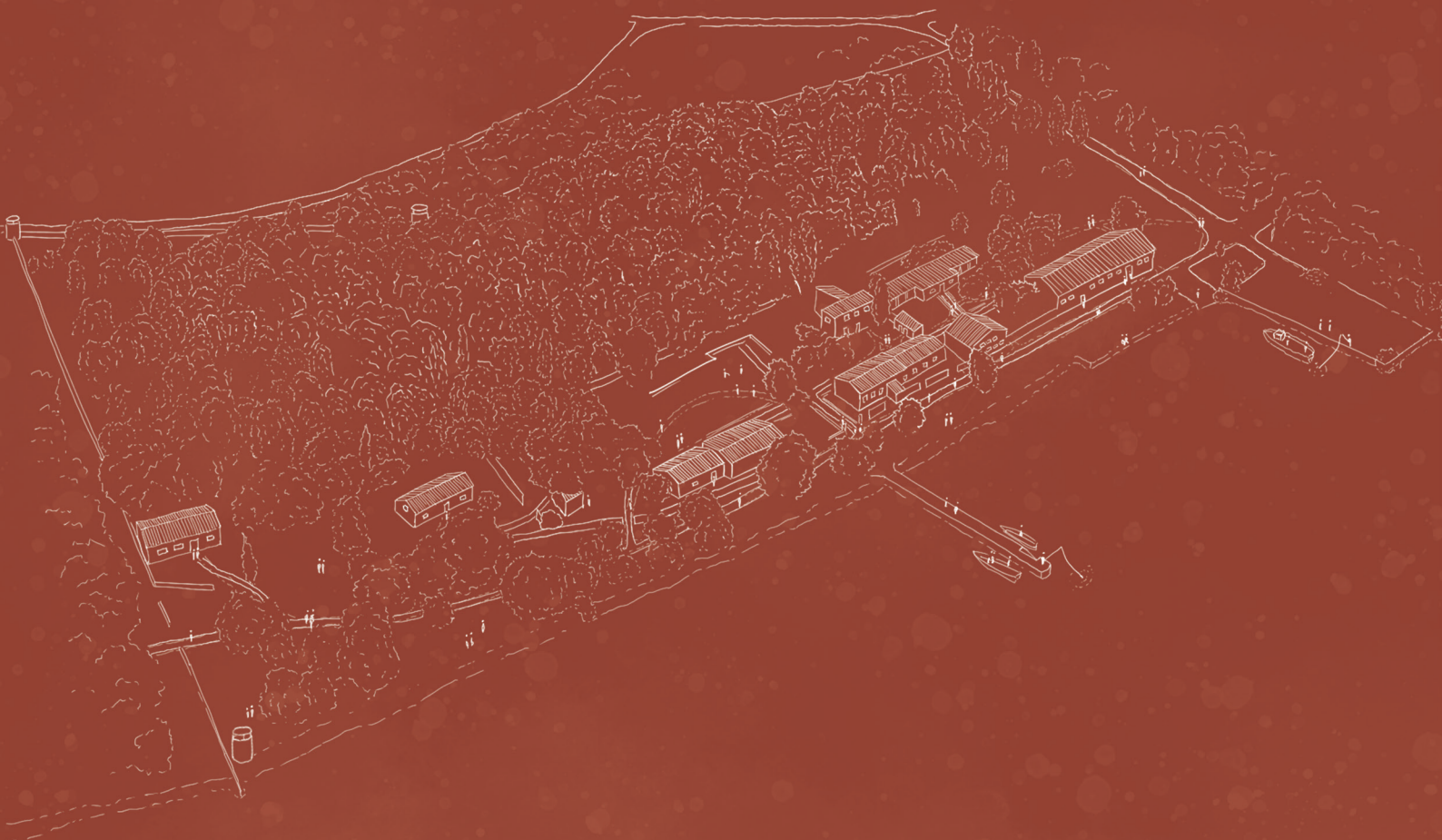
FROM MILITARY SITE TO LIVING PLACE

Rehabilitating the Coastline of Pula



KESTELOOT Bastien

FROM MILITARY SITE TO LIVING PLACE

REHABILITATING THE COASTLINE OF PULA

LARCT2282 - Master's thesis: In & On Architecture

KESTELOOT Bastien

Université Catholique de Louvain - LOCI Tournai campus
Faculty of Architecture, Architectural Engineering, and Urban Planning
Academic Year 2025–2026

How can the conversion of military brownfields along the Istrian coastline help meet the needs of the inhabitants of Pula?

Supervisor : Matthieu Delatte
External Expert : Ivana Krtinić

Université Catholique de Louvain - LOCI Tournai campus
Faculty of Architecture, Architectural Engineering, and Urban Planning
Academic Year 2025–2026

TABLE OF CONTENTS

0. PREAMBLE

0 .1 Acknowledgements

0 .2 Foreword

I. INTRODUCTION TO PULA AND THE MILITARY SITE

1 .1 Arriving in Pula

1.1.1 Discovering the city through experience
1.1.2 Urban structure and coastal organisation

1 .2 Encountering the site

1.2.1 Phenomenological description of the site
1.2.2 Atmospheres and materials
1.2.3 Current uses of the site

1 .3 Present observations and research question

1.3.1 Tourism pressure
1.3.2 Research question and positioning
1.3.3 Methodology

II. A CITY SHAPED BY THE SEA AND DEFENCE

2 .1 Historical stratification

2.1.1 Ancient city and maritime continuity
2.1.2 Austro-Hungarian militarisation and fortifications
2.1.3 From Italian rule to the Yugoslav period

2 .2 Military heritage and fragmentation

2.2.1 Naval bases and port infrastructure
2.2.2 A closed and fragmented coastline
2.2.3 Urban interventions and existing documents

III. REACTIVATING THE COASTLINE THROUGH USES

3 .1 Site organisation

3.1.1 Programme and logic of implementation
3.1.2 Materiality and resources

3 .2 Territorial continuity

3.2.1 Reactivation of former infrastructure
3.2.2 Connection to cycling routes

3 .3 Reuse of structures

3.3.1 The boat workshop
3.3.2 Tool library and various workshops
3.3.3 Multipurpose spaces and services
3.3.4 Craft workshops

3 .4 Contributions to the site

3.4.1 Gathering spaces
3.4.2 Community gardens

IV. CONCLUSION

4 .1 Response to the research question

4 .2 Project contributions

4 .3 Perspectives and limitations

V.APPENDICES

5 .1 Graphic appendices

5 .2 Bibliography and Iconography

ACKNOWLEDGEMENTS

Through this final thesis, I would like to thank all those who have accompanied me throughout my research and throughout my studies.

First and foremost, my supervisor, Mr Matthieu Delatte, architect and professor at the Université Catholique de Louvain, for his invaluable advice and guidance throughout this year.

My external expert, Ms Ivana Krtinić, project manager, for the documentation she provided, her advice, and her expertise on the city of Pula, which were of great help to me from the beginning to the end of the project.

Then, all the teachers at the Université Catholique de Louvain, and in particular the professors of the "En & Sur l'architecture" studio, who supported us throughout my years of study.

Finally, I would like to acknowledge Ilona Munoz, Filip Brekalo, Celestin Perruffel, Alice Frehaut, and all my loved ones who supported and accompanied me during my journey.



Figure 1 : Photograph of part of Pula Bay

FOREWORD

This final thesis has its origins in a deeply personal experience. Pula was my first trip taken alone, a new immersion in a territory that was then completely unknown to me.

It allowed me to meet friends and build a circle of close ones—people living there—and to discover local life in its most everyday form: its habits, its rhythm, its simplicity, but also the kindness and generosity of those who live there.

Very quickly, this way of life, different from what I was used to, gave rise to a sense of familiarity.
Although I live far away and tend to be introverted, I found Pula and life in Croatia very welcoming.

This personal connection to the city profoundly influenced my perspective and how I approached the project and the thesis.

Beyond this experience, it was also the historical landscape of Pula that struck me. Roman, Austro-Hungarian, and Yugoslav traces overlap on every street corner.
Marks of the past are present everywhere and form an integral part of the identity of the place.

Always very curious about questions of heritage, memory, and transmission, I was immediately captivated by this city and the way its different historical layers coexist and shape urban spaces today.

The project therefore starts from there. From what I saw and felt on site. It was while walking along the coast, watching the fishermen on the quays, or crossing the former military grounds that the first ideas came. The challenge for me is to intervene without erasing what makes Pula, Pula.



Figure 2 : Photograph of a resident sailing in Pula Bay

I. INTRODUCTION TO PULA AND THE MILITARY SITE



Figure 3 : Map of the Adriatic Sea showing the main cities in the north

ARRIVING IN PULA
DISCOVERING THE CITY THROUGH EXPERIENCE

Pula is located at the southern tip of the Istrian peninsula, in the northern part of the Adriatic. The seventh-largest city in Croatia by population (52,220 inhabitants according to the 2021 census[1]), it is also the largest city in the County of Istria.

Its position earned it, from Antiquity onwards, a strategic role in Mediterranean maritime networks.

Istria is itself the largest peninsula of the Adriatic. Covering an area of approximately 3,130 km² for its Croatian portion, it is shared between three countries: Croatia (which holds about 90%), Slovenia, and Italy[2].

Between the Gulf of Trieste to the west and the Bay of Kvarner to the east, the climate is typically Mediterranean. Summers are hot and dry, while winters are mild and humid[3].

The Bay of Pula is part of a protected natural area. It is deep, carved in an arc, which has made it a natural harbour site since Antiquity.

The sinking of the karstic relief into the coastline has moreover created this bay with its jagged contours, typical of the Istrian coast[4].

[1] *Državni zavod za statistiku (DZS), Popis stanovništva 2021.*

[2] *Istarska županija, "Geographic data"*

[3] *Istarska županija, "Geographic data - Climate"*

[4] *Istarska županija, "Geographic data - Coast"*



Figure 4 : Map of the Adriatic Sea showing the countries surrounding Istria

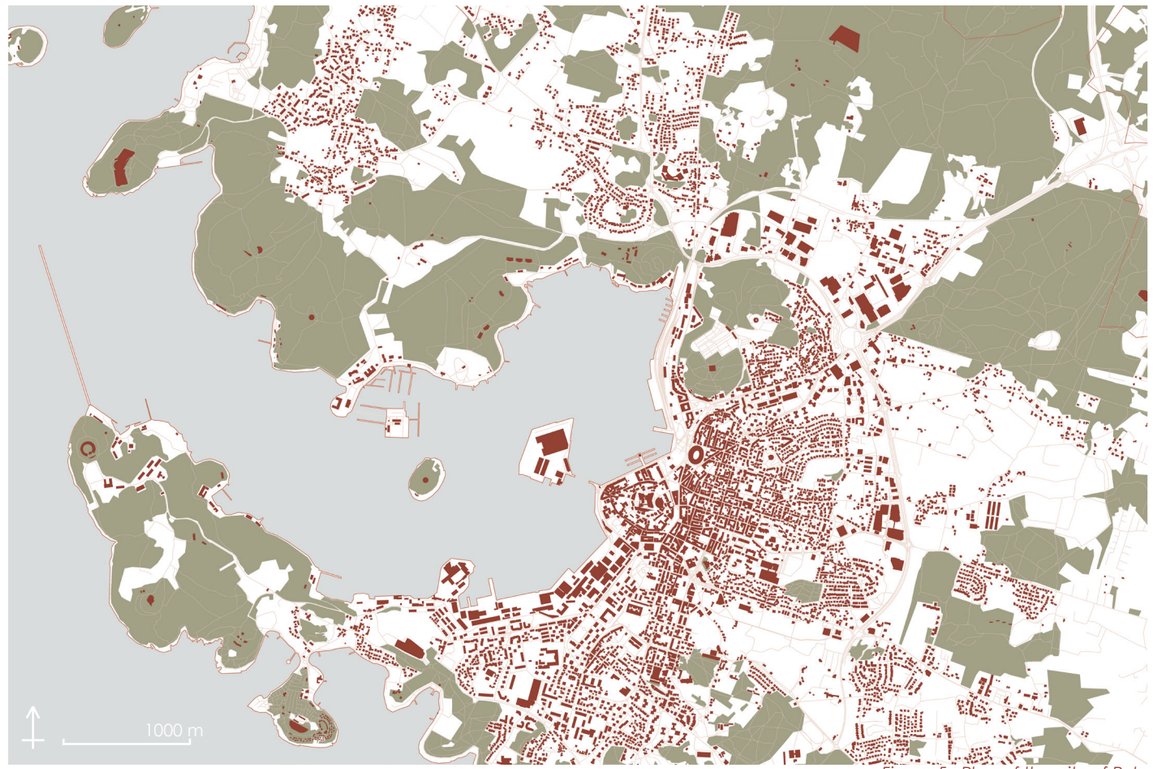


Figure 5 : Plan of the city of Pula

This geographical condition largely explains the urban history of the city, whose development is inseparable from the sea. The coastal topography consists of a succession of headlands, coves, and islets that structure the territory both visually and functionally.

The bay functions as the centre of everything. It is around it that the neighbourhoods, infrastructure, and fortifications were established. The city revolves around its water.

The relief remains fairly gentle, allowing broad views of the maritime landscape from many elevated points, notably the former fortifications that still overlook the harbour today.

It was this bay that attracted the Romans, then all the powers that followed. Each one saw the same thing: a natural harbour, sheltered, usable for both war and trade.

