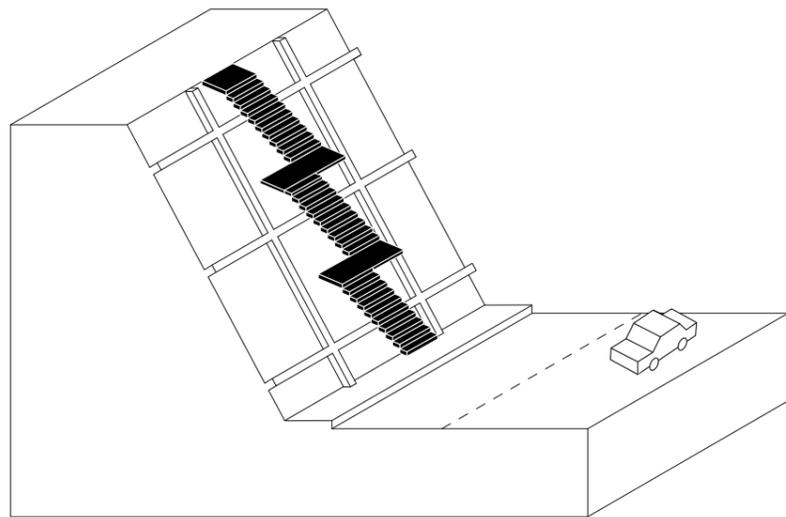
the embankment on the top of the retaining wall is designed as a lifted plaza, in order to activate also the horizontal surface for either private or public uses, as an urban garden, a place for events, restaurants, or simply a belvedere spot



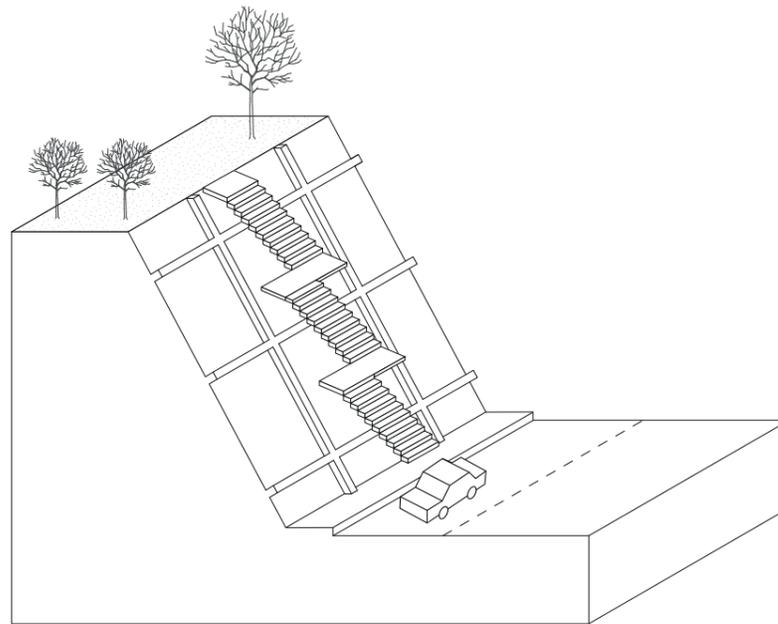
unveiling the infrastructure

through the unveiling of the infrastructure potentiality with the urban device, the space is connected with the urban area and the public surfaces of the city

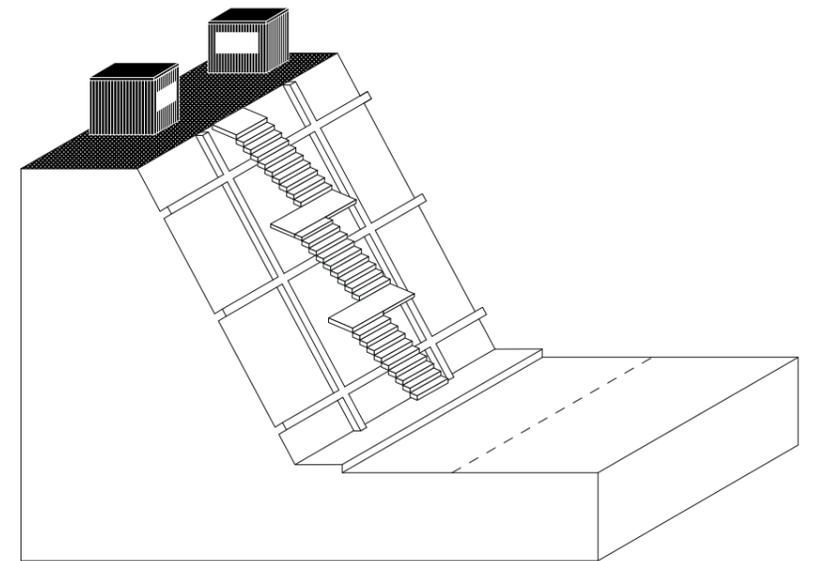
infrastructure as an urban device



A _ staircase



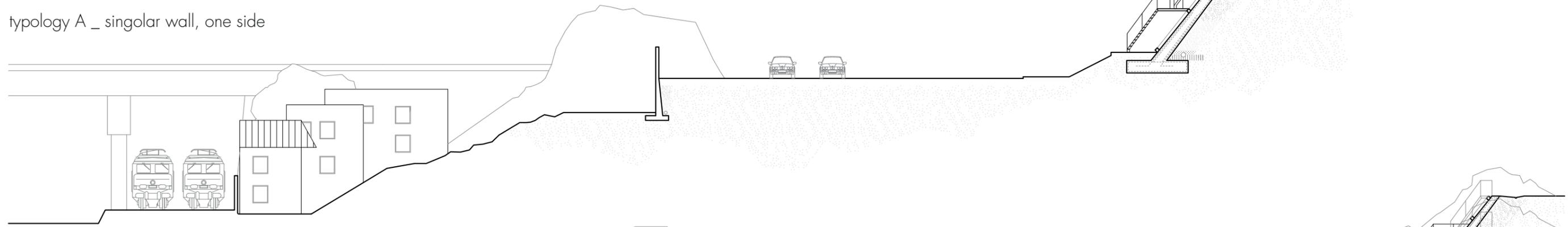
B _ stairs and elevated garden on top



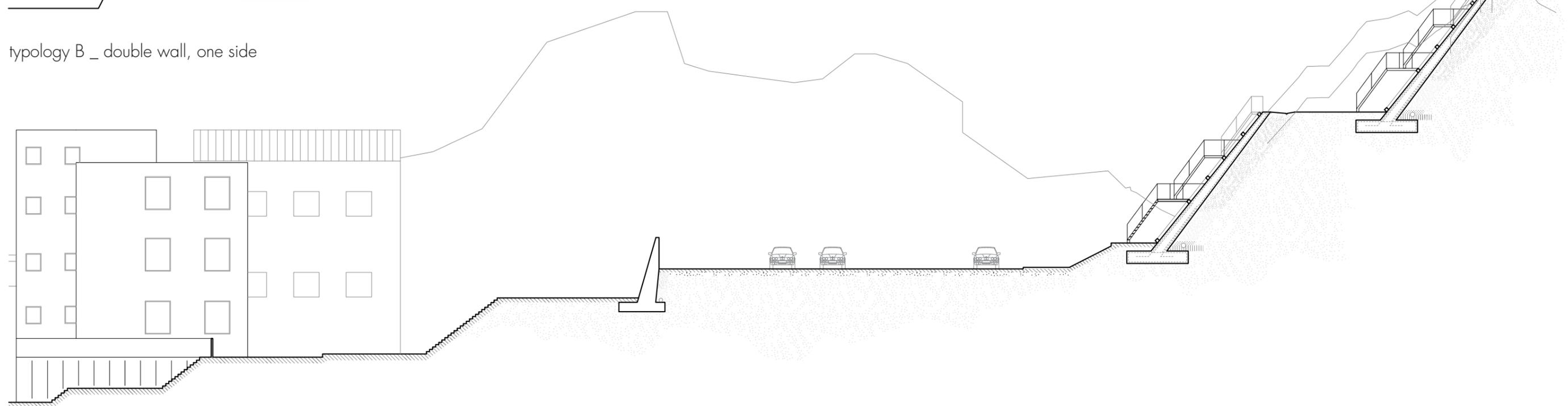
C _ stairs and elevated plaza with attractions on top

retaining wall typologies

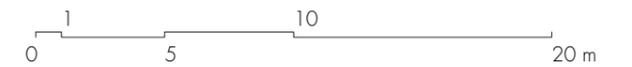
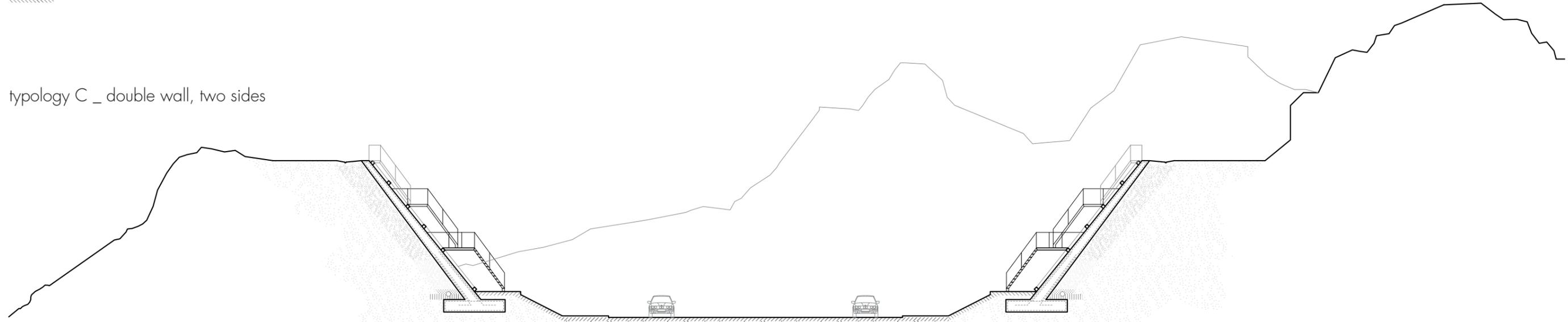
typology A _ singlar wall, one side