The city preserves numerous Roman buildings, including the amphitheatre (Pula Arena), built between 27 BC and 68 AD[5]. The sea is therefore not merely a scenic horizon; it constitutes the original matrix of the city.

[5] *Grad Pula, Site officiel , disponible à l'adresse suivante :*



Figure 6 : Topographic lines overlaid on a satellite view of the Pula territory from Apple Maps

This first trip to Pula was also my first trip alone. As someone who struggles with anxiety, taking this step represented a considerable milestone for someone who dreams of discovering the world and its cultures.
I was going to see a close friend, whom I met through social media as a teenager, and with whom I had been exchanging for years without ever having had the chance to meet in person.

He picked me up at the airport. The reunion was immediate: as if we had always known each other physically. We drove to his place through the city from its outskirts.

The industrial zones appeared first, then the first Mediterranean houses with their colourful facades and terracotta tile roofs. Then came the large Yugoslav residential complexes on the periphery, before reaching the denser part of the city centre.

His apartment is by the sea, in one of those large collective housing blocks from the Yugoslav era.
His building overlooks a bit of everything at once: a park dedicated to Tito on one side, Roman vestiges on the other, the sea with its boats, and Austro-Hungarian facades across the way.

From the building, you can even see the great arena. This condensation of historical layers in a single panorama sets the tone for what Pula has in store for those who take the time to look.
I discovered his family apartment. In Croatia, people leave the parental home on average at 31.3 years of age.

This cohabitation between generations reflects a strong family culture, which I felt as soon as I arrived.
The building, cold and austere-looking from the outside, is actually very warm once you live there: residents know each other, cross paths, and chat. You even run into family members.

Staying here, in a family apartment rather than a hotel, changed everything. I could be at the heart of daily life without the tourist label, which can sometimes inhibit conversations.

Without this immersion, I would have missed a great deal. Over the days, I discovered the city, but above all people, friends, and a way of life. In Croatia, people take their time.
A coffee, a neighbour invites you to eat without warning, and a Sunday by the sea always ends in an improvised gathering. It is this generosity that left a mark on me.

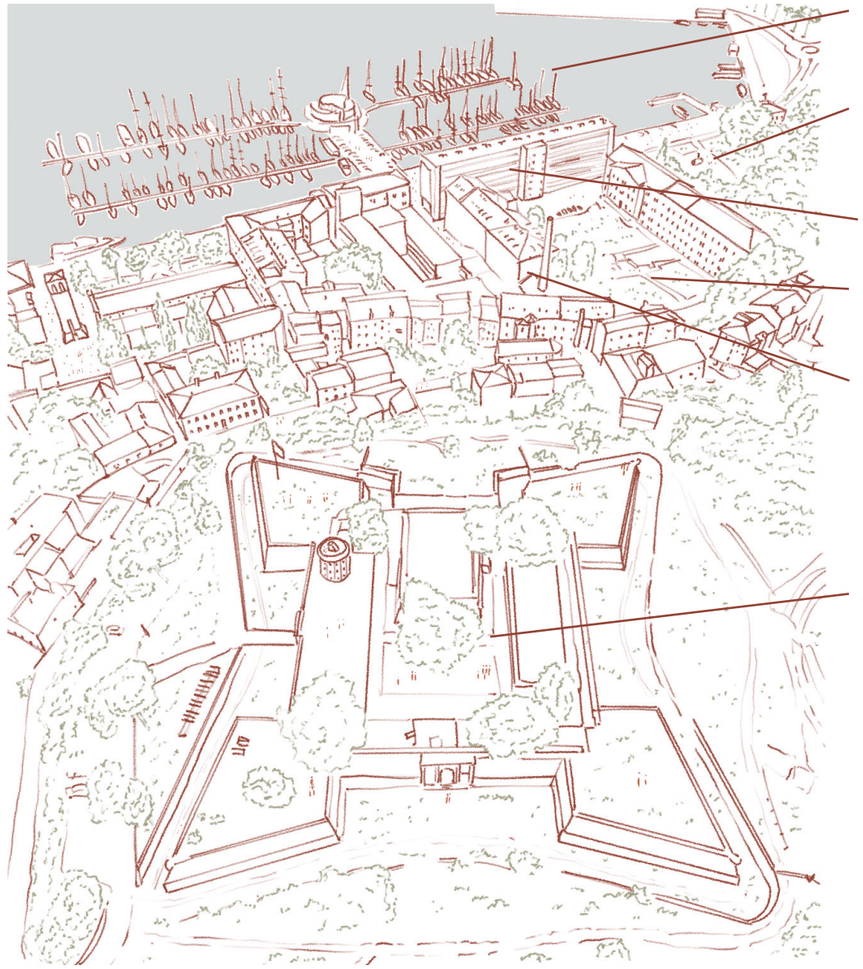


Figure 7 : High-angle perspective of the overall site surrounding the building where my friend lives



Figure 8 : Photograph of the Yugoslav-era building in which my friend lives



Figure 9 : Photograph of a Yugoslav-era residential building in the city of Pula



Figure 10 : Front-view photograph of the Yugoslav-era building in which my friend lives



Figure 11 : Photograph of a Yugoslav-era building complex named Crvene kapice

ARRIVING IN PULA
URBAN STRUCTURE AND COASTAL ORGANISATION

After dropping off my bags, my friend takes me to discover the city centre on foot. The old town wraps around a central hill, and our steps naturally follow this loop along the winding alleyways.

What strikes me first are the colours. Deep greens, faded reds, Venetian renders crumbling in places to reveal the limestone underneath—that blonde stone found everywhere in Pula, the same one used to build the amphitheatre[10].

The streets are narrow, paved, worn. At every turn, a viewpoint opens onto small squares, where people play football, sometimes the sea appears, or other distinctive facades.

You pass from a Venetian facade to an Austro-Hungarian building with no real transition, as if each era had deposited its layer next to the other without erasing the previous one.

My friend tells me that this is Pula. A mosaic; the city does not seek to present a uniform face—it embraces its layers, and that is what makes it endearing.

Below, we cross the Forum where the Temple of Augustus stands, built between 2 BC and 14 AD, destroyed by an Allied bombing during the Second World War and then rebuilt[11].

Further on, the Arch of the Sergii (Slavoluk Sergijevaca), a Roman triumphal arch from the 1st century BC, marks one of the former entrances to the city[12].

People walk beneath it while others sit at a small table nearby to have a coffee. What I like is this natural coexistence between the everyday and the monumental. In Pula, you live with history; you do not put it behind glass.

At the top of the hill, the Kaštel dominates everything. This 17th-century Venetian fort, originally designed by the military architect Antoine de Ville and later reinforced under the Austro-Hungarian Empire, today houses the Historical and Maritime Museum of Istria[8] [9].

[10] *Pula Croatia Travel Guide, " Pula Castle Kaštel "*

[11] *Tourist Office Pula, " Pula's fortifications "*

[12] *Grad Pula, site officie ; op.cit*

[8] *Visit Pula, "Fortress Kaštel "*

[9] *Povijesni i pomorski muzej Istre, Pula Fort Center*

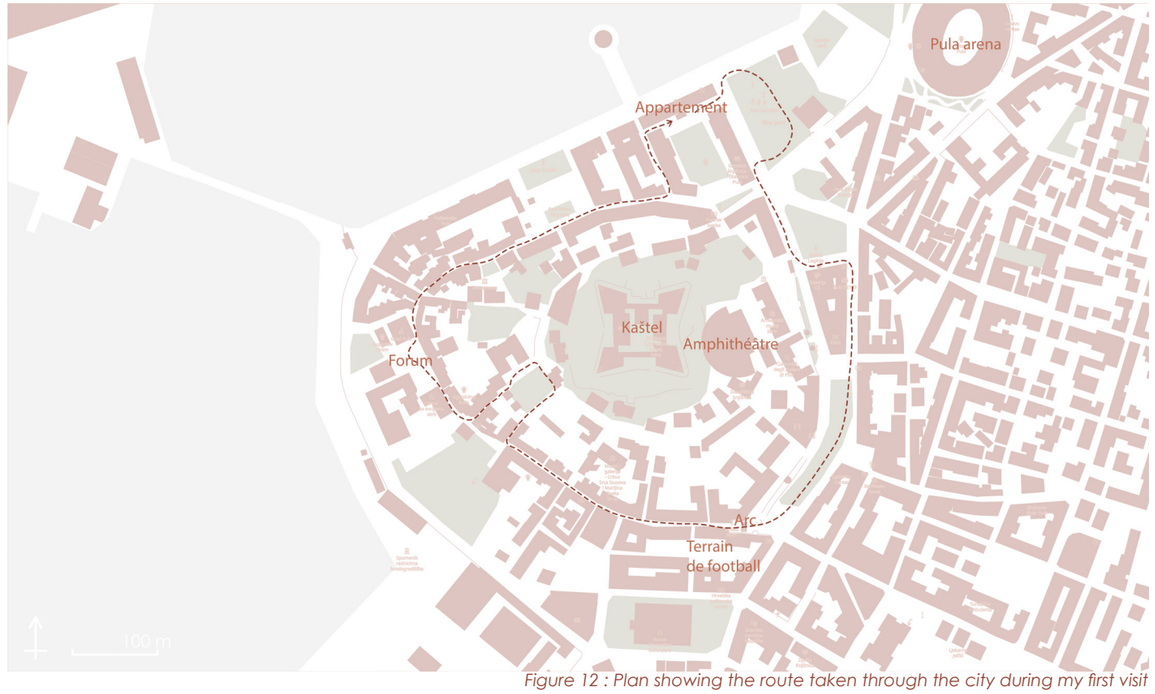


Figure 12 : Plan showing the route taken through the city during my first visit



Figure 13 : Photograph of Venetian-influenced façades in the historic centre of Pula



Figure 14 : Photograph of classical-influenced historic façades in the historic centre of Pula



Figure 15 : Photograph of the Cathedral of the Assumption of the Blessed Virgin Mary (Uznesenja Blažene Djevice Marije)



Figure 16 : Photograph showing the layering of different historical periods within the built fabric of Pula's historic centre



Figure 17 : Photograph of façades in the old urban fabric, combining exposed stone and coloured plasterwork in Pula's historic centre

From its ramparts, you can see the entire bay, the shipyard, the arena, and the sea. It is hot—full summer—and the shade of the alleyways is welcome.

In the main streets, though, it is a different story. Tourists are everywhere, mostly Germans and Italians, all clustered at the same spots. Yet my friend lives just a few streets away, and his daily life has nothing to do with any of that.

The coastline of Pula extends well beyond this tourist centre. To the south, Verudela and Stoja are primarily seaside areas. In the bay, there is the commercial port and the Uljanik shipyard. And to the north, former military installations. Each stretch of coast has its own life.

This fragmentation between inherited tourist, industrial, and military functions still structures the spatial organisation of the city today.

It is precisely to show me this other Pula, the one that escapes the guidebooks, that my friend suggests the next day taking me along the coastline further north, to a site away from all of that.



Figure 18 : Photograph of the coastal landscape in Pula: boat and coastal vegetation

ENCOUNTERING THE SITE

PHENOMENOLOGICAL DESCRIPTION OF THE SITE

I arrive from the city by walking along the seawall, which has been converted into a cycle path. The route begins in a very active environment.
Cars pass, cyclists cross each other, pedestrians adapt to one another. I walk looking everywhere; the sea is there on my left. It accompanies the journey without imposing itself.

Under my feet, the ground is hard and worn by traffic. My body advances with vigilance; the pace is rather quick.

After a few minutes, I leave this main axis and cross a wooden bridge. Beneath my feet, I notice old rails. At that precise moment, I feel a clear transition.

Suddenly, something changes. There is less noise, the vegetation closes in slightly around the path, and I enter the first part of the former military base.
The ground becomes less and less legible and less guided. The paths are freer. Here, I come across people on foot, on bicycles, often accompanied by dogs for a walk.

These are residents, regulars who come frequently. The atmosphere is calmer, almost gentle, and the trees quickly take up space.

The pines form a dense canopy. Reading the site becomes more complicated due to their height. The buildings appear in fragments, between the trunks and branches.
I can glimpse volumes without yet being able to understand them as a whole.
The place reveals itself little by little. This slowness invites me to walk more slowly and observe more.

I continue along the path on the seawall, inside the site. The air is cooler. It smells of pine—strong, Mediterranean, impossible to ignore. The sounds of the city have almost disappeared at this point.

I hear the wind in the branches, a few birds, and the regular rhythm of waves against the stones of the seawall.

The silence gives way to observation. Occasionally, openings appear between the trees. They form a kind of "frame" on the city. Through these natural windows, I see the different layers of Pula's architecture. The historic centre takes shape, and I often stop at these points because the view holds me.

Continuing on, the space changes again: the trees part and the light becomes stronger. I arrive in a more open area, at a crossroads of paths.

One axis crosses the site towards the sea, while the one I follow runs along the seawall inside the military base. This spot faces due south. The sun gently warms the skin. I feel a form of relief. My body relaxes.



Figure 19 : Photograph of one of the military buildings at the entrance to the site north of Pula

The quays appear clearly, with old boats laid there. Some painted with colourful patterns, others still in use. Grandfathers fish with their grandchildren while dogs play at the water's edge.

Everything is slow here, repetitive. The buildings reveal themselves gradually, aligned facing the bay. From the site, you look directly at the city opposite and the arena standing out in the middle.

The space is open, which completely contrasts with the dense pine forest we just crossed. Behind, the pines form a green wall that has developed since the site was abandoned.
I recognise military elements. Watchtowers punctuate the site; no one climbs them to keep watch anymore. I climb one with my friend, just for the pleasure of it.

From up there, the view is wide. The seawall of large stones that supports the site, a partially collapsed section at its base. A dog throwing itself into the water while its owner tosses a ball. The stone wall marking the boundary of the plot.

The wind blows gently; it smells of the sea. I enter the buildings. The volumes are large, much more than the facades suggest. Light enters through the openings, and each window frames a section of the bay. It almost looks deliberate.

The walls are of rendered brick, sometimes of exposed stone, with massive limestone bases. Certain ornamental details catch the eye.
Outside, the ground changes constantly. There is old tarmac, concrete, gravel, then large expanses of grass. Behind the buildings, the forest rises and forms a kind of natural barrier with the villages further north. The site truly has its own world.

I walk slowly, without realising it. My step adapts to the place. I stop often just because an opening in the trees or a framing towards the bay holds me. I take photos, then put my camera away.

I sit on a low wall, a step, a threshold. The stone is warm in the sun; the air circulates gently.
I stay for a long time without realising it. It is a place that makes you want to do nothing and just look.



Figure 20 : Photograph of an old watchtower on the coastline within the northern military site of Pula



Figure 21 : Photograph of everyday appropriation of the coastline: a dog in the water near the military site with its owner

At the beginning of my walk, leaving the city, I walked with care. My gestures were precise and my gaze alert. Upon entering the military base, the rhythm gradually shifted.
Sounds faded, the space widened. When I reach the open, sunlit zone of the site, my body relaxes further. My shoulders drop. My breathing becomes deeper. I feel straighter, without tension. A certain physical comfort settles in, linked to the light, the scent of pines, and the surrounding calm. I take time to anchor myself in the place, to remain still.

The movements around me are slow and spaced. Walkers advance without haste. Fishermen remain in the same spot for long stretches. This shared slowness influences my own posture.

My body harmonises with the environment. I feel present, attentive, and open. At the end of the walk, when I leave the site to return to the city, the change is obvious. Sounds become more numerous and closer. Voices, engines, and footsteps overlap. Movements accelerate. My body adjusts to this growing intensity. I walk faster. My attention recentres on myself.

This transition highlights what I experienced during my visit to the site through a striking contrast. The watchtower occupies a special place in my experience of the site; I climb it at every visit. Its slightly elevated position alters my perception of the surrounding space.

From this point, my gaze embraces the entire site: I see the stone seawall, the sea, the buildings, the trees, and the people strolling peacefully. I also see the city across the bay with its volumes and vibrant activity.
The wind is more present here; it caresses my face while carrying the marine scent with it.

I stay up there for a long time, sometimes in silence, sometimes exchanging a few words with a close friend.

From the watchtower, I feel a duality: I am both immersed in the site and stepping back from it.

This position allows me to observe without being swept along by the ambient movement; I feel calm, well-grounded, and oriented in this space. This point becomes a landmark during my walk: a place to rest my gaze and where my body finds a balance between the site itself, the surrounding landscape, and the adjacent city.



Figure 22 : Photograph of the large hall on the military site



Figure 23 : Photograph of former military buildings on the edge of the main site



Figure 24 : Photograph of an abandoned former military building, partially overgrown with vegetation

ENCOUNTERING THE SITE
ATMOSPHERES AND MATERIALS

The site reveals itself through its materials first and foremost. The low walls delimiting the plots are of local limestone—the same as in the city centre—laid dry or roughly jointed.

This stone is found again at the quay, in the form of large cut blocks that structure the waterfront. This heavily built quay contrasts with the image one might have of an abandoned site; it testifies to a planned development, to a relationship with the coastline that was once more organised.

The buildings are of rendered brick. The render is flaking in places, revealing the masonry underneath. On some facades, tags and graffiti. The site has been frequented for a long time by people who ask no one's permission.

Inside, the timber roof structures are remarkably well preserved, with joints still solid despite the absence of maintenance. T
he roofing, however, is of asbestos-cement sheeting, a material widely used in construction in the second half of the 20th century in the former Yugoslavia[13]. Their replacement would be a prerequisite for any rehabilitation.

[13] Asbestos-cement sheeting (Eternit type) was widely used in Yugoslav industrial and military buildings from the 1950s to the 1980s. Its use is now banned in Croatia in compliance with European regulations.



Figure 25 : Photograph of remnants of abandoned equipment on the site



Figure 26 : Satellite view of the site and its relationship to Pula's historic centre

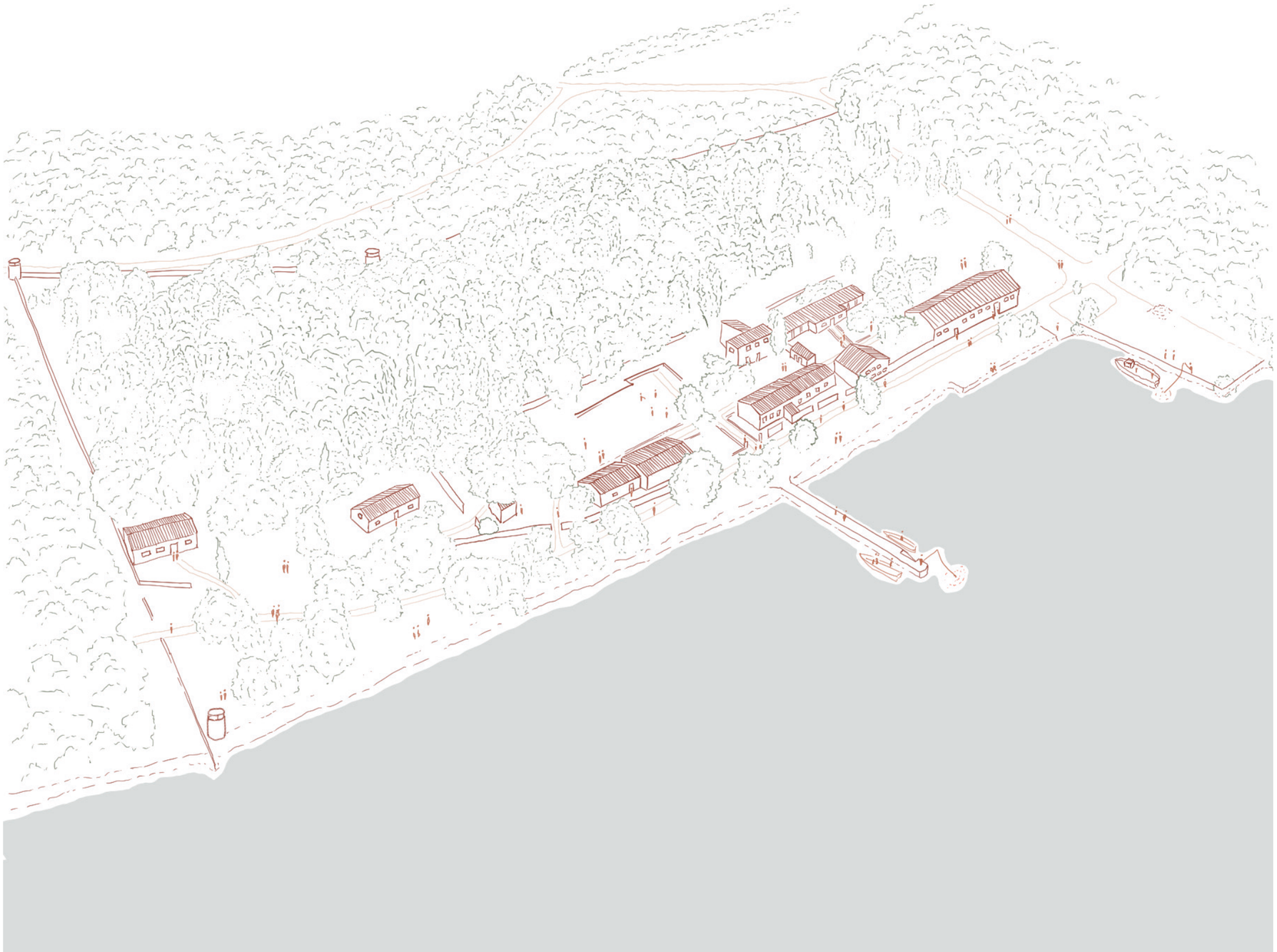


Figure 27 : Axonometric drawing of the mentioned plot within the military site north of Pula



Figure 28 : Site plan showing the former military functions

The site is organised in strips that follow the coast. At the very back is the pine forest—dense, dark, and smelling strongly of pine, especially in the heat.

Then there are more open areas, green spaces where grass alternates with mineral surfaces.

Next comes the built strip: four buildings aligned facing the sea along the main axis, two more deteriorated buildings at the rear that appear to have served as barracks and vehicle garages, and two storage buildings on the left part of the site.

Between the pine forest and the sea, one moves progressively from covered to uncovered space. This is what gives the site its depth. Nature has reclaimed a great deal: ivy on the walls, grass between the stones of the quay.

But the quay holds well. The large limestone blocks are still in place. The mooring points too; locals still tie their boats there.

This coexistence between the built and the vegetal, between abandonment and persistent use, gives the site a feeling of being suspended between two times—which greatly intrigued me.



Figure 29 : Photograph of a disused hall in the western part of the site



Figure 30 : Photograph of former military buildings on the edge of the site



Figure 31 : Photograph of the open green spaces at the rear of the military site plot



Figure 32 : Photograph of a building used for storage on the site

Figure 33 : Photograph of the roof structure of one of the small halls located to the west of the northern military site plot



Figure 34 : Photograph of the interior of one of the small halls located to the west of the northern military site plot





Figure 35 : Photograph of the interior of a former military building on the edge of the northern military site plot



Figure 36 : Photograph of a former boat hangar adjoining the mentioned northern military site plot

Figure 37 : Photograph of the interior of one of the small halls located to the west of the northern military site plot



Figure 38 : Photograph of former interior openings in one of the small halls located to the west of the northern military site plot





Figure 39 : Photograph of former interior openings in one of the small halls located to the west of the northern military site plot



Figure 40 : Photograph of former interior openings in an old building on the site, framing the historic city centre

Figure 41 : View from Google Street View showing the Pula coastline, reworked by the author



Set back from the main axis, two former storage buildings are entirely of local limestone. There is no brick here, unlike the rest of the site. The walls are thick, keeping the interior cool even in midsummer.

The timber roof structures, well preserved, reveal rather refined construction craftsmanship.

A false ceiling currently conceals the structure of the easternmost building, but its condition suggests that little effort would be needed to reveal the full roof structure, which would considerably enlarge the interior volume.

The orientation of the buildings allows pleasant natural lighting; the light that enters is soft, filtered. I found the volumes generous and calming, in contrast with the austere appearance of the exterior facades.

These two halls probably served to store military equipment.

Given their condition, they are entirely reusable. The structure holds and the volumes are there.



Figure 42 : Diagram of the site situation: two halls located to the west

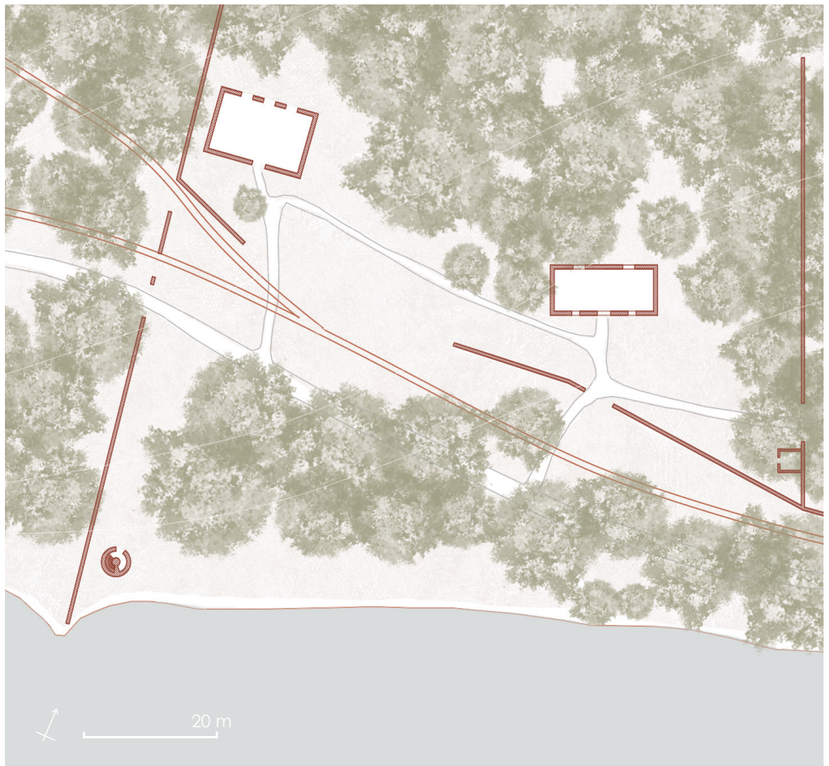


Figure 43 : Site plan showing the Austro-Hungarian storage halls



Figure 44 : Photograph of the left Austro-Hungarian hall



Figure 45 : Photograph of the right Austro-Hungarian hall



Figure 46 : Elevation from the waterfront of the Austro-Hungarian storage halls

Facing the sea, four buildings are aligned along the main axis of the site. Limestone walls extend their walls and delineate the surrounding spaces. Three of these buildings date from the Italian period, with rendered brick.