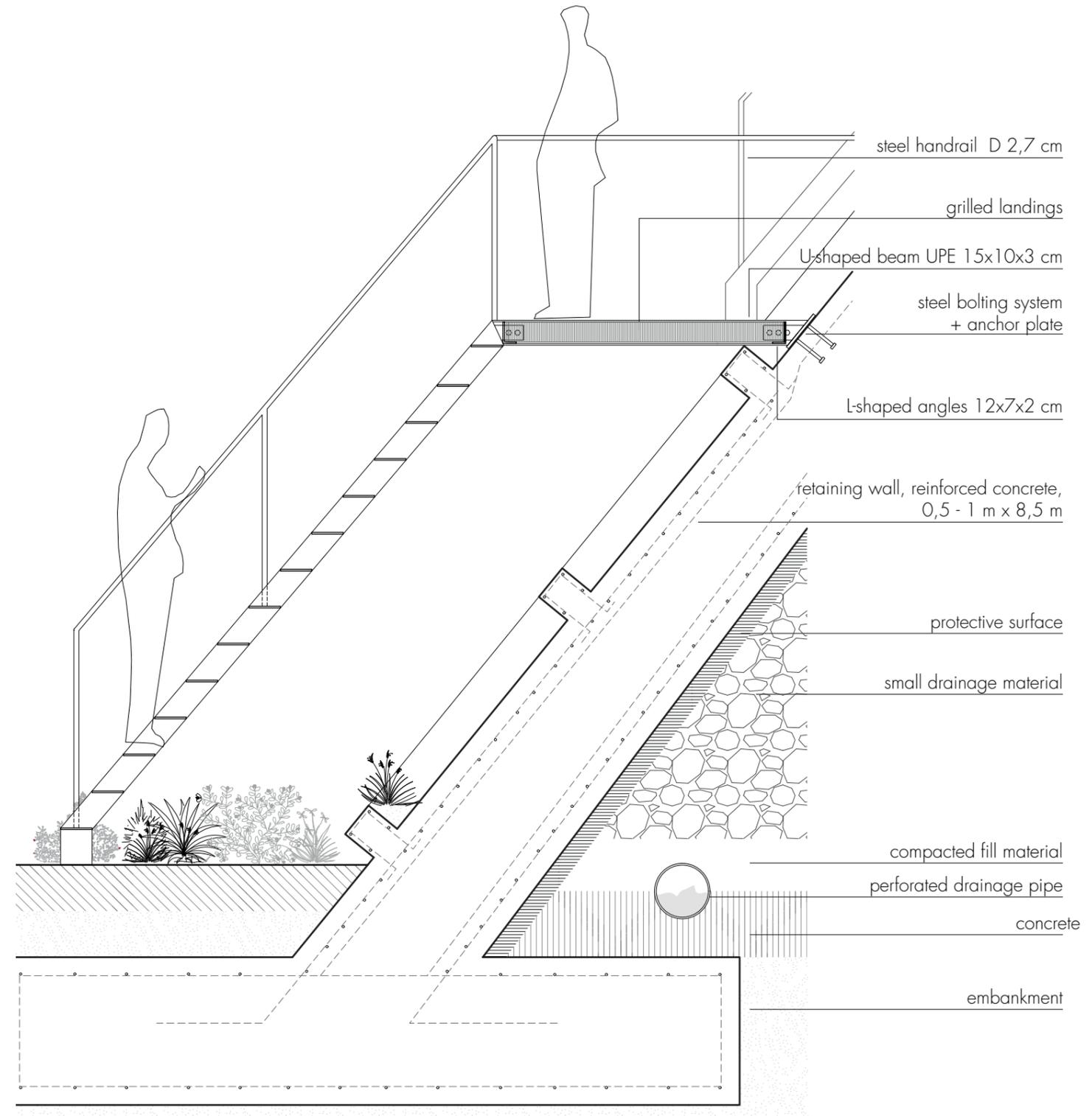
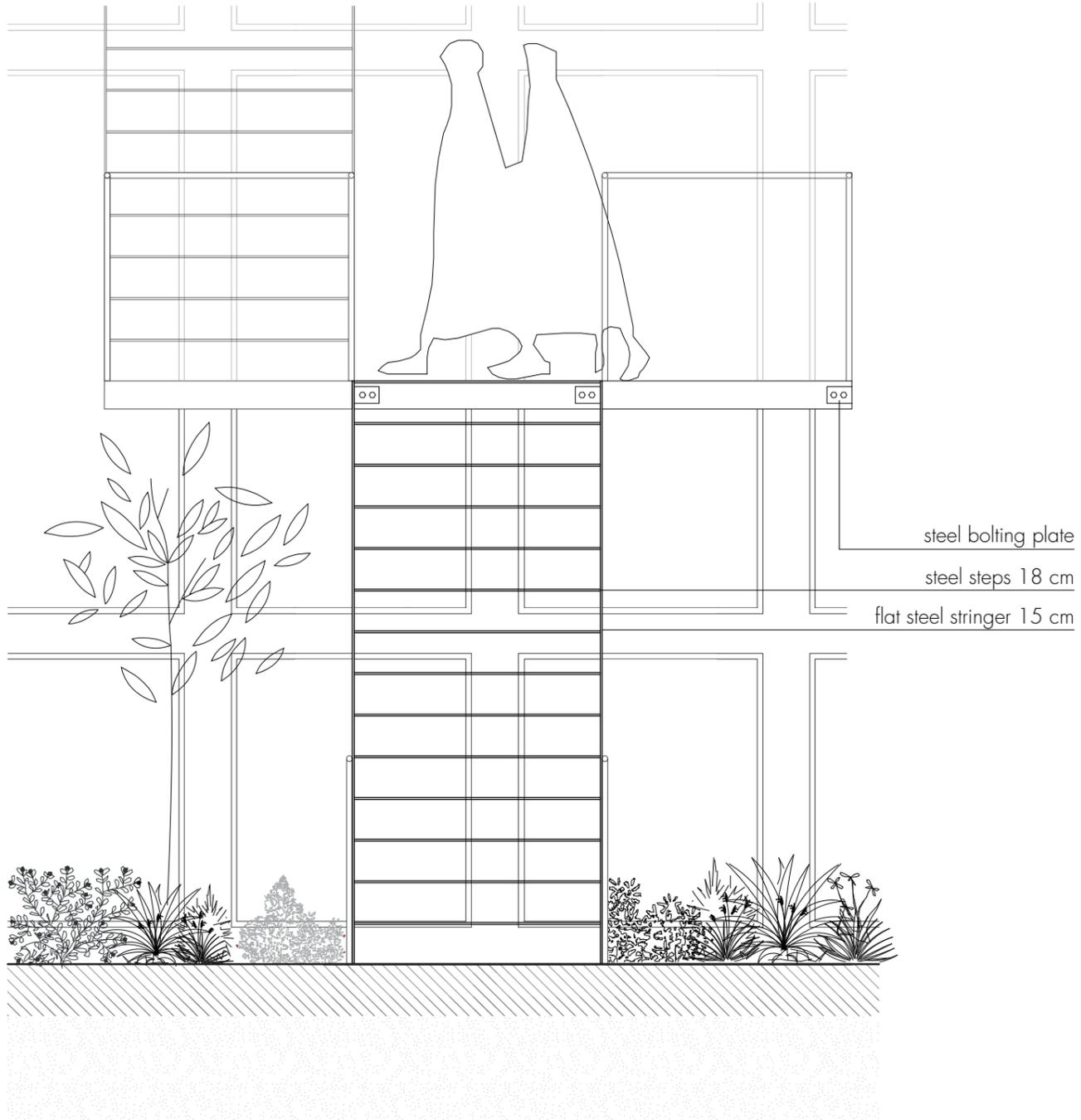
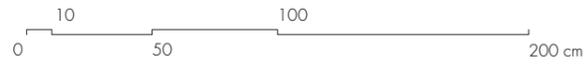
typology B _ double wall, one side