The fourth, a large hall, is older and most likely dates back to the Austro-Hungarian period. Its base is of large cut stone, giving it a massive foundation, while the upper part, in rendered brick, is pierced by high openings that bring generous light into the interior and could provide good ventilation.

This building is clearly more imposing than the other three, and better built.

You can see it in its large roof structure.
All of these elements occupy a particular position, creating the transition and link between the open areas at the rear and the seafront quay.

The four buildings form an almost continuous front, but not entirely. Occasionally between these volumes, gaps allow views of the site from the quay, and light passes through. From the sea, you glimpse the pine forest beyond. From the interior, you see the water.



Figure 47: Photograph of disused former military buildings on the edge of the site



Figure 48 : Photograph of disused former military buildings on the edge of the site



Figure 49 : Diagram of the site situation: waterfront buildings ; former barracks and large hall



Figure 50 : Elevation of the waterfront buildings

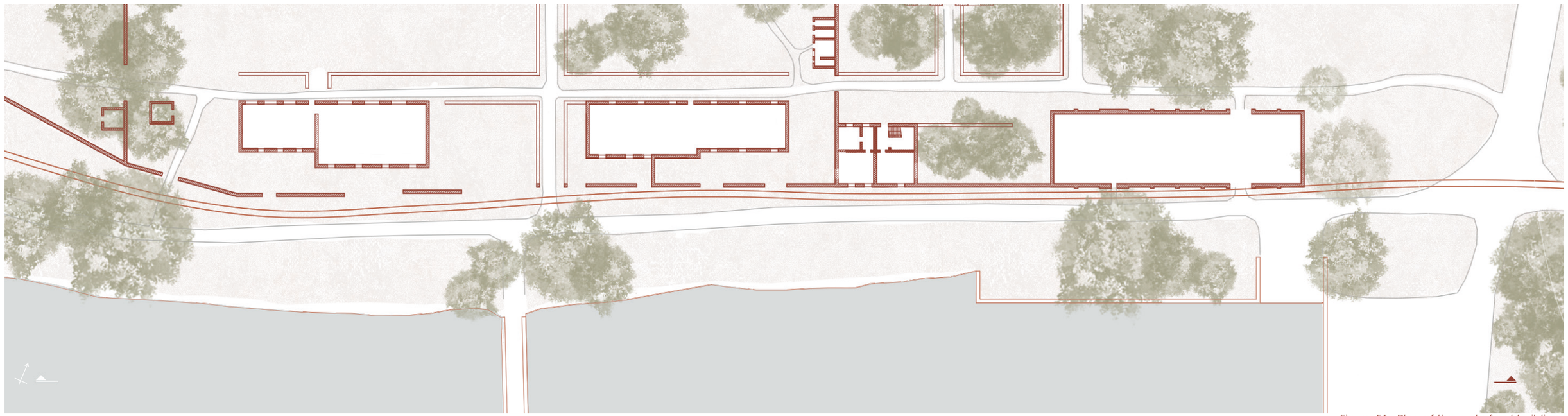


Figure 51 : Plan of the waterfront buildings

At the rear of the site, set back from the main axis, there are two more discreet buildings.

The first evokes a former barracks with different rooms of varying sizes, while a second building to the right, composed of several cells, suggests maintenance workshops for vehicles or utility purposes.

A cell is located at its centre, and the perimeter of these buildings is concreted.

Their positioning departs from the logic of the other constructions on the site; they no longer follow the seafront alignment and do not participate in the direct relationship with the coastline in the same way as the others.

Positioned closer to the wooded mass at the rear, they are increasingly overtaken by vegetation spilling over from the adjacent pine forest.



Figure 52 : Diagram of the site situation: buildings at the rear of the site ; former barrack and storage/garage building

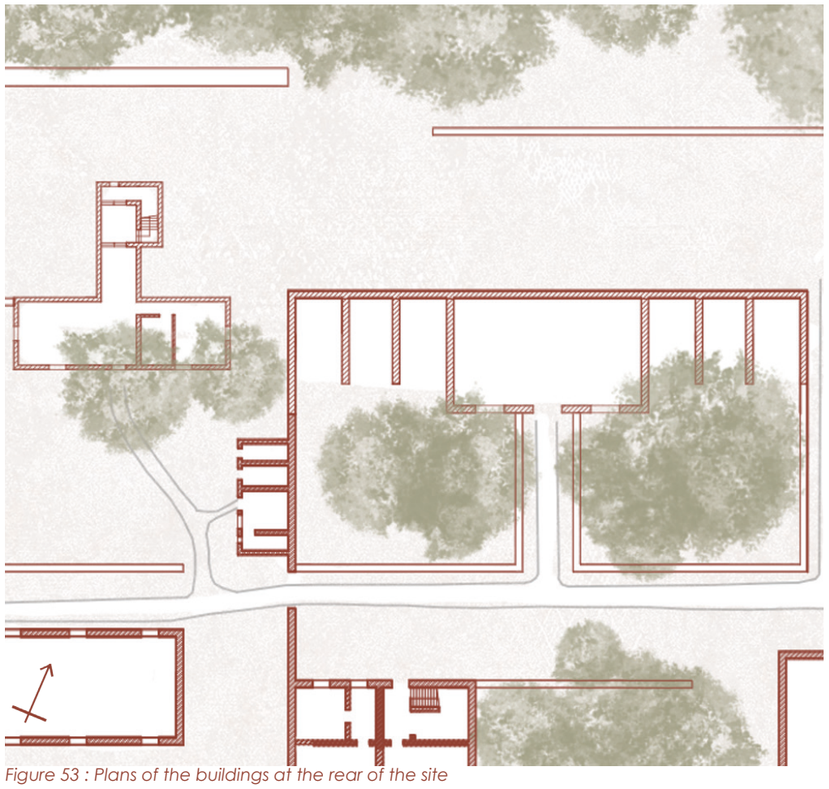


Figure 53 : Plans of the buildings at the rear of the site



Figure 54 : Photograph of the former barrack at the rear of the site and the vegetation reclaiming it



Figure 55 : Photograph of the former garage/storage units

The site is structured by various formerly defensive walls built of local limestone. These walls accompany the seafront buildings and extend their footprint while delineating outdoor spaces.

In places, these walls continue towards the rear of the site and disappear into the pine forest.

The pines have half-swallowed them. Between the walls, a few openings let the gaze pass through—here towards the sea, there towards the forest. Lower walls complete the whole and carve out smaller spaces within the site.

The ensemble forms a mineral framework that links the different parts of the site together, maintaining spatial coherence in a place where abandonment could have made perception of the site much more complicated.



Figure 56 : Photograph of the site's former defensive walls



Figure 57 : Photograph of the open green space at the rear of the site

The site's ground is predominantly vegetal, covered with a red earth characteristic of the region: the terra rossa (crvenica in Croatian), a clay soil typical of Mediterranean karstic zones formed by the dissolution of the underlying limestone[14].

This earth contrasts with the green of the vegetation and the white of the limestone walls.
The main axes along the seafront are asphalted—remnants of former military roads still usable today.

The limestone quays run along the entire seafront and mark the boundary between the site and the water.

Together with the walls and buildings, they form the only mineral surfaces of the site. The rest is earth and vegetation.

[14] *Škorić, A., Mayer, B., Vranković, A., Bašić, F., Pedološka karta Istre / Soil Map of Istria, 1:50 000*



Figure 58 : Satellite view from Apple Maps showing the extent of vegetation cover on the site



Figure 59 : Photograph upon arrival at the site, showing the large hall and waterfront buildings



Figure 60 : Photograph of the open green space viewed from the rear of the site

ENCOUNTERING THE SITE
CURRENT USES OF THE SITE

Despite its status as an abandoned site, the place is far from deserted. On the contrary, it is inhabited by a multitude of informal uses, driven exclusively by the residents of Pula.

On the quay, I could see fishermen of all ages taking turns: grandparents, fathers, sons—sometimes all three together.
Boats come to moor at the bollards still in place, and some owners haul their craft onto the main quay to repair or tinker with it right on the stone.

At the rear of the site, in the green spaces, people play football and kick balls around on the grass. On the path along the bay, people move about. Bikes, runners, walkers with their dogs. Everyone crosses paths without really bothering each other.

It is the default place for a walk, which reminds me a bit of home: in the same way that where I come from in Dunkirk we say "faire une digue" (do the seawall walk) to go walking by the sea and escape from everyday life a little, the Puljanis come here for their daily stroll.

The site even hosts occasional events. The biker gathering of the Mini Festival is one example. Families, groups of friends come to set up tents and folding tables on the site, set up barbecues, and play music in the large green spaces with a small stage.

The site, which is unregulated, transforms into an open-air party venue with a form of spontaneity that also struck me greatly.

Another element that caught my attention is that you only hear Croatian spoken here. There are very few tourists, no signs in English or German, no café terraces.

Barely a thousand metres from the historic centre, saturated with visitors, this site functions as a separate space, silently appropriated by those who live in Pula all year round.

And it is here that I asked myself the question: "Why here? Why this particular site has become the place where residents come together?"



Figure 61 : Photograph of a boat moored near the site, bearing witness to the nautical uses of the coastline



Figure 62 : Photographs of the everyday use of the site as a walking area



Figure 63 : Photograph of an informal practice — fishing from the quay — with Pula's historic centre in the background



Figure 64 : Photograph of an abandoned boat on the site's coastline

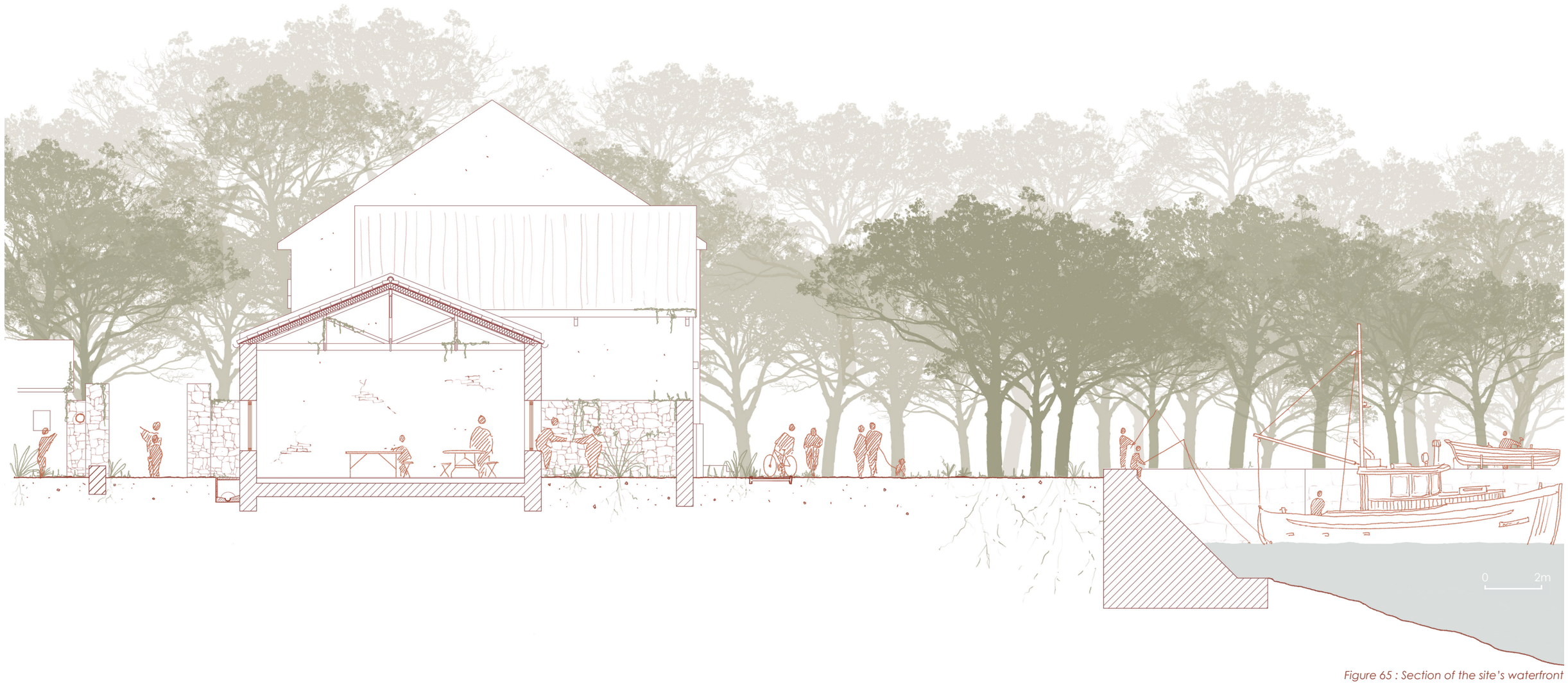


Figure 65 : Section of the site's waterfront

PRESENT OBSERVATIONS
TOURISM PRESSURE

If the residents of Pula spontaneously gather on this neglected site on the northern coastline, it is partly because the spaces to which they could lay claim elsewhere are progressively slipping from their grasp.
For several decades, Istria has experienced a tourist attractiveness that only continues to grow, thanks to the promotion of its historical heritage and its coastline.