typology C _ double wall, two sides



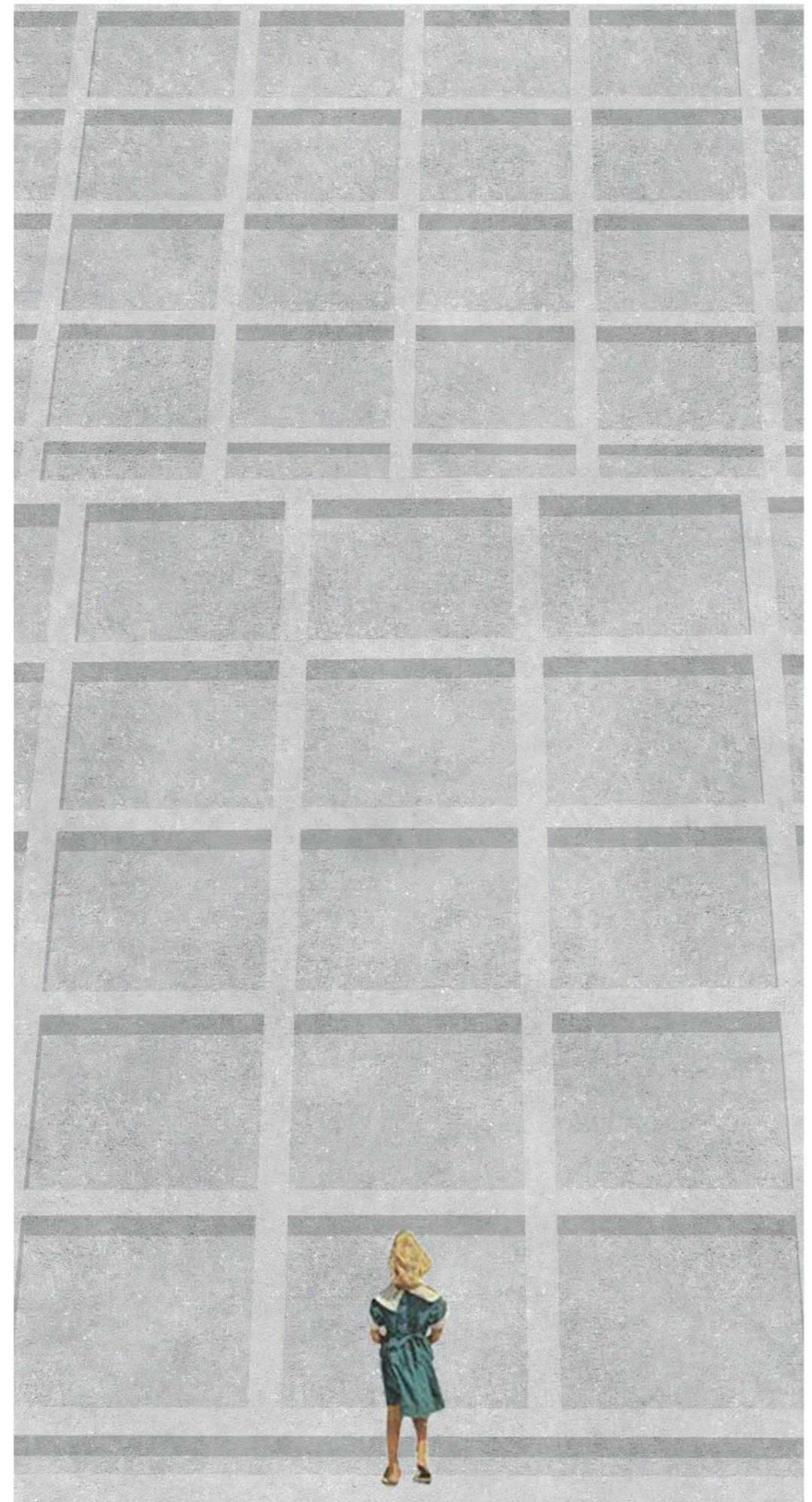
technological detail
stairs





Previous Situation

Infrastructure as a Barrier





Design Situation

Infrastructure as a Potentiality



Flexible Programs

Elevated Garden



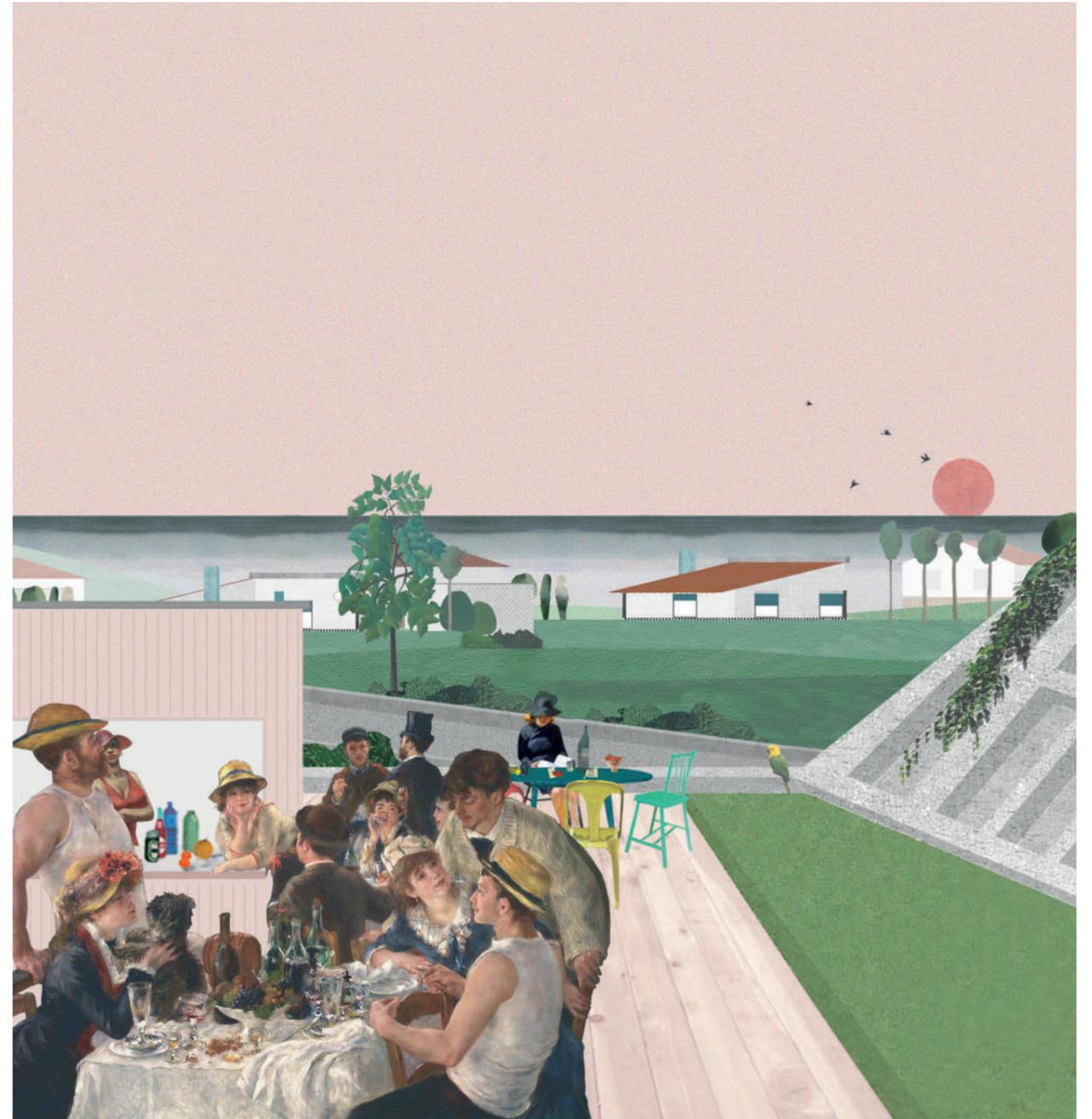
Flexible Programs

Elevated Plaza

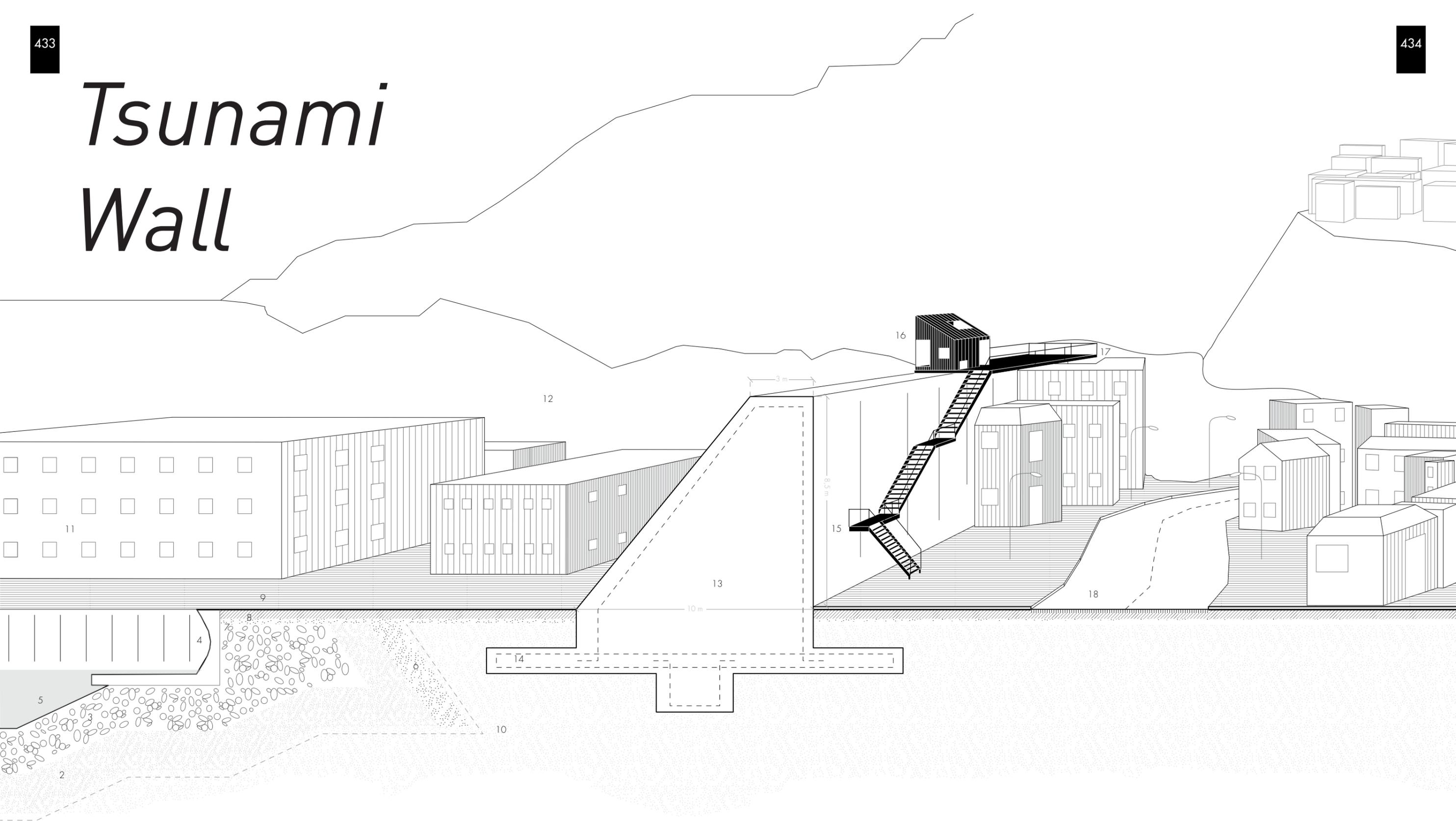


Flexible Programs

Restaurants / Bars

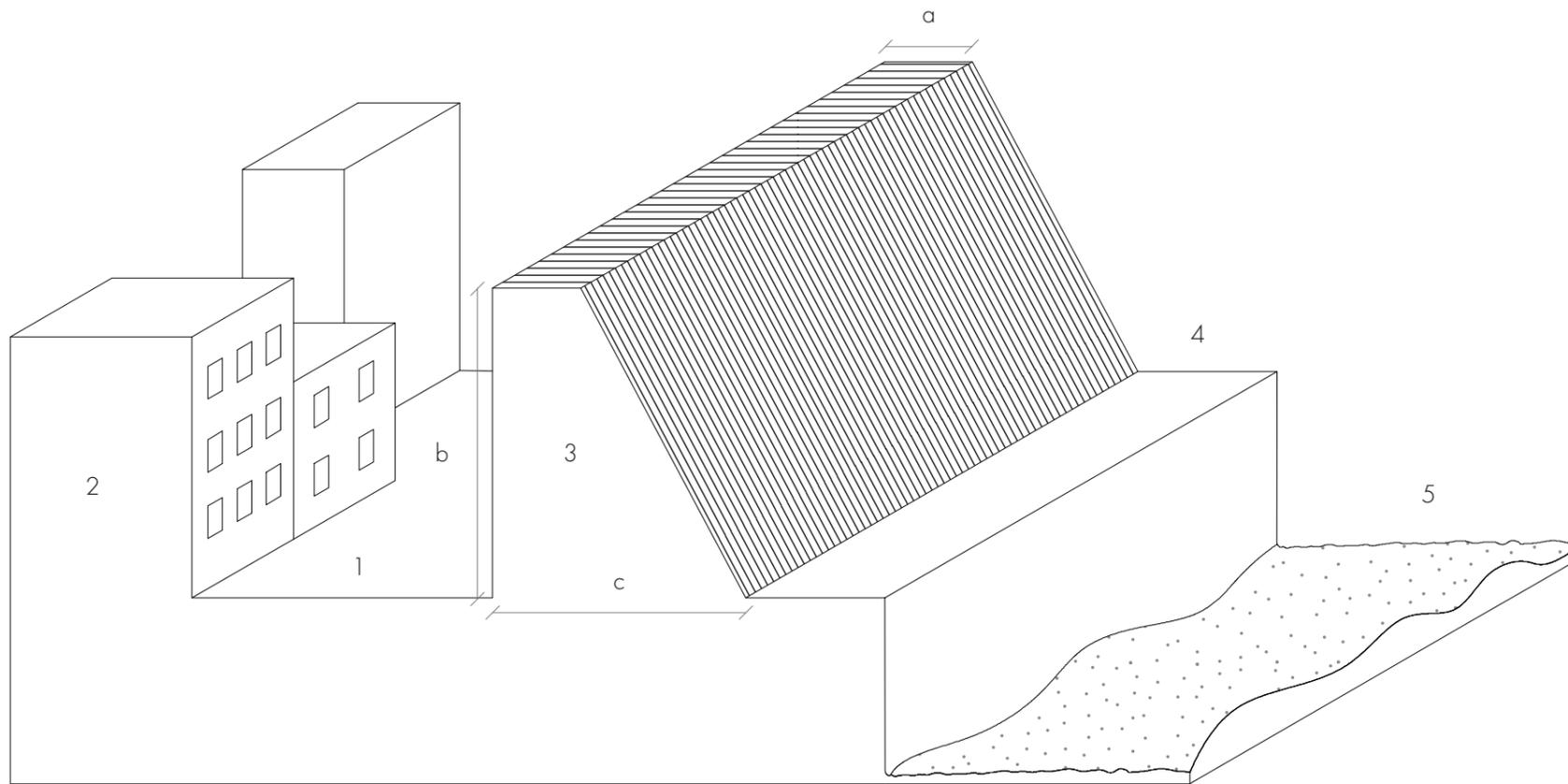


Tsunami Wall



perspective section

1. geotextile reinforcement, 2. secondary armour, 3. primary armour, 4. breaking waves wall, 5. sea, 6. filter rocks, 7. asphalt mix for binder and basis, 8. membrane sami, 9. draining bituminous conglomerate, 10. fill material, 11. industrial buildings, 12. sea, 13. tsunami wall, reinforced concrete, 3 - 10 m x 8,5 m, 14. reinforced concrete foundation, 15. steel stairs, 16. activating urban device: capsule, 3 x 3 x 4 m, 17. terrace, 18. road, 6,5 m.

**barrier**

infrastructure as a barrier, a fracture between city and natural/environmental context

tsunami wall average composition

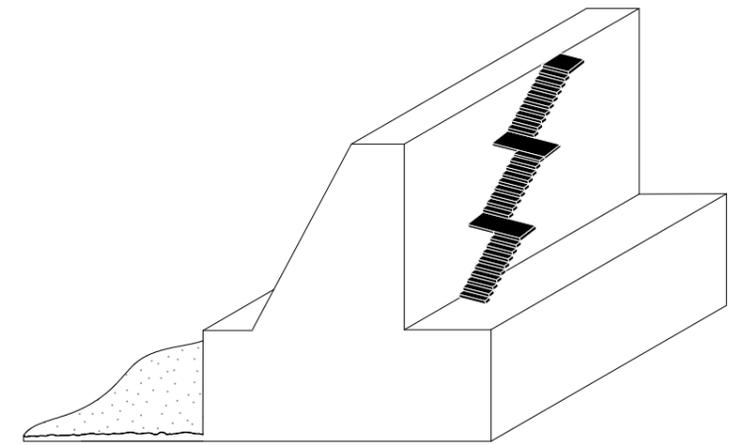
1. sidewalk and / or road, in order to create a separation between the urban fabric and the wall, 2. urban fabric, 3. tsunami wall, on one side straight and on the other inclined reinforced concrete surface, 4. reclaiming land, variable depth, usually the proportion is around three times the length of the wall, 5. sea.

average scale proportions

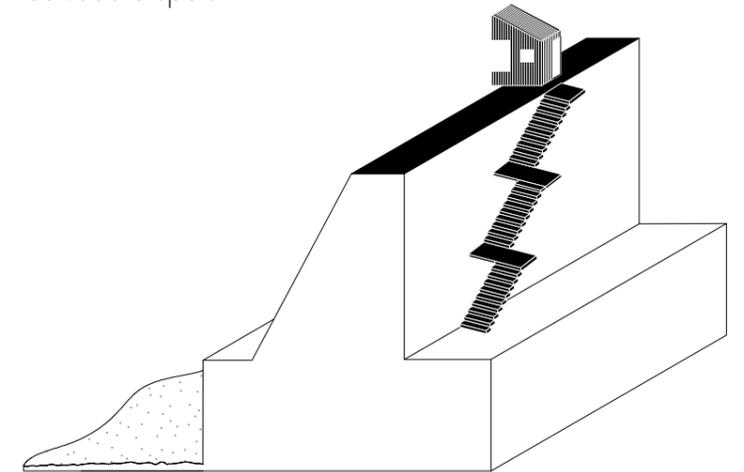
$$8 < b < 15$$

$$c = 2b/5$$

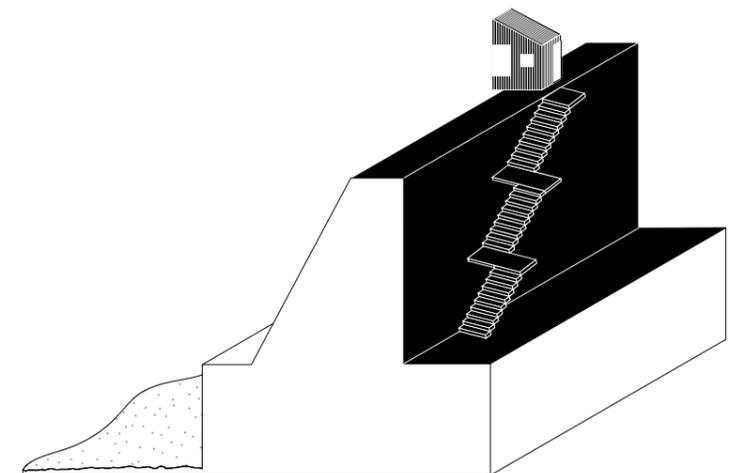
$$a = c/3$$

**reaching the top**

an outside staircase system hung on the facade allows to reach the top of the wall, through different platforms as belvedere spots

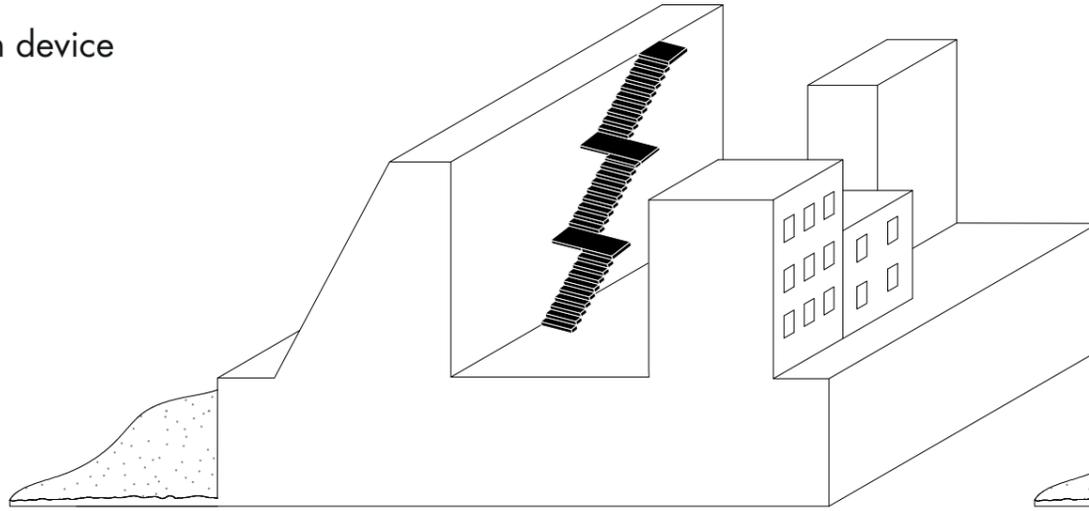
**lifted pavilion**

the surface on the top of the tsunami wall is occupied by an urban device, surrounded by a terrace, in order to activate also the horizontal surface for either private or public uses

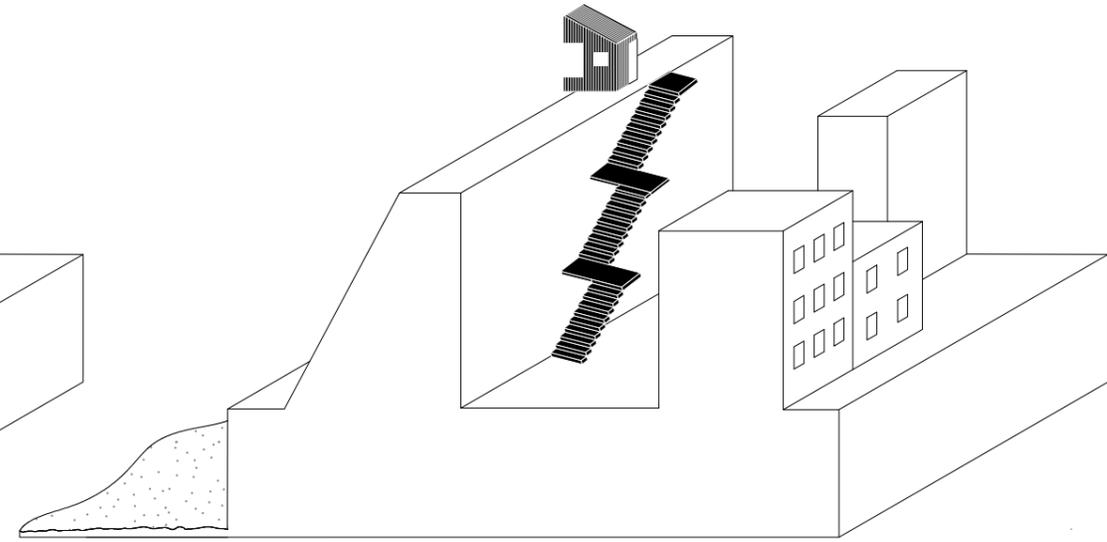
**unveiling the infrastructure**

through the unveiling of the infrastructure potentiality with the urban device, the space is connected with the urban area and the public surfaces of the city