The County of Istria is today the leading tourist destination in Croatia; in 2024, it recorded approximately 27.9 million overnight stays, i.e. nearly 30% of the national total[15].

German tourists represent the largest foreign clientele, followed by Austrians, Slovenians, and Poles[16].

In the first seven months of 2024, the city welcomed nearly 260,000 tourists for approximately 1,085,000 overnight stays, representing a 6% increase in arrivals compared to the same period in 2023[17].

With a population of around 52,000 inhabitants[1], the city sees its visitor numbers rise sharply during the summer season, when tourist flows multiply the population present on the territory.
In the first seven months of 2024, the number of tourists welcomed (260,000) represents approximately five times the resident population of the city[17].

During the summer season, over 60% of annual overnight stays are recorded in Istria[16].

These developments have progressively influenced the uses of the coastline and the historic centre of Pula, which is the primary city of this region.

[15] *Državni zavod za statistiku (DZS), "Tourist Arrivals and Nights in Commercial Accommodation, 2024 "*

[16] *Državni zavod za statistiku (DZS), "Tourist Arrivals and Nights, August 2024 "*

[1] *Državni zavod za statistiku (DZS), Popis stanovništva 2021.*

[17] *Total Croatia News, "Pula Tourism Growth Encouraging, With Increases Compared to 2023 "*

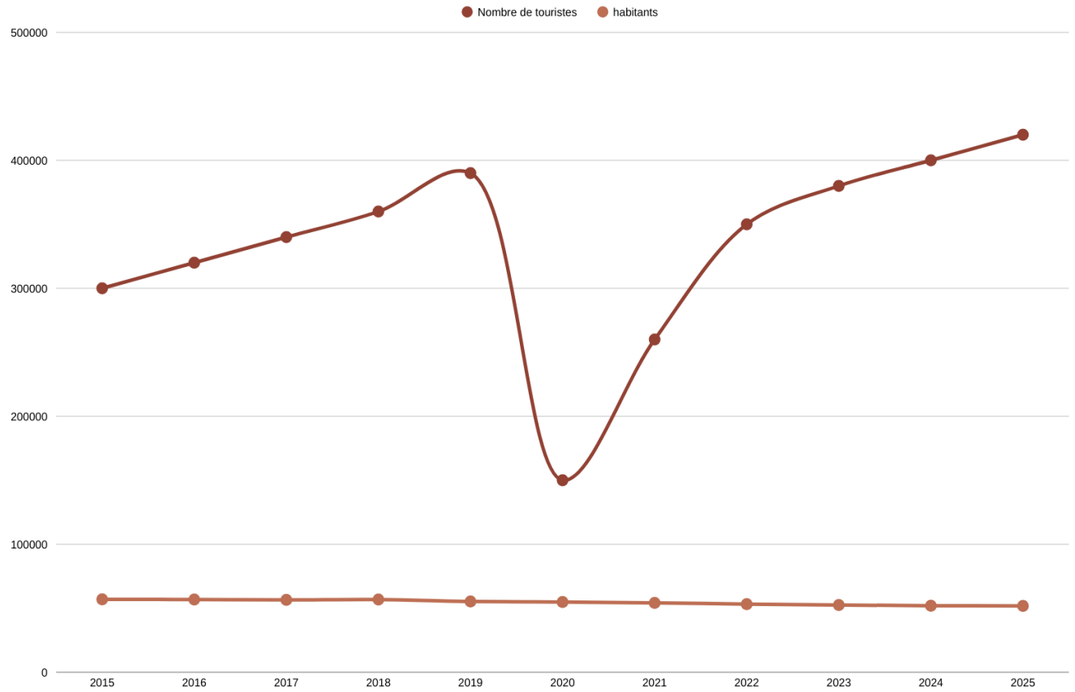


Figure 66: Graph showing the resident/tourist ratio

Public spaces become places of seasonal intensification, taken over by passing footfall that transforms their character: spreading of terraces into public space, opening of seasonal shops, crowded alleyways.

The coastline from Verudela to Stoja testifies to this, as it is largely given over to seaside tourism.

The historic centre around the Forum and the arena absorbs most of the visitor flows, while the former port and military infrastructure remains on standby in relation to these dynamics.

It is precisely in this gap that the northern coastline site takes on its full significance.

The spontaneous appropriation observed above appears as a direct response to this pressure: faced with an increasingly touristic coastline, residents fall back on the only spaces still accessible to them—those that nobody has yet thought to develop or monetise.

Interviews conducted on site confirm this dynamic. Filip Brekalo, Marko Pauković, and Marko Hrebak, all three residents of Pula met in July 2024, describe the northern coastline site as a breathing space in a city where the waterfront is increasingly difficult for locals to access[39].

This perception of the site by these residents shows that the appropriation of the site responds to a lack of public waterfront spaces in the city for its inhabitants.

[39] *BREKALO, Filip (2025), entretien personnel réalisé à Pula, Croatie, le 26/10/2025 ; PAUKOVIĆ, Marko (2025), entretien personnel réalisé à Pula, Croatie, le 27/10/2025 ; HREBAK, Marko (2025), entretien personnel réalisé à Pula, Croatie, le 29/10/2025.*

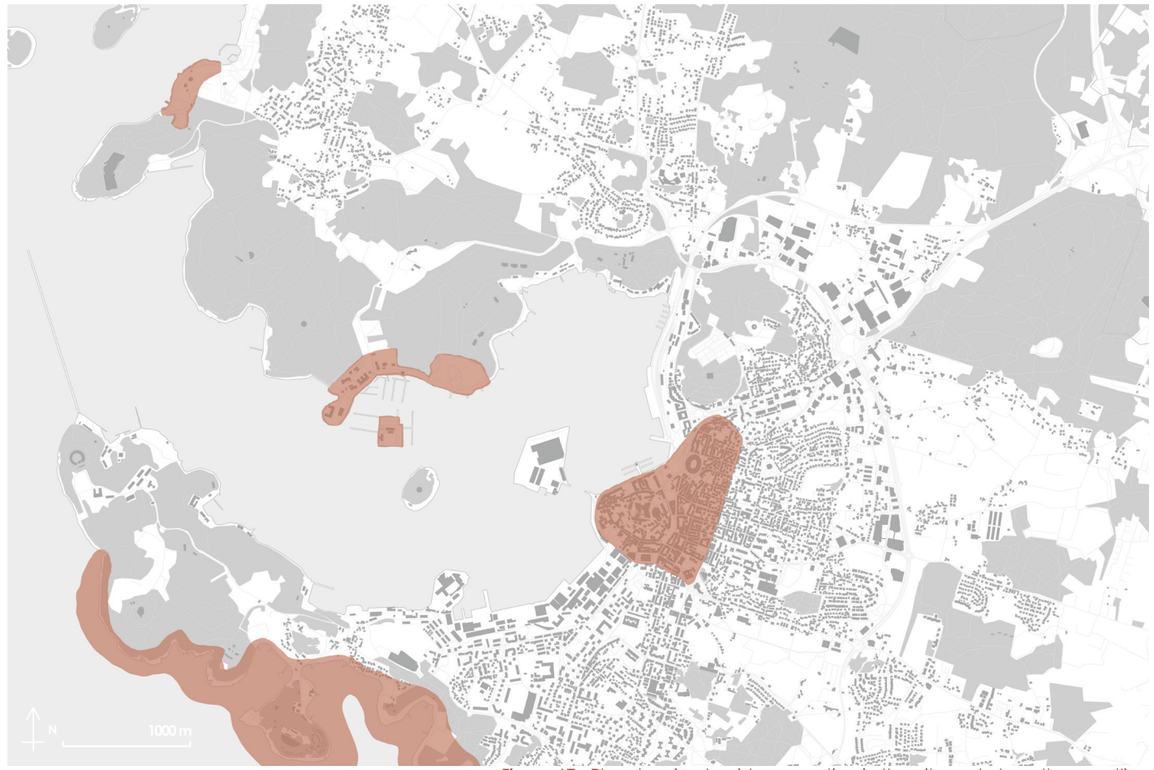


Figure 67 : Plan showing tourist occupation in the city and along the coastline

PRESENT OBSERVATIONS
THE CASE OF THE MONUMENTI HERI-



Figure 68 : Photograph of the Monumenti Hotel, source: Marina 21, modified by the author

The conversion of the Monumenti naval complex, located on the western side of Pula's bay, precisely illustrates this dynamic. This former Austro-Hungarian military site, left abandoned for decades, was the subject of a major investment by the company Kermas Istra, which obtained a 50-year concession on the site[18].

The former barracks became a five-star hotel. A 450-berth marina was added, with infrastructure clearly targeting an international clientele[19].

Two historic buildings were rehabilitated and a contemporary glazed wing was added, completing the complex with 40 rooms and 8 suites. Although the intervention contributes to the economic reactivation of the site, it comes with a significant transformation of the waterfront.

There is extensive ground sealing, the creation of a private beach, and a spatial organisation primarily dedicated to tourist uses.

This approach raises questions about the place afforded to residents in these new coastal landscapes, as it contributes to a kind of specialisation of the coastline where waterfront spaces become primarily economic destinations rather than places of everyday life for local populations.

The Vallelunga site is in the same situation today. Nothing prevents the site from taking the same path as Monumenti.

[18] *Marina 21 Group, " Updates on Heritage Hotel & Resort Monumenti "*

[19] *Croatia Week, " New luxury heritage & resort hotel Monumenti opens in Istria "*



Figure 69 : Satellite view from Apple Maps showing the project site before



Figure 70 : Satellite view from Apple Maps showing the project site after

PRESENT OBSERVATIONS
RESEARCH QUESTION AND POSITIONING

The case of the Monumenti Heritage Hotel illustrates a broader trend: in Pula, the coastline inherited from the military past is gradually being transformed, but according to a logic of tourist valorisation that leaves little room for the everyday uses of residents.

Yet it is precisely these informal uses that reveal the true needs of the local population. Formalising them rather than replacing them means ensuring that the site's conversion starts from a base that already works, instead of imposing a programme disconnected from the practices of the place.

Part of the bay is still occupied by military sites that are no longer in use. The Monumenti complex has been converted, but other sites like Vallelunga, on the northern coastline, have not changed. They are however right next to the historic centre and along the coast. Their future raises an essential question: in what way can these spaces be transformed without losing their landscape, memorial, and collective dimensions?

The research question of this work falls within this tension. It questions the capacity of a military brownfield on the coastline to become a support for contemporary uses rooted in the daily lives of inhabitants. More precisely, it is about understanding how the conversion of a military site on the bayfront can help meet local needs while respecting the territorial identity of Pula.

The question formulated is therefore the following:

"How can the conversion of a coastal military brownfield meet the needs of the inhabitants of Pula?"

Faced with the densification dynamics observed in many European coastal contexts, this work adopts a clear positioning: working from the existing, reactivating what is there rather than replacing it.

The quays, the halls, and the inherited buildings are already there. The aim is to make use of them, both for what happens there today and for what could take root tomorrow.

This stance implies thinking of the brownfield as something to transform, where the site's value lies in its solids and voids, its vegetation, its views of the bay, and its open atmosphere—but above all in the practices that have spontaneously settled there.

Reinvesting this coastline means in this case revealing its hosting capacities through interventions at the right scale and, above all, in keeping with local practices.

The objective of this thesis is to propose a form of coastal third place, a shared workshop, a hybrid space between public facility and informal living place, which reinforces territorial continuities, but above all supports local know-how and fosters forms of everyday sociability that deeply moved me there.

PRESENT OBSERVATIONS
METHODOLOGY

This work is based on a cross-disciplinary approach combining territorial analysis, historical reading, sensitive observation, and comparative study. The methodology adopted rests on a constant back-and-forth between understanding the context and developing the project.

First, documentary analysis helped me understand the historical formation of Pula and how the coastline is structured. Various documents (historical, urbanistic, and cadastral maps) served to establish a reading of the former military and port occupation, still present around the bay.

It was at this stage that I began to see what had persisted from one period to another and what had been broken, particularly along the coastline.

In parallel, on-site observation was carried out to record, on the one hand, the atmospheres, but also the contemporary uses and informal dynamics of the site. The various walks on foot and by bicycle around the bay, as well as exchanges with residents, helped improve the understanding of the territory.

This rather empirical dimension anchored the reflection in everyday reality rather than in a purely theoretical reading.

Finally, I studied several cases of military and port site conversions in Europe to see what had worked elsewhere, how, and what could apply to Pula.

II. A CITY SHAPED BY THE SEA AND DEFENCE

HISTORICAL STRATIFICATION
ANCIENT CITY AND MARITIME CONTINUITY

Before the arrival of the Romans, the territory of Pula was occupied by the Histri, an Illyrian people who gave their name to the peninsula. Settled from the 10th century BC, they organised their habitat around fortified hilltops called gradines, including the one that would become the centre of the Roman city[20].

These hilltop settlements testify to an ancient occupation of the territory, oriented towards defence and visual control of the bay. The Roman conquest of Istria was completed in 177 BC with the fall of Nesactium, the capital of the Histri, located a few kilometres south-east of Pula[21].

Rome then established military garrisons along the coast to control the maritime routes of the northern Adriatic, and a first civilian settlement developed around the natural harbour of Pula[21].

Although an ancient settlement, Pula attained the rank of Roman colony between 46 and 45 BC, under Julius Caesar, and took the name Colonia Pietas Iulia Pola.