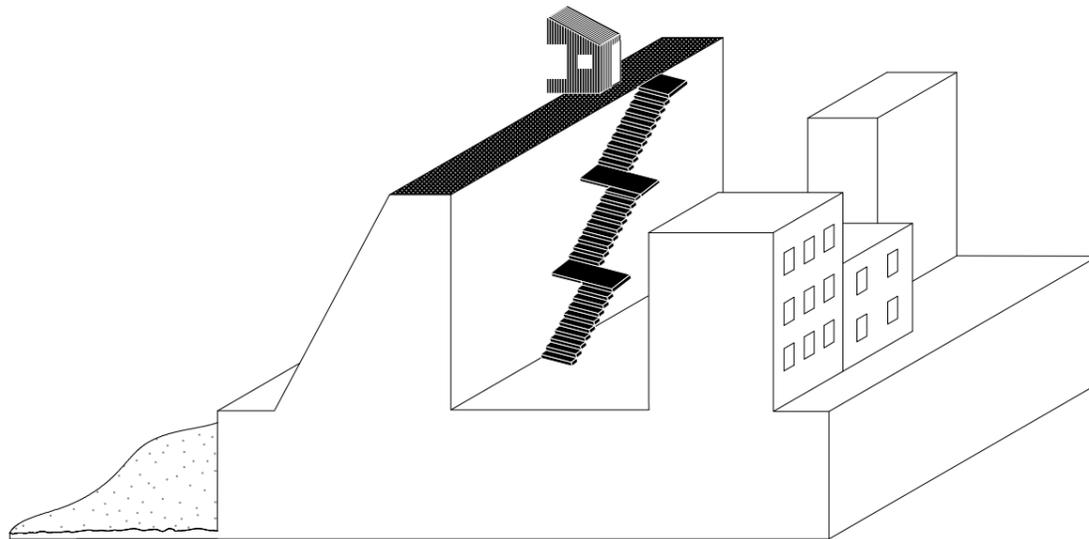
infrastructure as an urban device



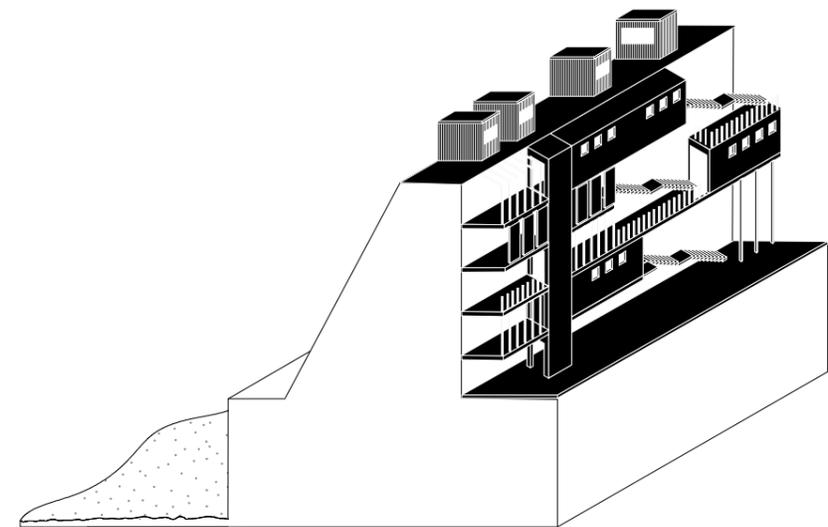
A _ staircase



B _ stairs and pavilion

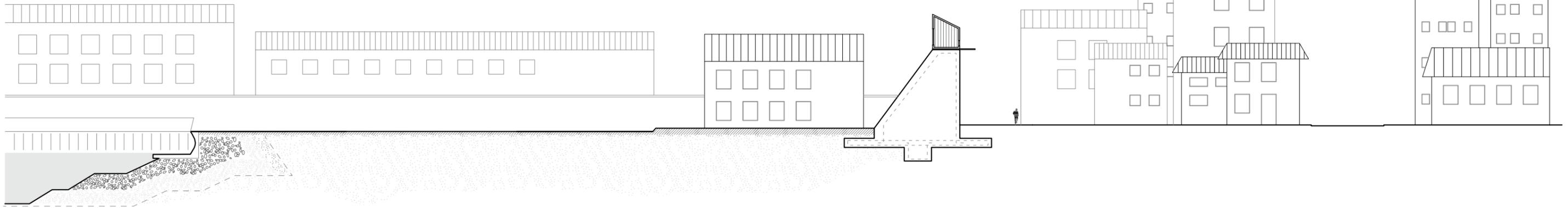


C _ stairs and pavilion with an elevated terrace on top

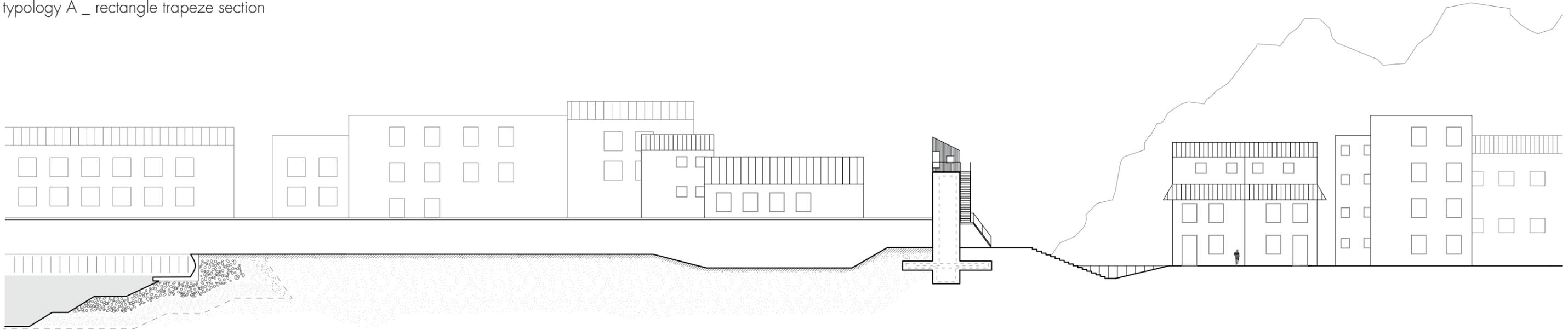


D _ infrastructural wall

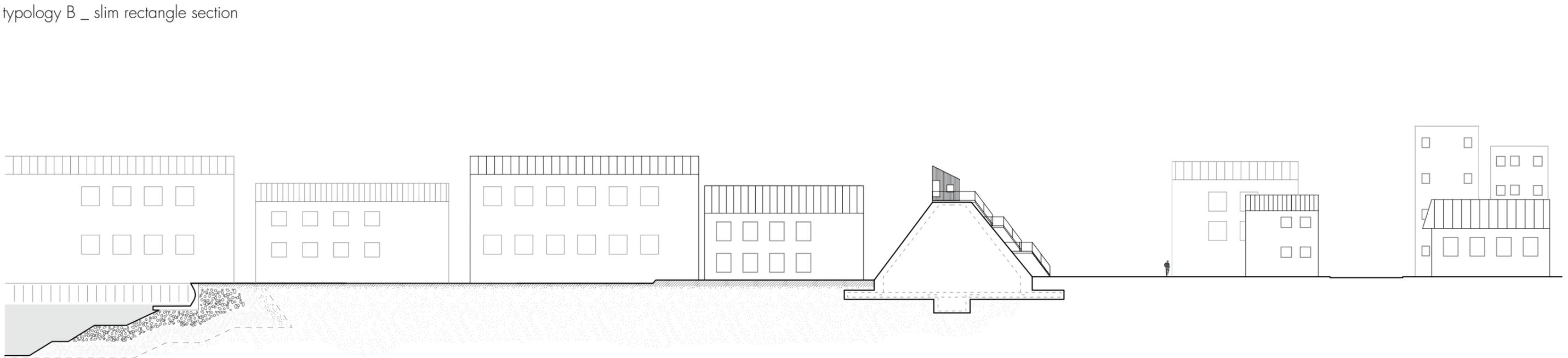
tsunami wall typologies



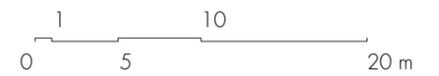
typology A _ rectangle trapeze section



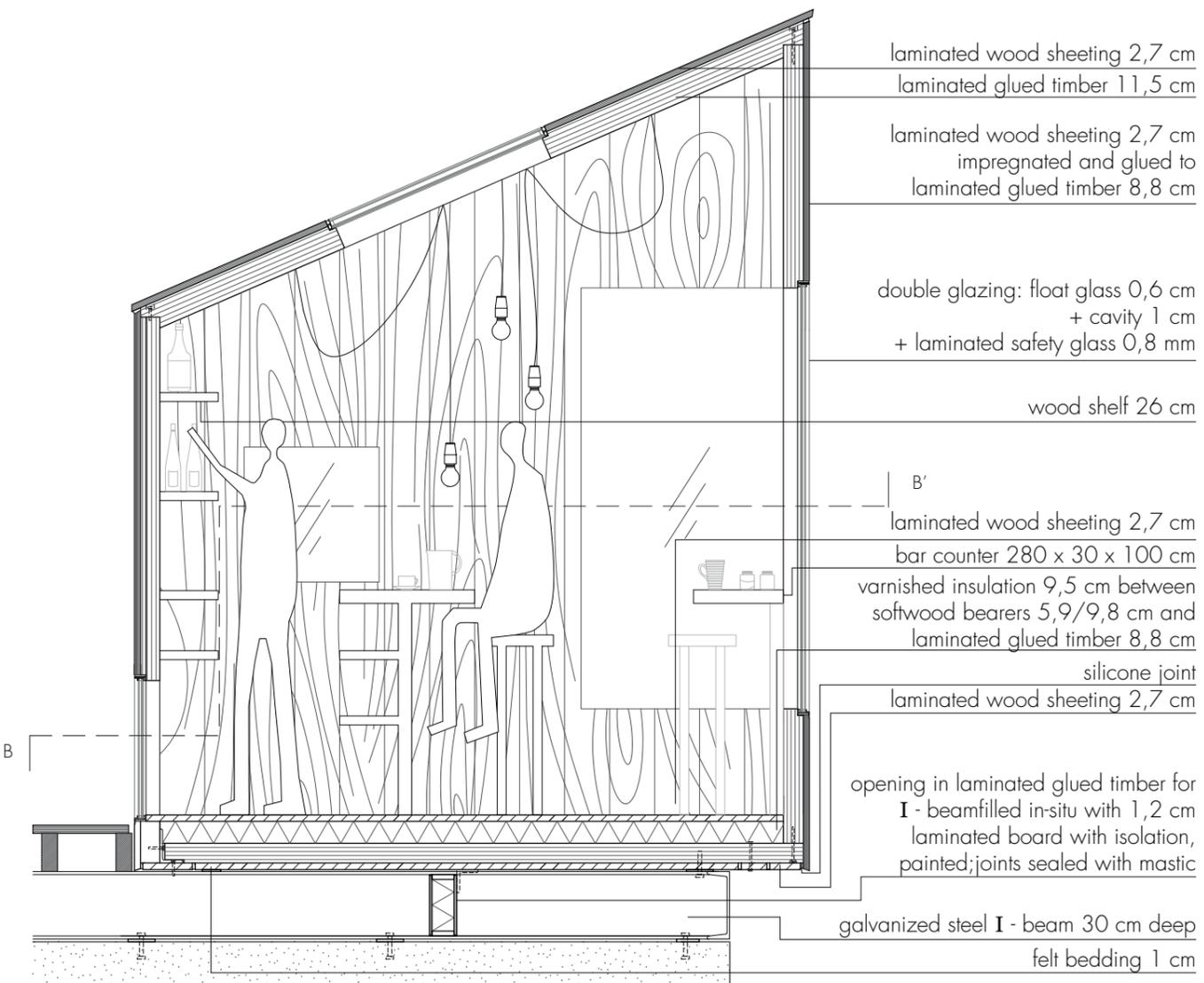
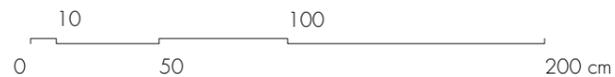
typology B _ slim rectangle section



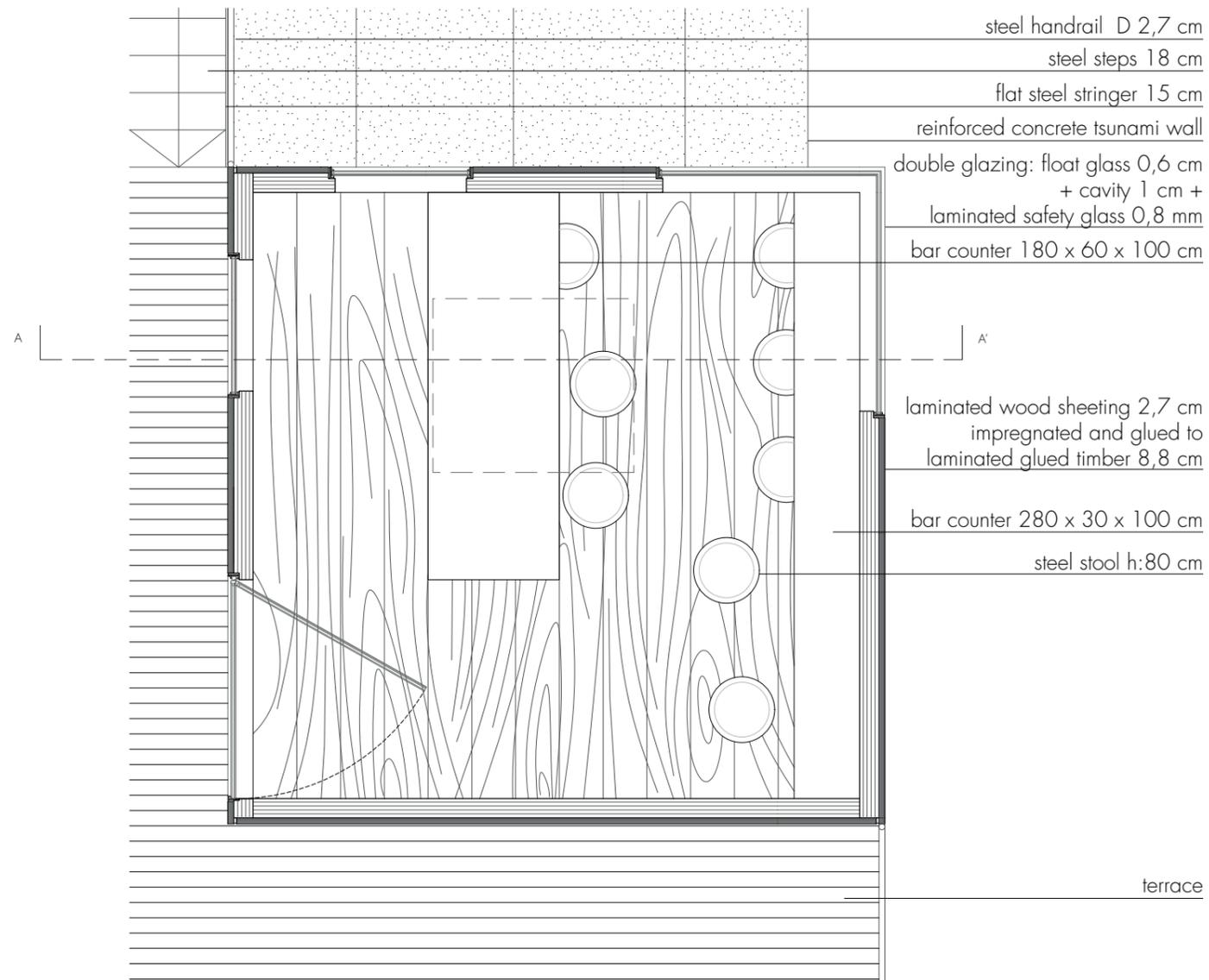
typology C _ wide trapeze section



technological detail
bar / bookshop

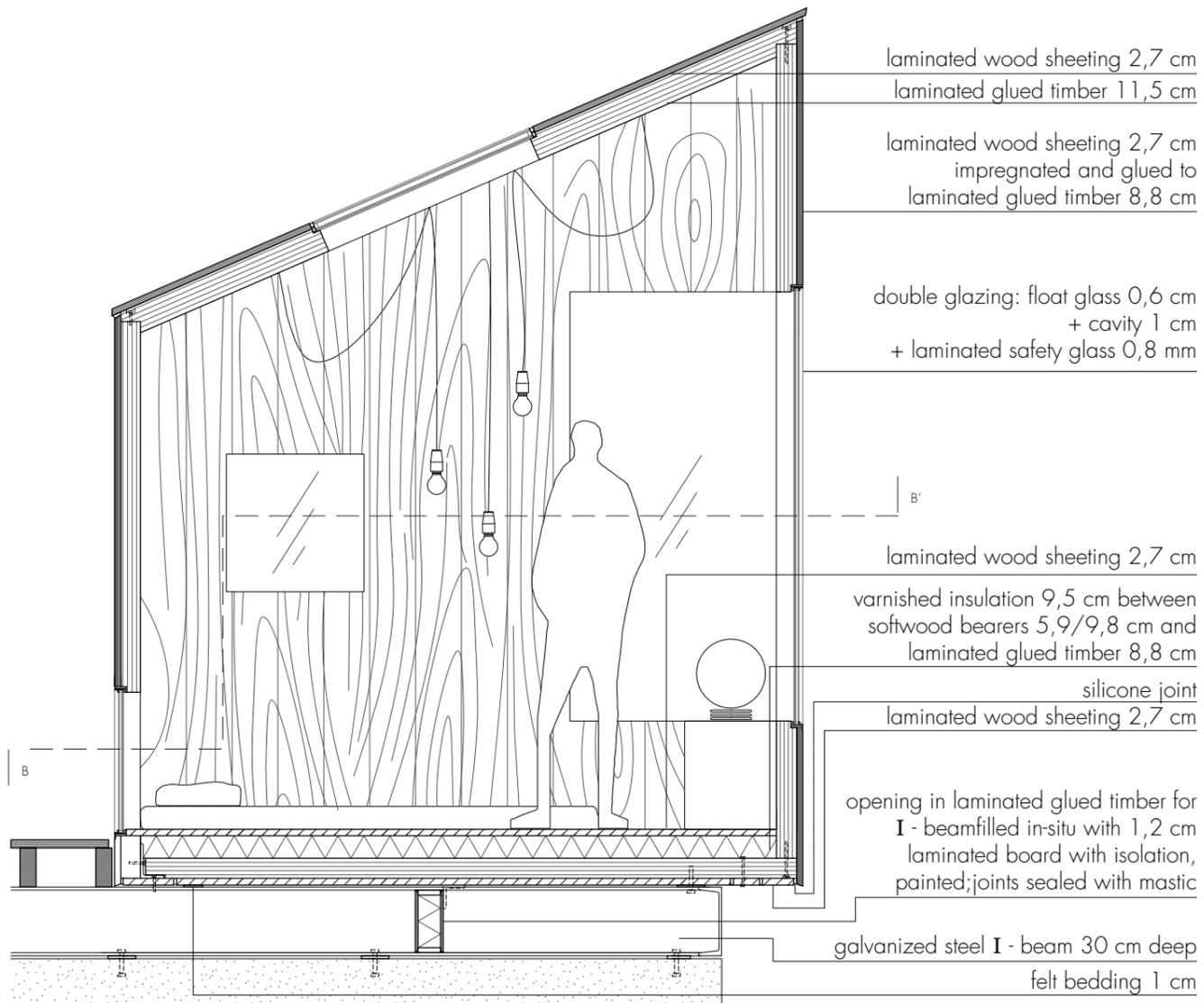
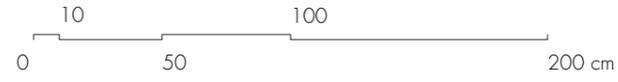


section A - A'

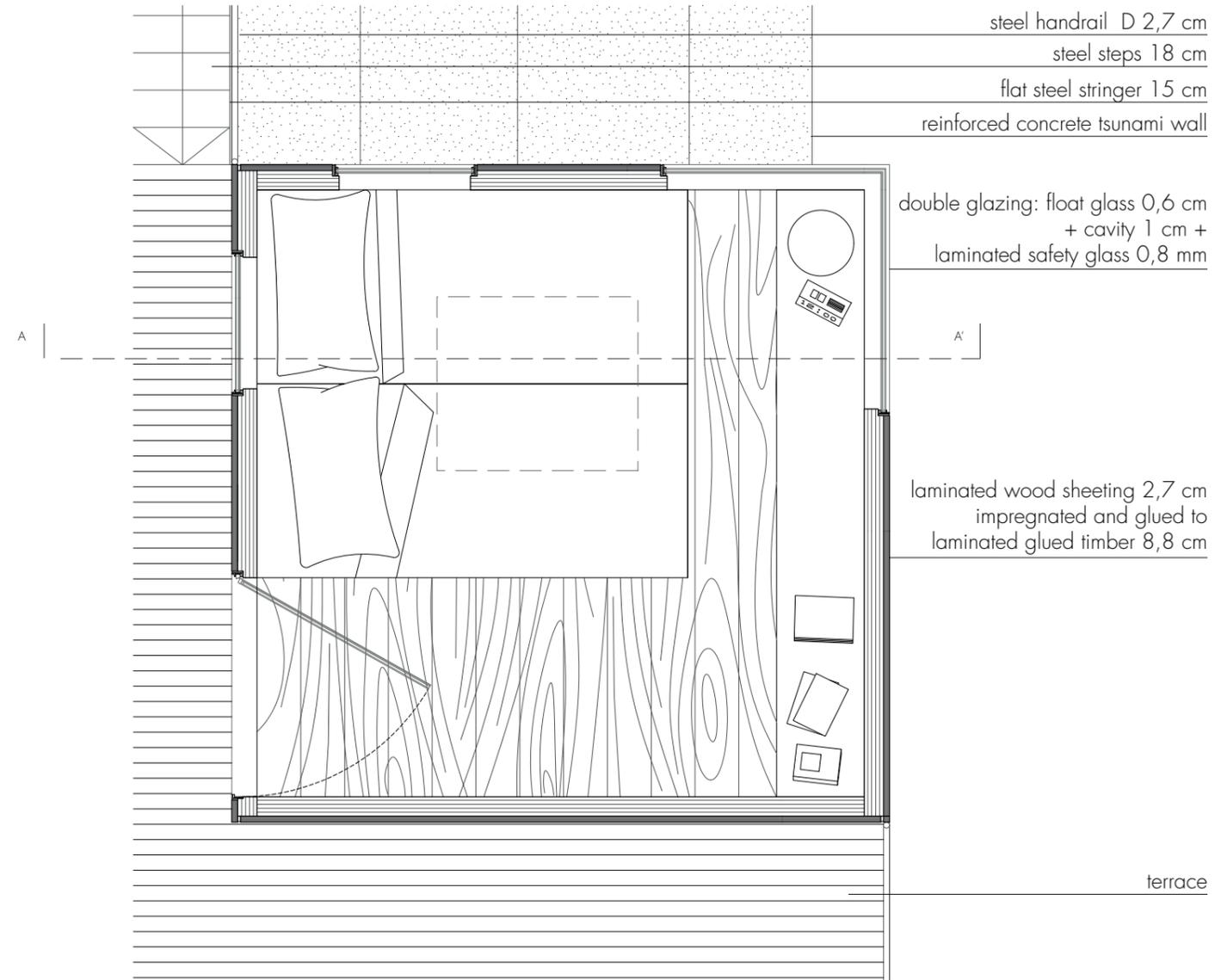


plan B - B'

technological detail
capsule room



section A - A'



plan B - B'





Design Situation

Infrastructure as a Potentiality





Flexible Programs

Bookshop Bar



Flexible Programs

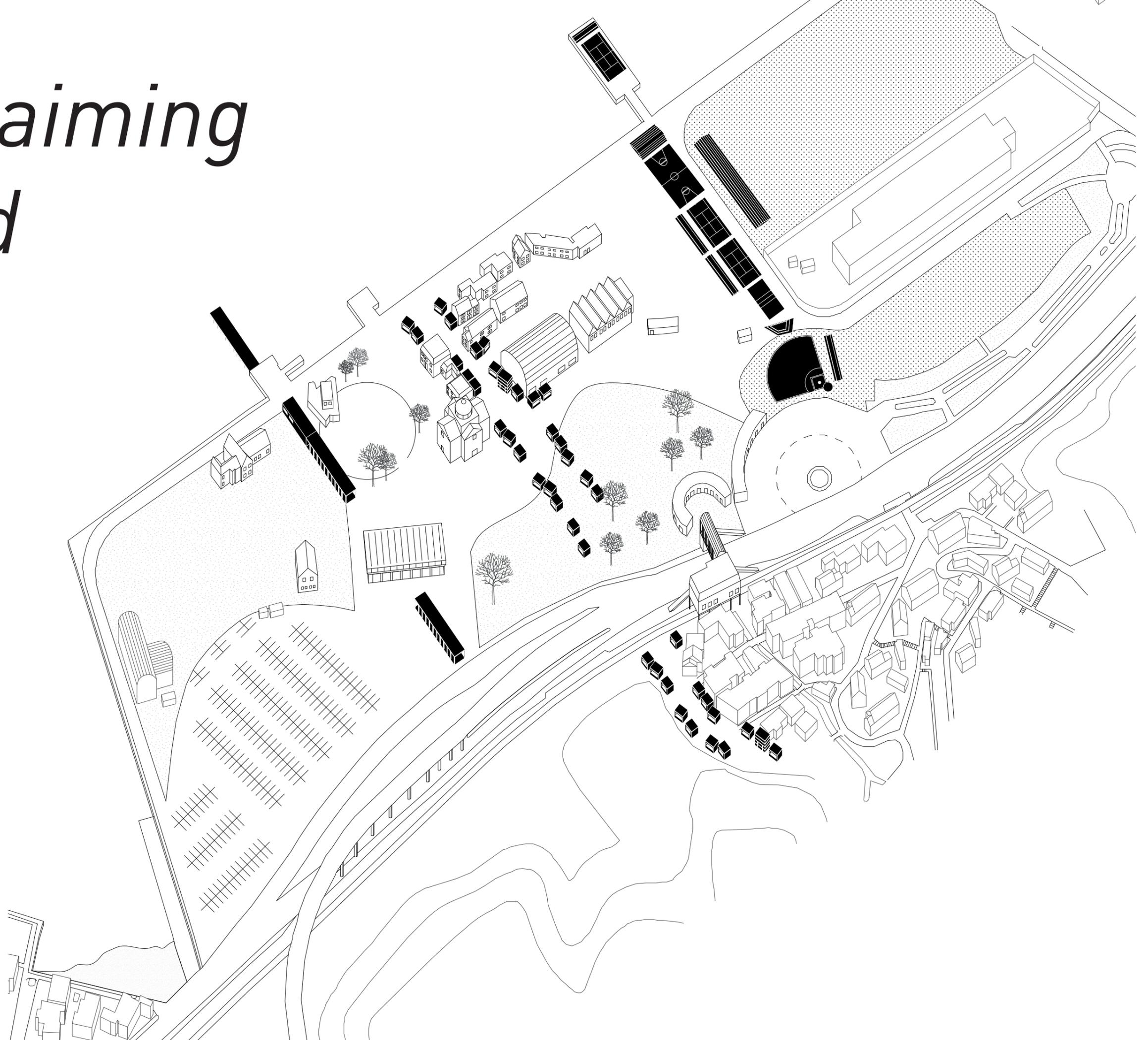
Performance Stage

Flexible Programs

Capsule Room

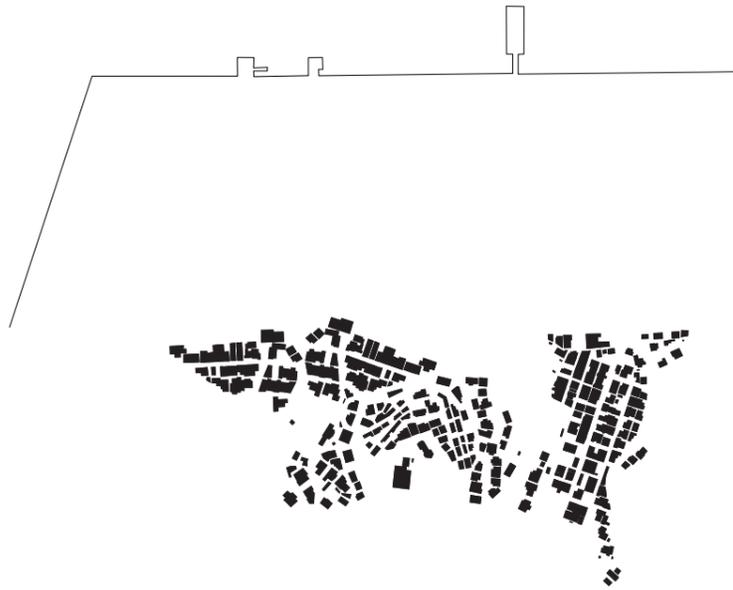


Reclaiming Land

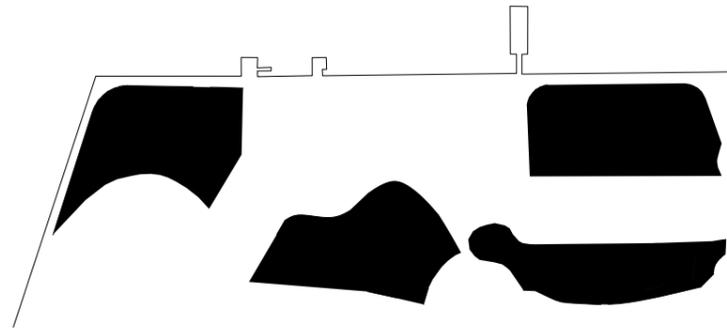


concept

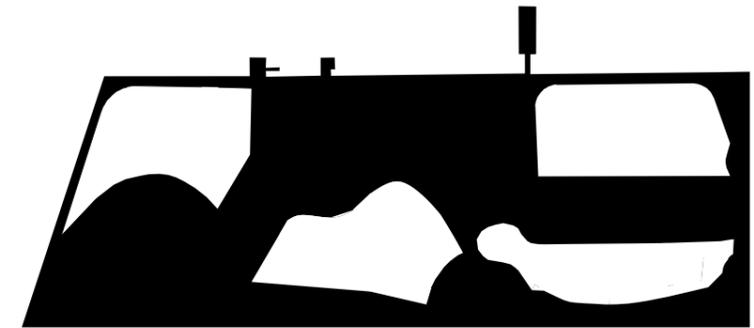
1. **the value of void** _ a void space is missing and needed in Japanese cities, so it's important to leave it but with a new design organization



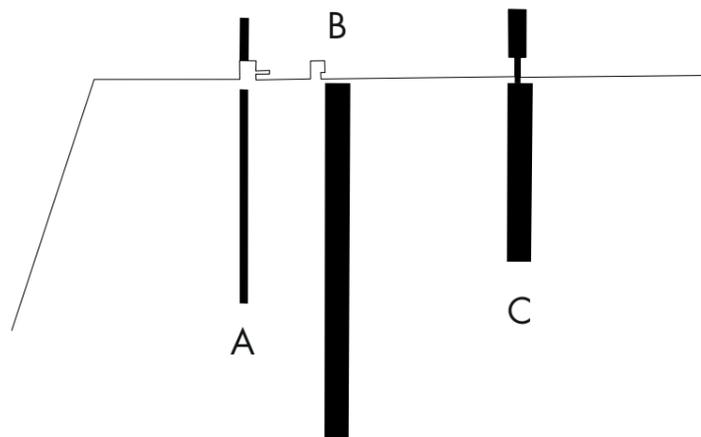
2. **materiality A** _ lawns
the space is designed starting from unified surface without any barriers or small path within



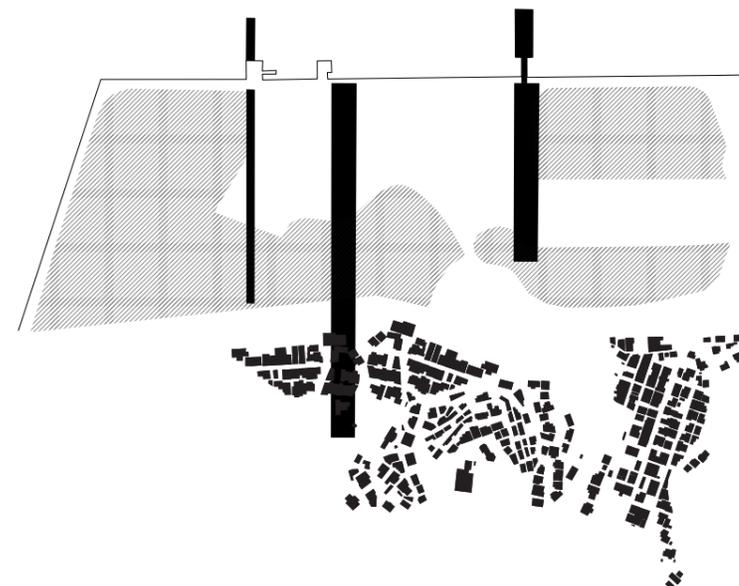
3. **materiality B** _ asphalt



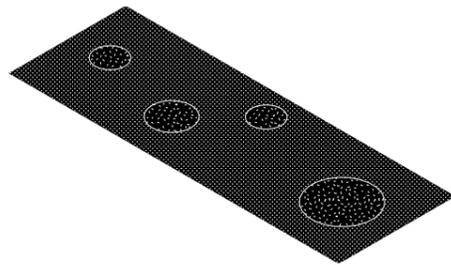
3. **activation** _ spines for devices concentration, in order to give value and connect a void surface
A pier / market, B restaurants, C sports



4. **open space** _ space without barriers or with small buildings within, in contrast with the dense urban fabric, connected by the spines

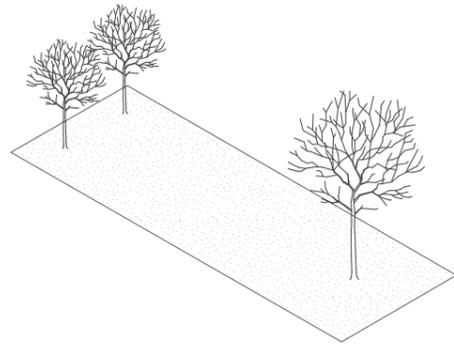


activation process



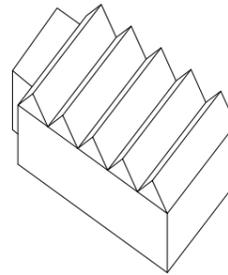
concrete areas

unified existing asphalt surfaces with some "arena", flexible and suitable for different functions, gathering, events



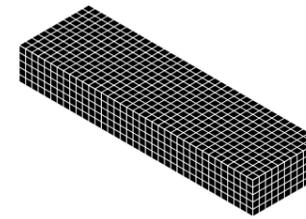
grass lawns

unified and restored existing pot surfaces, without any barriers or small paths in the middle