It was then both a port and an important commercial centre for the empire. The city is distinguished from other Roman colonies by its radial plan, probably inherited from the pre-Roman settlement.

This spiral plan, visible on the old street map of the city centre (fig. attached), still structures the urban fabric of the historic centre today. The city was destroyed during the civil war of 42 BC for having sided with Brutus and Cassius, before being rebuilt at the request of Augustus's daughter and renamed Colonia Pietas Iulia Pola Pollentia Herculanea[21].

Stepping back, one sees that Pula is part of a broader network. The Romans organised the territory around roads and access to the coast, and the city connects to it.

The Romans endowed the city with a forum overlooking the bay, with the Temple of Augustus (built between 2 BC and 14 AD), temples dedicated to Jupiter, Juno, and Minerva, a water supply and sewage network, and a city wall pierced by ten gates, some of which are still visible today: the Gate of Hercules, whose inscription bears the names of the colony's founders, the Porta Gemina (twin gates), and the Arch of the Sergii, a private triumphal arch erected by the Sergi family in the 1st century BC[22].

The amphitheatre, built between 27 BC and 68 AD, could hold approximately 23,000 spectators and remains one of the six largest Roman amphitheatres preserved in the world[23].

[20] *povijest.hr, " Pula kao spomenik austro-ugarske "*

[21] *World History Encyclopedia, " Exploring Classical Pula, Croatia "*

[22] *Povijesni i pomorski muzej Istre, Pula Fort Center*

[23] *Spectacula Antiqua," Arena Pula "*



Figure 71 : Map of the Roman Empire

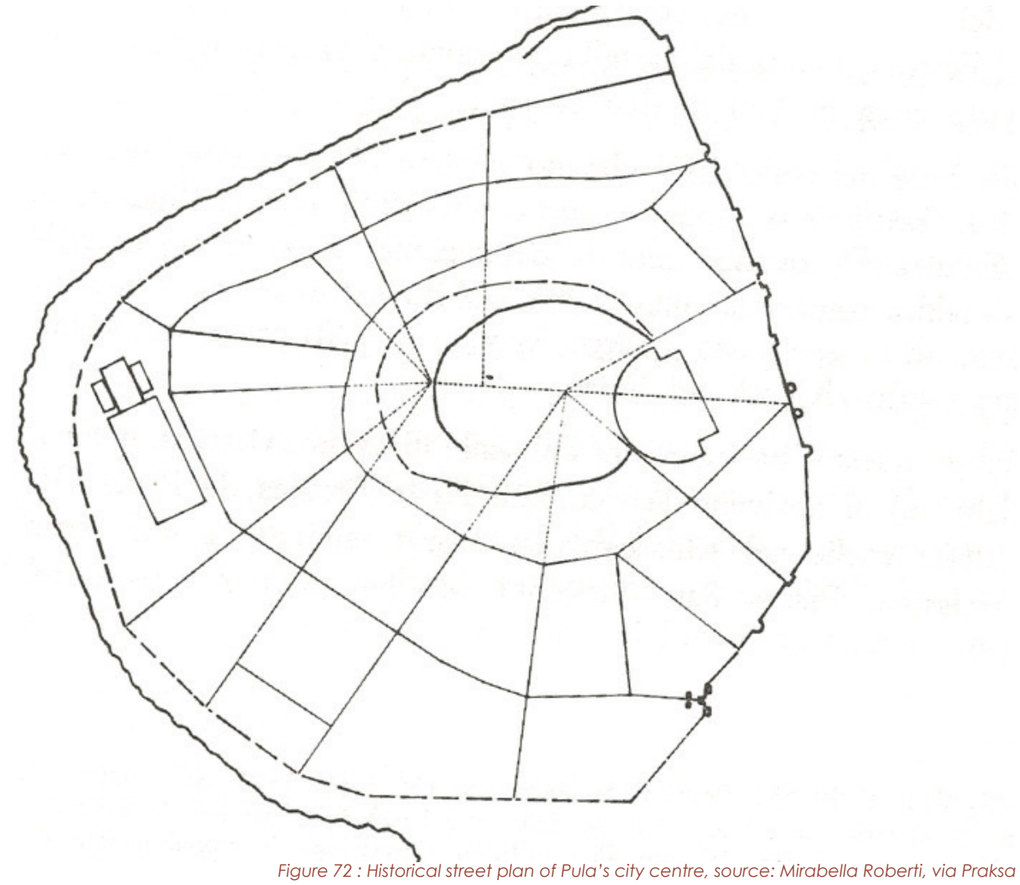


Figure 72 : Historical street plan of Pula's city centre, source: Mirabella Roberti, via Praksa

At its peak, the city's population reached approximately 30,000 inhabitants[21]. Port activity played a central role in the prosperity of the colony.

The bay, deep and sheltered from the winds, offers an ideal natural anchorage. Maritime trade was organised around the export of olive oil, wine, and salted fish, transported in Istrian amphorae recognisable by their characteristic ovoid shape.

Remains of these amphorae are displayed in the underground galleries of the amphitheatre[21].

As today, the port linked Pula to other Adriatic cities and to the great commercial networks of the Mediterranean, making the city a kind of very important maritime crossroads for the region.

The forum was also located by the sea, the port became the economic engine of the colony, and the entire urban structure of the city organised itself in direct relation to this coastline.

This link between the city and the water would traverse all subsequent eras. Every power that took control of Pula recognised in this bay a major strategic asset, and each time, the consequences on the accessibility of the coastline for inhabitants were affected.

This is the thread we will find again from Venetian domination to Austro-Hungarian militarisation, then under the Italian regime and during the Yugoslav period.

[21] *World History Encyclopedia, "Exploring Classical Pula, Croatia"*

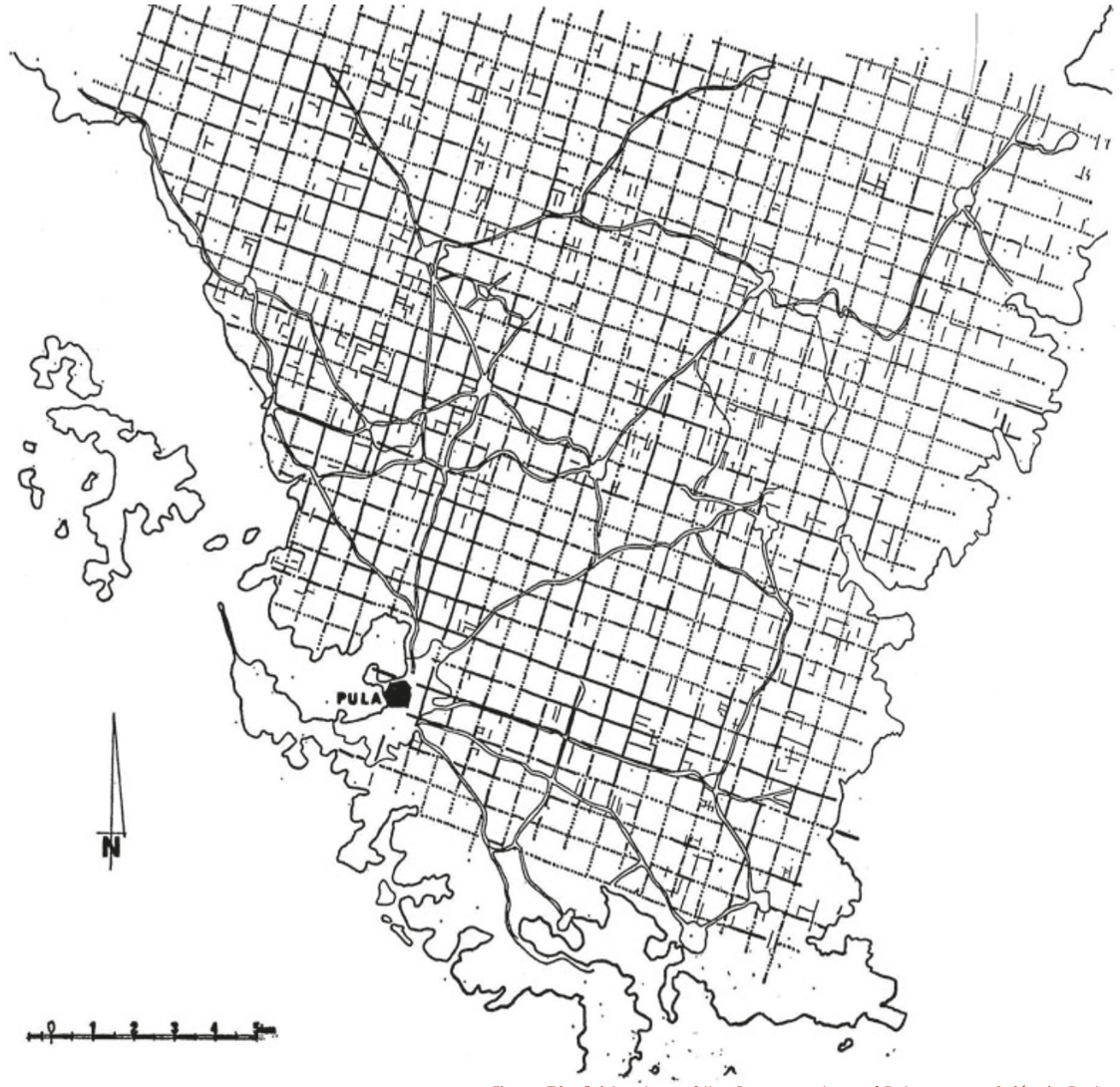


Figure 73 : Grid system of the Roman colony of Pula, source: Suić, via Praksa



Figure 74 : Photograph of the Pula Arena



Figure 75 : Photograph of the Pula Arena



Figure 76 : Photograph of the Temple of Augustus (Augustov hram)

HISTORICAL STRATIFICATION
AUSTRO-HUNGARIAN MILITARISATION AND FORTIFICATIONS

After centuries of Venetian domination followed by a brief Napoleonic period, Pula came under Austrian control at the beginning of the 19th century. At that time, the city was a small fishing village of barely 1,100 inhabitants[24].

[24] *povijest.hr, " Pula kao spomenik austro-ugarske "*

The bay, which had made the fortune of the Roman colony, was then barely in use. In 1848, everything shifted.

That year, the revolution in Italy prompted Danish Admiral Hans Birch Dahlerup, commander-in-chief of the Austrian navy then based in Venice, to recommend transferring the fleet to a safer port[25].

[25] *Glas Istre, " Pula kao ratna luka mora na UNESCO-ovu listu "*

Pula was chosen because its geographical position made it an ideal site, and from 1850, fortification works began.

In 1856, the cornerstone of the Naval Arsenal was laid in the presence of Emperor Franz Joseph I[24]. Within a few decades, Pula went from a fishing village to the main military port of the Empire.

The Arsenal occupied the heart of the bay with shipyards, dry docks, fuel depots, and repair workshops.

Around this central infrastructure, a fortification system was put in place: 27 forts for approximately 60 batteries, organised in three concentric rings[26].

[26] *Tourist Office Pula (pulainfo.hr), " Fortifications de Pula "*



Figure 77 : Map of the Austro-Hungarian Empire

The first ring protected the harbour entrance. The second covered the city itself. The third extended beyond the city.

This system made Pula one of the best-fortified naval bases in the Mediterranean, comparable to the great European military ports of the time[26].



Figure 78 : Map of Pula showing the defensive fortifications along the coastline

The urban extension followed military logic. The new Austrian road network superimposed itself on the old fabric inherited from the Roman era and medieval routes, creating a palimpsest of road systems still legible today.

The old routes follow the natural relief of the coastline. The 19th-century roads take up the Roman grid and extend it towards the port.

The Austrian breakthroughs are different: they impose an orthogonal grid dictated by military needs—serving the Arsenal, accessing the barracks, linking the forts together.

This superposition testifies to the way each era left its mark on the territory without entirely erasing the previous one.

From 1,100 inhabitants in 1850, Pula reached 58,562 inhabitants in 1910[27]. The urban extension illustrates this growth in three phases.

In 1850, the city was organised around the Kaštel hill, concentrated between the forum and the ancient port. Forty years later, the built fabric had spread south and west of the bay, drawn by the Arsenal, barracks, and associated housing.

By 1910, Pula covered the surrounding peninsulas and fortified hills—58,562 inhabitants, compared to 1,100 sixty years earlier[27].

This extension follows the coastline, confirming that it was indeed the military presence on the coast that dictated Pula's urban form during this period.

What is fundamental for understanding Pula's current coastline is that this militarisation was accompanied by a progressive closure of the shore. The coastline, which under the Roman era was a space of commerce and open exchange, became a defensive apparatus forbidden to civilians.

This logic of military closure of the shore would continue under subsequent regimes, and its traces are still visible today, including on the northern coastline site that is the subject of this work.