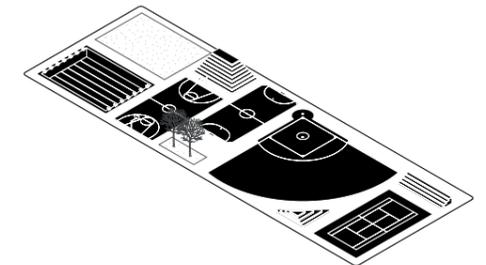
existing buildings

both abandoned and in use buildings in the area, connected functionally and physically to the activating devices



activating urban devices

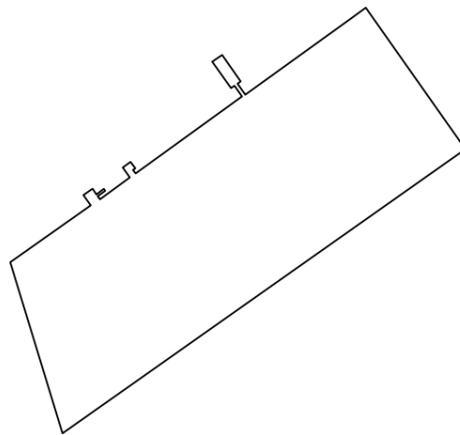
one spine or cluster of buildings aimed to set different areas with three main functions: events and market, commercial activities, sports



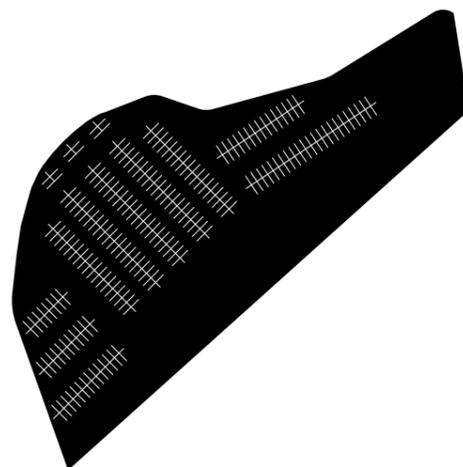
activating sport devices

sport field and facilities connected with the existing sport building in the area (gym and pool), terraces for supporters

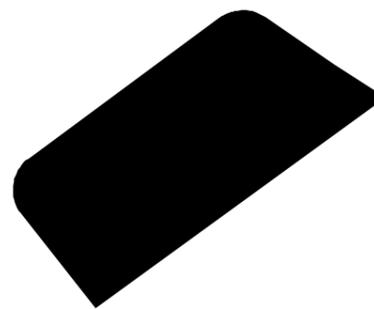
scale



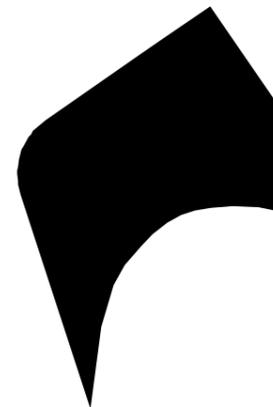
total area: 104.304 mq



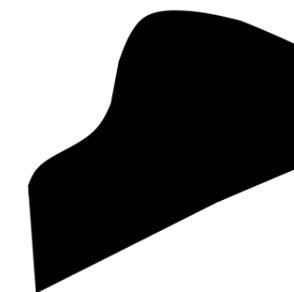
area_1: 14.250 mq



area_2: 10.820 mq



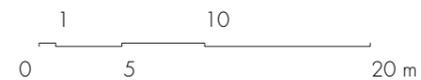
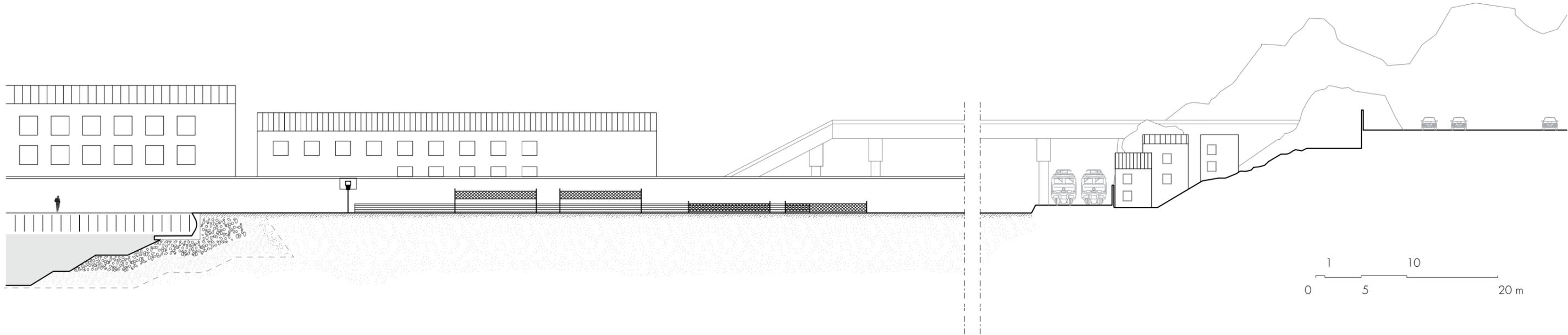
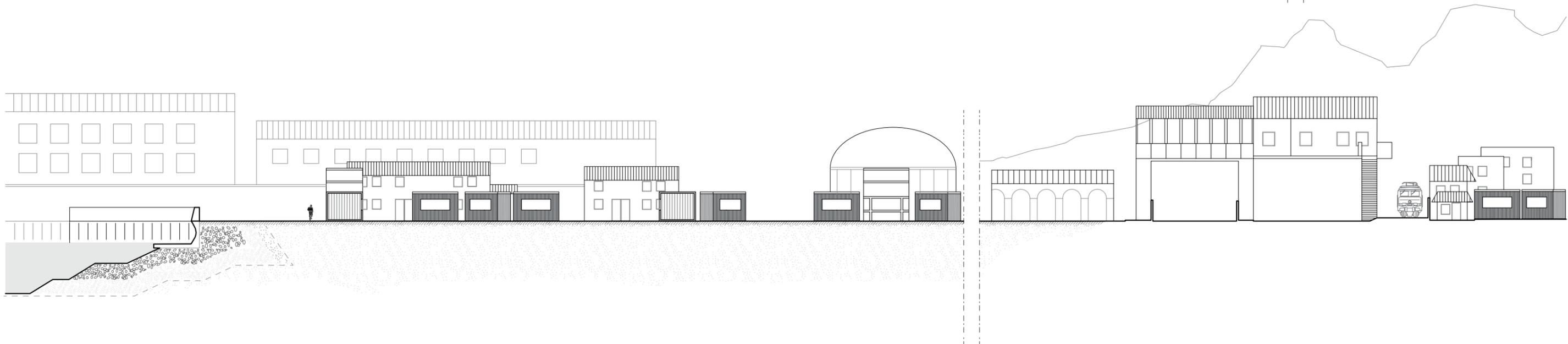
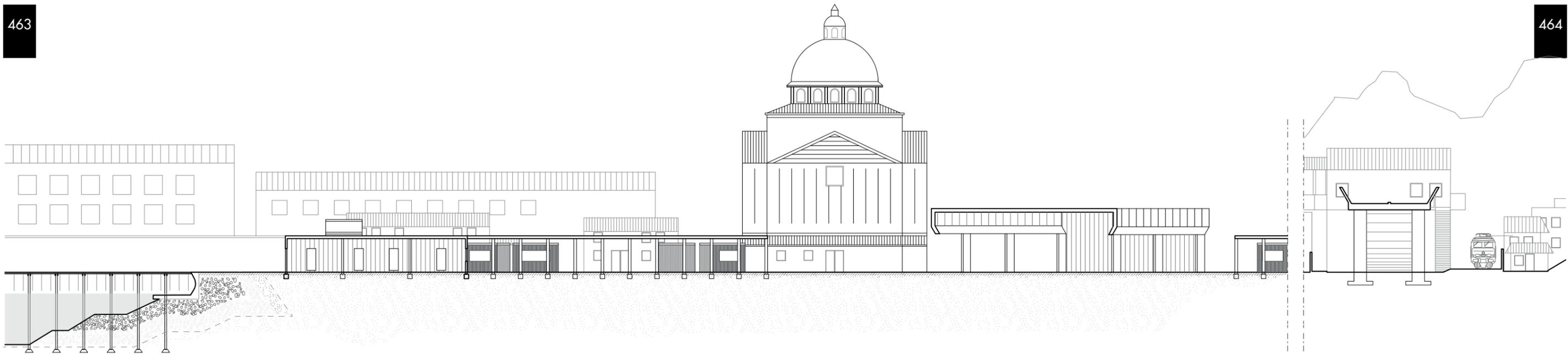
area_3: 10.104 mq



area_4: 8.570 mq



area_4: 7.880 mq





Flexible Program

*market / festival / performances /
sport / leisure*

Flexible Programs

10:30 market



Flexible Programs

21:00 bars / restaurants

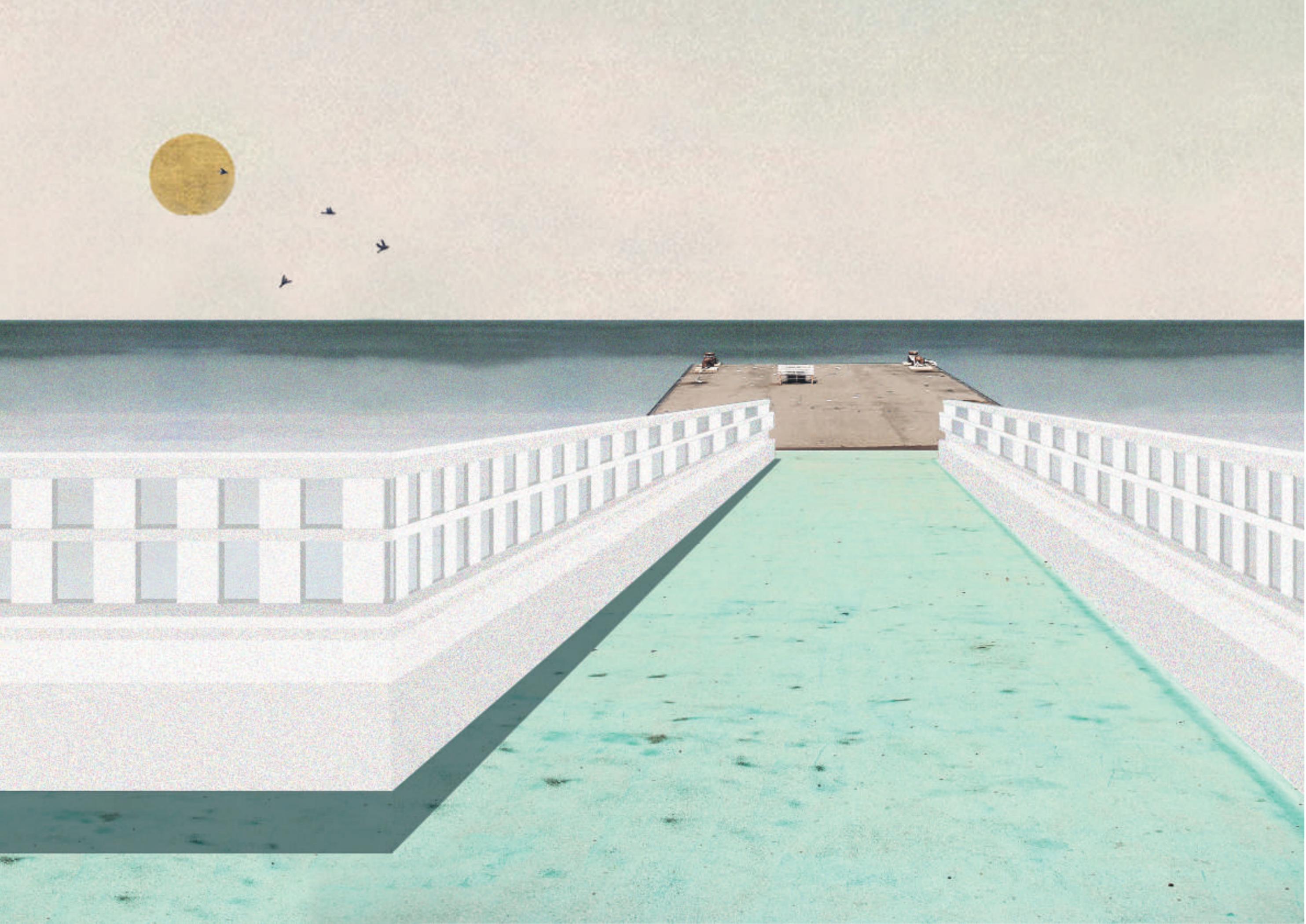




"Modifying means precisely the search for a different method of design, only in some ways opposed to the past, in which attention is given primarily to the problem of meaning, of relations that is, with what belongs to the context, to its factuality and materiality, to its history, to its function in the process of social reproduction, to its constitutive rule. At a more specific level it means building "finer grain" plans, without a demonstrative character, that do not aspire to transcend the situation in which they are produced, that do not claim to legitimize themselves through an instrumental and bureaucratic use of the discursive apparatus handed down to us by tradition, but that articulate the space of discourse with more limited and defined themes; plans that partially lose their institutional character, normally abstract and independent of specific purposes, that select the themes of design starting from the specificity of places, from their positional character, referring to an idea of limited rationality. More specifically, it means abandoning the large backgrounds on maps, the large architectural and infrastructural signs on the territory, acting on the intermediate areas, on the interstices, on the joints between the "hard" parts, reinterpreting the "malleable" parts, somehow reinventing one and the other by adding something that gives meaning to the whole; that is, to establish new bindings, to form new physical, functional and social clots, new aggregation points that solicit more distant perspectives, more general looks within which broader projects can be given, more convincing and true discourses.

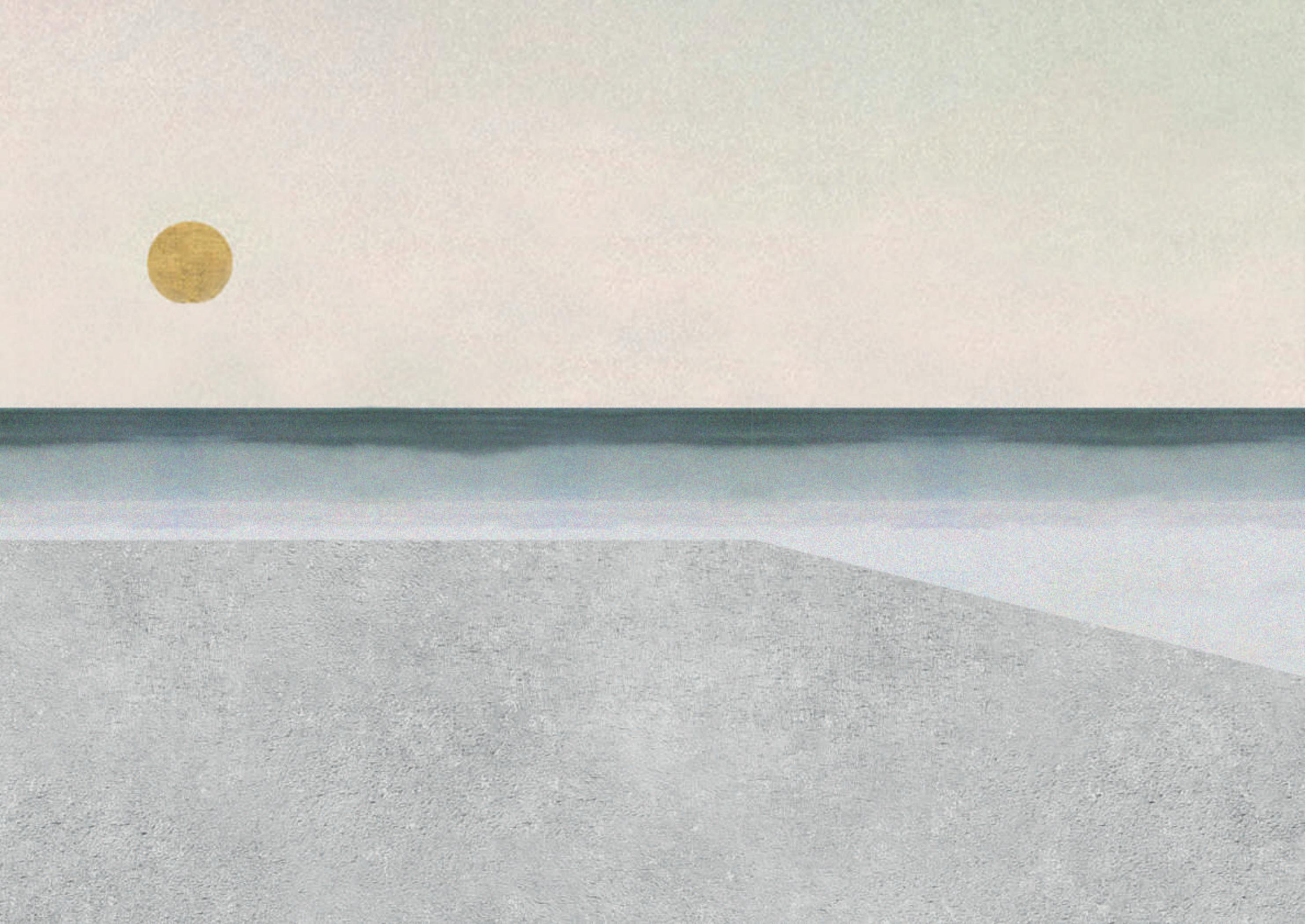
It means to look again for a rule and a semantics, not necessarily a continuation or mimesis of the historical one, but justifiable with public, not private arguments. All this means subjecting oneself to a considerable dose of intellectual risk, perhaps even finding a reason for greater ethical and political commitment."

_ Bernardo Secchi













¹ K. Henshall. 2012. *A History of Japan: From Stone Age to Superpower*. London: Palgrave Macmillan.

² F. Alhaek Naji. 2016. *Metabolism Aesthetics in Japanese Architecture*. Liverpool: Liverpool John Moores University.

³ L. McClain. 2002. *Japan: A Modern History*. New York, NY: W. W. Norton & Company.

⁴ A. Sorensen. 2002. *The Making of Urban Japan*. London: Routledge.

⁵ Y. Friedman. 1958. *Mobile Architecture*. London: Phaidon.

⁶ Y. Friedman. 1999. *Structures serving the unpredictable*. London: Phaidon.

#8

Conclusion

Conclusion



The objective of the analytical and design process of this thesis is the study of the Japanese status quo, as regards the infrastructuralisation of the territory and the perception of the different parts of the urban fabric, with consequent verification and design demonstration of the fact that, if subjected to micro architectural interventions, the infrastructures can become a potential space, for the community and for the perception of the landscape.

Is the infrastructure the whole of the electrical, hydraulic and functional systems for the life and livelihood of the human environment or is it the true lifeblood of the space we live in?

The infrastructural system facilitates and allows the fluid circulation of objects, people, ideas and information. If on the one hand this system has a strong engineering to guarantee a series of functional characteristics, on the other hand this network is the decisive basis for buildings, cities, metropolitan areas, nations, the basis of contemporary globalization.

These great founding systems, even though they have a pre-eminent role in the creation and development of contemporary society, often remain unnoticed, with an almost indifferent attitude that leads the everyday life of cities to ignore them, leaving them as a backdrop.

They are often the result of laws, parameters, generic protocols that do not take into account local specifications and possible environmental consequences. Omnipresent and anonymous, they are common and obvious in the contemporary urban landscape.

Infrastructure, in fact, could be considered an underlying urban logic that perpetuates uncontrolled, independent production and consumption conventions.

At the same time, infrastructure is the representation of long-term national investment, decisive in directing and mapping future development flows, both for developed and developing countries.

In the first case, we are faced with the need to maintain infrastructure, highways, bridges, sewage systems, dams, current in the contemporary European debate, while in the case of the latter, they must face the design of an infrastructure system that supports their economic and demographic development. In both cases, the infrastructure is a key element in supporting the human habitat.

Faced with difficulties in dealing with sustainable practices on a global scale, infrastructure must be seen as a key to reorienting our ways of inhabiting

the globe, making it not only a means, a slave to utility, but responsible for distinctions from a contextual, social and cultural point of view claimed as a community resource of primary importance.

In order to make possible the triggering of these dynamics, first of all, there must be a revelation of the potential of these structures, as a useful element in an ecology of interrelationships vital to furthering life. The reactivation and redesign of infrastructures is an unusual, unused road, even if it hides a great potential.

A "colonization" of the continuous monument, the large white canvas spread over the Japanese landscape, through minute architectural interventions can be able to reactivate these large urban voids, which today do not have a specific characterization and a spatial quality. Engineering structures can be transformed into design opportunities in a historical period in which the relationship between anthropic and natural has profoundly changed.

An urban design mode that provides for the minimum intervention and demolition of existing buildings, going to maintain and increase the local identity.

The selected case studies are peculiar for a historical development of the relationship with the sea and a strong infrastructural imposition on the territory, functional to the economic development as well as to the break with the nature of the same. All six villages deal with the same issues in different ways, with equally different solutions and potential future developments.

Through interviews and workshops with the population and the local government, I have collected testimonies and opinions regarding the criticality and potential of urban spaces, of the territory and, more generally, of communities on the margins of economic development, tourism, national production, increasingly dependent on large urban centers, increasingly poor in services, investments, fulcrum attractors.

The awareness gained from the analysis of the infrastructures, their morphologies and characteristics, together with that deriving from the needs of the local population, allowed me to design a "landscape of voluntary architecture", a series of design interventions aimed at reactivating the infrastructures with morphological, dimensional and programmatic evolutions and differences, with particular attention to the extreme flexibility of the project itself.

The infrastructure is redesigned as a contemporary

Zen garden made of architectures that, strategically placed, exceptions in a homogeneous space, are able to give space to some spontaneous actions that already occur on the infrastructure or its edges and to suggest further, immediate or articulated. The articulation of the design action takes place through a cultural approach, not purely programmatic or spatial.

Three infrastructures, the most recurrent, are taken as examples for practical application:

- _ Retaining Wall
- _ Tsunami Wall
- _ Reclaiming Land

In each of these three cases, a different solution is proposed, which is accompanied by potential future developments from a programmatic and spatial point of view, towards more permanent forms of settlement or in the direction of a full activation of the infrastructure system.

There is no rigor, no grammar, no specific program. The landscape of voluntary architecture to be generated is the basis for a potential rebirth of places on the edge of urbanity, without services, without support, without intrinsic value.

The design process, in fact, does not want to have the presumption of demonstrating the best solution or all possible design actions, but aims to unveil the potential of Japanese defensive infrastructure through micro conservation interventions.

With this potentiality and opportunity in mind, the role of the infrastructure system must be extended, recalculated, renegotiated from the beginning, as a technical element but also of strong urban, social, architectural, landscape, nerve centre value not only for the achievement of resilient forms of development, but above all as a right to a sustainable form of life.

By highlighting and revealing these characteristics, the infrastructure gains an economic, social and political role, but its civic and aesthetic terms also remain imperative, as a place for the community, if they really will be outlined as "the cathedrals of our times".

Aknowledge- ments



setting, concetto, also me, shade, stupide giocose, lelle, belle e brave, programmmmatrici.

Per i vocali alle 3 di notte, per i loft (ma solo su Rhino, per il resto tu ostello addicted e nulla da fare per scollarti da sto mood che abbiamo collezionato più acari che sorrisi), per i risotti concetto, per ore in libreria a fissare lo scaffale di Pasolini, per i risotti, i bicchieri di vino e ancora per i risotti. Per vedere sempre il meglio e il peggio in me, in maniera simultanea, come solo una madre sa fare.

In realtà ho scoperto che compri assiduamente il pesto senza aglio della Crai, quindi ti comunico con questa direttiva ufficiale che non siamo più amici.

CIAO.

Ah, il pesto, pure senza aglio.

Grazie ovviamente anche ad Angelinoh, compagno di sventure nella sopportazione di questo fratello un po' così che ci è capitato.

Però amo na boraaccia di ELSA vedi di regalarmela.

Grazie a Gianpi, amico da sempre, cugino da altrettanto, compagno di bevute e in grado di decifrare perfettamente i miei rumorosi silenzi.

Grazie a tutti gli ASPers a cui ho voluto bene e che mi hanno sostenuto i vari mercoledì sera. No foto del toga party in giro raga perfavore.

Un grazie speciale a Benni, per i vocali eterni, per le sedute psicoterapeutiche, per Ezra, Timothée, aesthetic, concerti e concetto all over, playlist chicchette, dissertazioni sul "la qualsiasi" sempre, ovunque, comunque. Grazie a Iacopo, ENERGY, per masterclass sulla carbonara, consigli sulla politica italiana (non richiesti) e per una serie innumerevole di imitazioni,

soprannomi, vocali che SE NUN ME TAJO ORA NUN RIDO MAI PIU'. Un grazie anche a Gigi-Lorenz-Marzo, dream team negroni a feste con alta concentrazione di inge e camicie azzurre. Non serve aggiungere altro. Infine, grazie al mio gruppo di tesi, Officemotion, Maja, Elena, Franca, Giannino e il signore Presidente Michelozzo, che SICURAMENTE emozioni ne ha regalate (e non poche). Grazie soprattutto per scelte concordate di outfits consapevoli.

Luci cuore mio, la mia amah, chiaramente non solo un asper ma molto di più. Compagna di fardello, ansie, gioie (poche) e dolori (molteplici) della tesi. Un bridisi ai pigiamini sezzzzi e agli stivaletti pitonati.

Grazie a una diploma unit sconclusionata ma decisiva. Grazie a Silvi, Ste e Vale per tradurmi le revisioni che non volevo ascoltare, per "un'insalata veloce al Vale", per il Bar Basso, il concetto e ancora il concetto. Reghi conto su di voi vestiti in total black mi racco così fate pan dan con il mio outfit della discussione. So che posso contare anche sta volta su di voi.

Silvi grazie per insegnarmi a fare storie su instagram sempre più forward, per lo shopping, per i tutorial su "come aprire un fico d'india", come fare amici a Lampedusa, per i palloncini svedesi.

Vale grazie per le illustrazioni di Greta, perdissertazioni sui plastici e sulle Balenciaga.

Ah, Stefi, grazie per la pasta alla norma.

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