[27] Državni zavod za statistiku / Wikipedia, " Pula, census 1910 "



Figure 79 : Types of road systems in the Austrian urban expansion, source: Jurcan, via Praksa, modified by the author

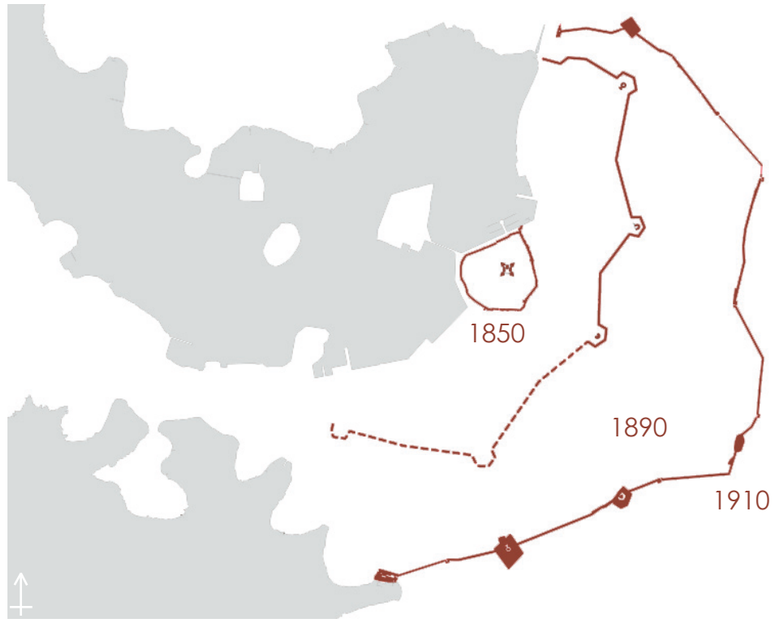


Figure 80 : Expansion of the city during the Austro-Hungarian period, source: Praksa, modified by the author

HISTORICAL STRATIFICATION
FROM ITALIAN RULE TO THE YUGOSLAV PERIOD

At the fall of the Austro-Hungarian Empire in 1918, Pula and all of Istria passed under Italian sovereignty. The city, renamed Pola, became the capital of the Province of Pola.

The transition was brutal: the dismantling of the Austro-Hungarian military and bureaucratic apparatus, which employed over 20,000 people, and the partial closure of the shipyards caused a deep economic crisis and immediate demographic decline[28].

[28] Wikipedia, " Pula ", section " Italian rule and World War II "

Photographs from the period still testify to the importance of the inherited naval infrastructure and the density of the fleet in the bay.

Under Mussolini's fascist regime, the non-Italian-speaking population, and particularly the Croats who arrived under Austro-Hungarian administration, suffered severe political and cultural repression. Many left the city for the newly created Yugoslavia[28].

The military infrastructure of the coastline remained active: Pula retained its function as a naval base, and the lockdown of the coast inherited from the Austro-Hungarian period continued under Italian administration.

The regime added new installations, including the Royal Italian Submarine School (Regia Scuola Sommergibilisti), built between 1941 and 1943 on the Monumenti peninsula[29]—the same site now converted into a luxury hotel.

[29] Hotel Monumenti, " History "

The Second World War worsened the situation. After the fall of Mussolini, the Wehrmacht occupied Pula and the bay once again became a German submarine base.

The city was then bombed several times by Allied forces between 1944 and 1945, causing the destruction of many buildings in the urban fabric[28].



Figure 81 : Austro-Hungarian fleet in the port of Pula, source: Roads to the Great War



Figure 82 : Historical aerial view of the port of Pula, circa 1900, source: Croinfo



Figure 83 : Austro-Hungarian map from 1916 showing the extent of the military system at its height, with its coastal forts, artillery batteries, and the Naval Arsenal occupying the heart of the bay, source: Gsida2 / Flickr

At the end of the conflict, virtually the entire Italian-speaking population left the city: between 1946 and 1947, it is estimated that 32,000 of Pula's 34,000 Italians emigrated to Italy, leaving the city almost deserted[30].

This significant exodus created a kind of important demographic and cultural rupture in the city's history.

After two years of Anglo-American allied administration, Pula was officially attached to the Federal People's Republic of Yugoslavia on 15 September 1947, following the Paris peace treaties[28].

The city was repopulated with people from neighbouring regions, but the inherited military infrastructure did not move.

The Yugoslav army reused some of the Austro-Hungarian and Italian installations. My friend's father, incidentally, served at the Vallelunga site, which was still an active base. The coastline thus remained closed to civilians.

Yugoslav urban planners eventually noted the problems this situation posed, as evidenced by the document "Kritika stanja i mogućnosti" (Critique of the Current State and Possibilities).

It explicitly identifies the city's structural problems: uncontrolled urban sprawl towards unfavourable inland terrain (point 3), industry implanted chaotically in the urban fabric, unregulated traffic nodes (point 2), and above all the impossibility of exploiting the natural coastal spaces for housing and recreation due to limited connection with the south of the bay[31].

This diagnosis, made over sixty years ago, describes with precision the conditions still observed today on the northern coastline of Pula.

[30] *Wikipedia, " Istrian-Dalmatian exodus "*

[28] *Wikipedia," Pula ", section " Italian rule and World War II "*

[31] *praksa.hr, " Map Story "*



Figure 84 : Southward expansion of Pula according to the 1964 master plan, source: Jurcan, via Praksa, modified by the author

1 – The Šijana neighbourhood developed in an unplanned and chaotic manner → regulation is needed

2 - Unregulated traffic nodes

3 - Unplanned extension of the city towards the interior, on poorly suited terrain → it must be stopped

4 - Road network characterised by an overly rigid and unsuitable geometry, with exceptionally small blocks and large road surfaces

5 - The traffic plan, designed without regard for the terrain's configuration, now creates major difficulties for the normal flow of traffic

6 - The connection with the south is only achieved through Boris Kidrič Street and partially through Butorac; greater use of these exceptional natural spaces for housing and recreation is impossible.

7 - Industry implanted in an unplanned manner within the urban fabric already constitutes a serious problem today and prevents normal organisation and expansion

MILITARY HERITAGE AND FRAGMENTATION
NAVAL BASES AND PORT INFRASTRUC-

This cartography, from a declassified CIA document[32], inventories the Yugoslav military installations on the territory of Pula and confirms the scale of the legacy: after more than a century and a half of continuous militarisation, the city retains a considerable military heritage.

There are the Austro-Hungarian forts on the heights, the Austro-Hungarian and Italian barracks and warehouses around the bay, and the more recent Yugoslav installations—layers that superimpose themselves without erasing the inherited spatial logic.

Some of these buildings have been converted (Kaštel, certain fortifications, the Monumenti complex).

But many others remain in limbo, partially occupied, or under inactive military status and therefore abandoned. And this is precisely the case of the site studied for this thesis.

To these legacies are added port infrastructure: hangars, halls, workshops, and technical quays, including the Uljanik shipyard founded in 1856.

This built heritage forms a material, memorial, and above all reusable resource for the city's future.

[32] *Central Intelligence Agency (CIA), Vojni objekti - Pula*

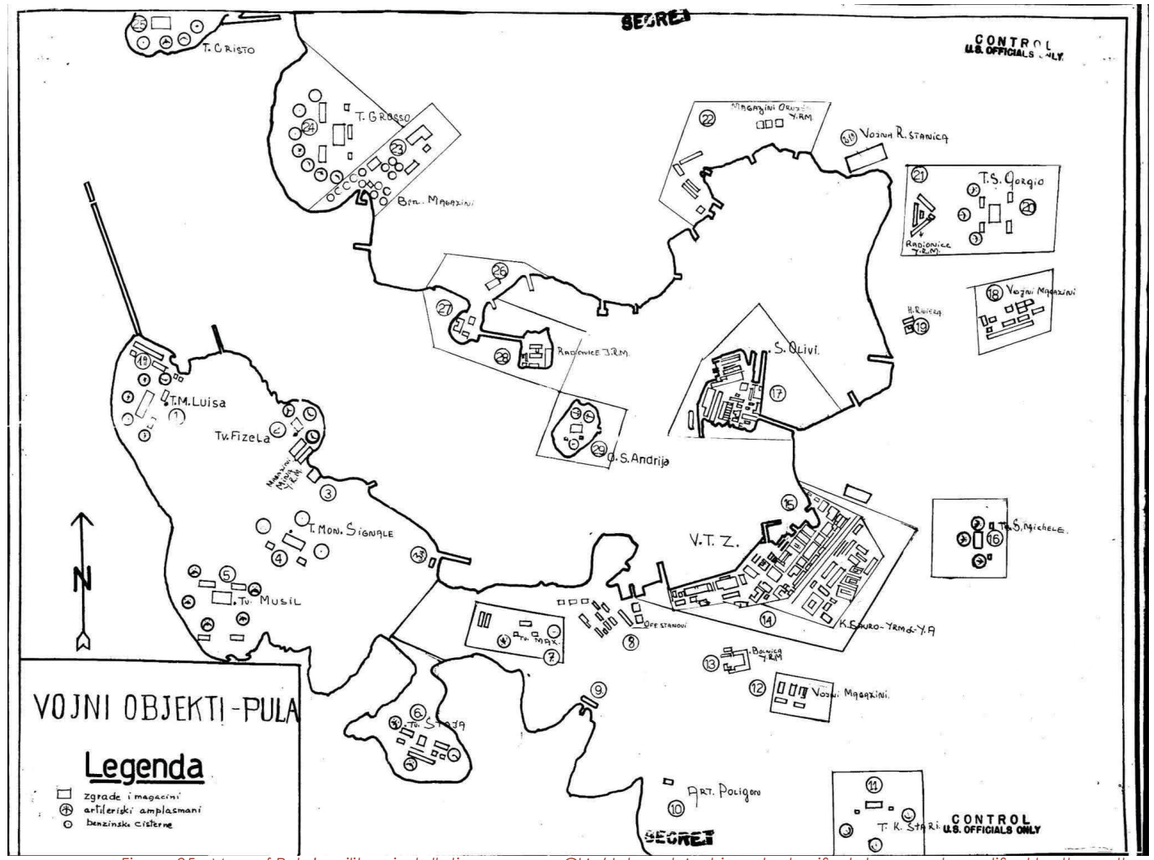


Figure 85 : Map of Pula's military installations, source: CIA / Internet Archive, declassified document, modified by the author



Figure 86 : Plan showing Pula's military heritage today — former barracks and fortifications

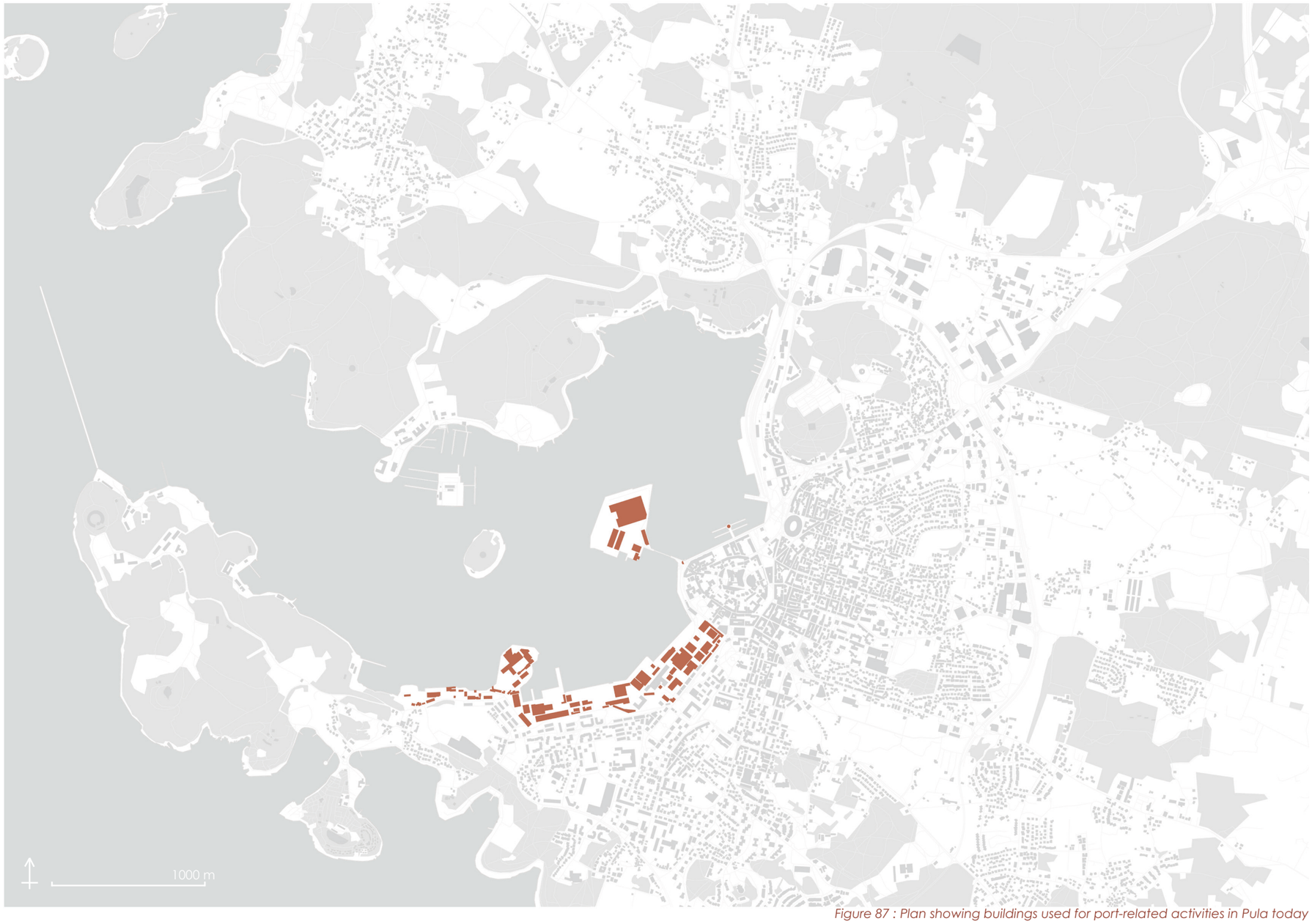


Figure 87 : Plan showing buildings used for port-related activities in Pula today

MILITARY HERITAGE AND FRAGMENTATION
A CLOSED AND FRAGMENTED COASTLINE

The accumulation of these military and port legacies produces a direct spatial effect: the coastline of Pula remains difficult for its inhabitants to access as a continuous whole. Installations follow one another along the coast, creating ruptures that fragment the route.

The Uljanik shipyard occupies the heart of the bay and already cuts the coast in two.

On the south side, the former military peninsulas such as Verudela or Stoja are partly occupied by tourism. On the north-west, the disused installations remain isolated from the rest of the city.

There are paths running along the coast in places, but they stop at every large footprint. There is no real continuous route, just segments connected as best they can.

Pula is a city that was built around a bay, whose very identity was formed by its connection to the sea, but whose inhabitants access the shore only through small interstices left vacant between the large complexes.

The rest of the coastline is either occupied by port activities, or closed off by former military grounds, or privatised by recent tourist developments such as the Monumenti complex.

It is precisely these interstitial spaces that residents invest in daily: coastal brownfields, informal paths, disused quays. The path along the seawall of the northern coastline site is a good example: a former trail used daily by locals, linking two sections of coast.

The uses observed above (cf. section 1.2.3) confirm this dynamic: where the planned city provides nothing, inhabitants settle and create their own living spaces by the sea. These spontaneous practices outline what a coastal continuity could look like if it were designed and developed.

The northern coastline site, the subject of this work, was part of these interstices until recently.

Appropriated for years by residents for their daily uses, it has now been identified by the city as a future project zone within the framework of the ZIP Vallelunga.

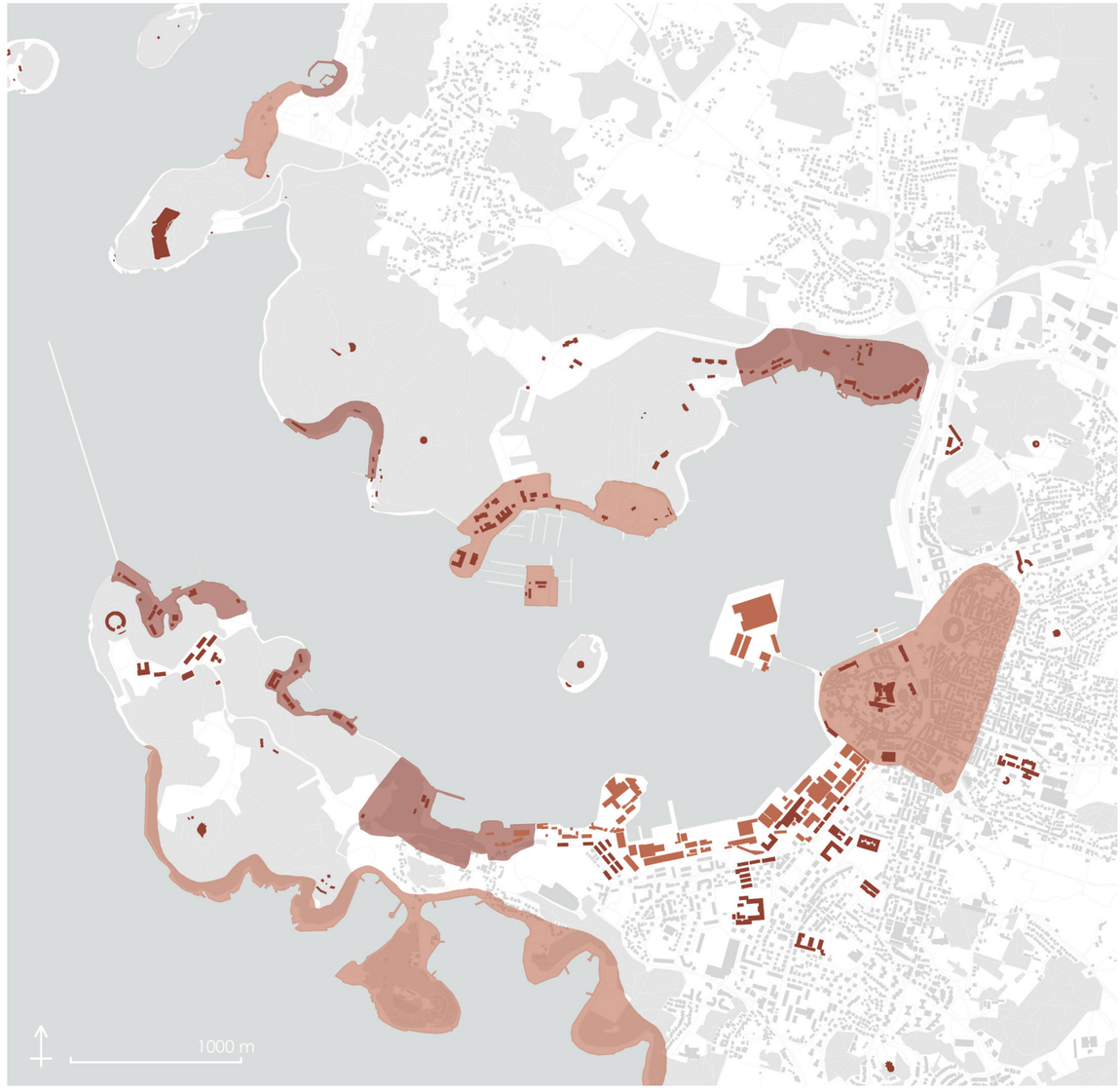


Figure 88 : Plan showing the different uses of the bay and the vacant interstitial spaces between them



Figure 89 : Photograph of one of the quays in Pula Bay



Figure 90 : Photograph of one of the site's quays and its uses



Figure 91 : Photograph of the Uljanik shipyard in the middle of the bay



Figure 92 : Photograph of a quay on Pula's coastline

MILITARY HERITAGE AND FRAGMENTATION
URBAN INTERVENTIONS AND EXISTING DOCUMENTS

This question arises all the more concretely given that the city of Pula has already taken up the matter. For several years, the municipality has been engaging in reflection on the future of its military brownfields along the coast.

After the conversion of the Monumenti complex into a luxury hotel, discussed above, it is the Vallelunga zone that is today the subject of the most ambitious project. Its analysis helps understand the direction the city is taking and to position this work.

In 2024, a contract was signed between the municipality and the Faculty of Architecture in Zagreb for the development of an urban and architectural concept covering the entire zone—approximately 250,000 m² and 35 existing buildings[33].
The project, led by architect Alen Žunić, is named ZIP (Zona inovacije Pula) and aims to make Vallelunga a "third urban centre" for Pula, alongside the historic centre and the southern hub[34].

Mayor Filip Zoričić presents the project as "a zone of innovation, entrepreneurship, a scientific and university triangle, from the former naval hospital to Vallelunga"[35].
The programme is structured around three thematic axes. It targets green technologies, the maritime economy, and ecological food production[33]. The municipality specifies that "the development of the coast would allow the zone to be connected to the urban waterfront and make it accessible to all inhabitants and visitors"[33].

[33] *Grad Pula, " PIC Vallelunga "*

[34] *Grad Pula, " Potpisan ugovor za izradu idejno arhitektonsko-urbanističkog rješenja zone Vallelunga "*

[35] *Glas Istre, " Prva faza, izgradnja Pulskog inovacijskog centra, kreće dogodine "*

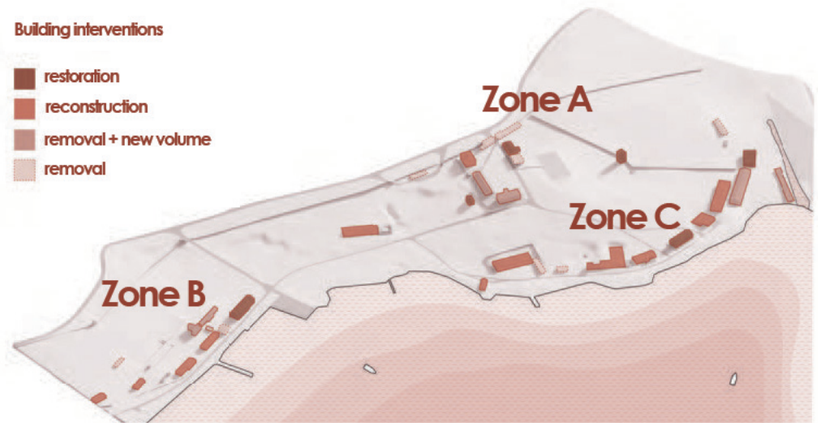


Figure 93 : ZIP interventions on the northern coastal site, source: City of Pula, modified by the author

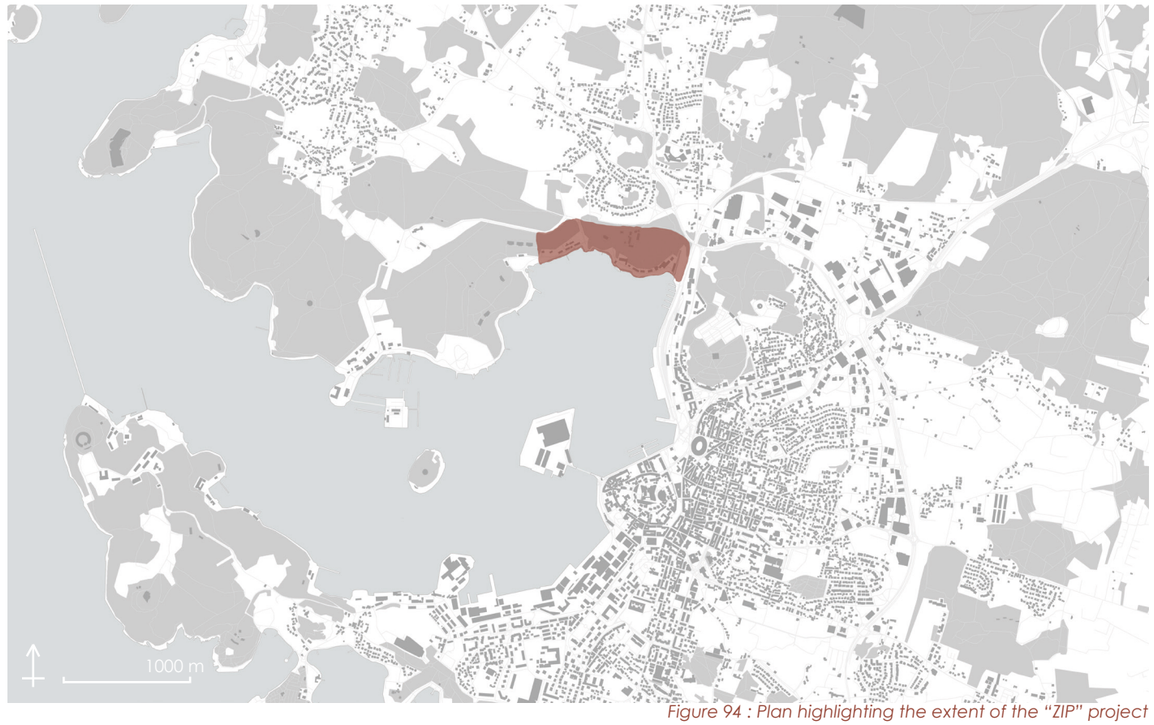


Figure 94 : Plan highlighting the extent of the "ZIP" project



Figure 95 : Aerial view of the ZIP project proposal, source: albatross.hr, modified by the author

Zone B of the site, which corresponds to the terrain of this work, would according to the article host a Blue TEC centre dedicated to maritime research, with buildings potentially reaching 10,000 m² of floor area[36].

The published renders show a continuous architectural volume on the seafront, approximately one hundred metres long, covered by a white roof bearing the inscription "BlueTech Pula". The site is given a continuous building, unified by a single roofing element.

The existing quay is reconfigured, extended by a jetty and floating platforms covering the entire quay. The project's architectural style is quite contemporary, with smooth surfaces. Overall, the project has a strong visual footprint and spreads across the entire site, removing part of the pine forest.

The desire to reconnect the coastline to the city and transform this military brownfield into a productive space makes sense. This is precisely what the diagnosis in the preceding sections already pointed out. The cycling continuity along the coast would address something very concrete observed on the ground.

[36] *Jutarnji list, " Pulska Vallelunga - Vojna zona postat će Blue TEC centar "*



Figure 96 : Model of the Zona B project — extended quay — on the northern coastline, source: albatross.hr, modified by the author



Figure 97 : Model of the ZIP project on the northern coastline, viewed from the water, source: albatross.hr, modified by the author

The scale of the intervention, however, raises questions. The proposed volume breaks with the scale of the existing constructions that characterise the site: modest buildings, aligned facing the sea, accompanied by limestone walls.

What is somewhat problematic here is that the proposed project erases important elements of the site, such as the pine forest, which is partly removed despite its contribution to the atmosphere of the site.

There is also the quay, used daily by fishermen, which disappears under a completely new development. This proposal leaves few material traces of what once made the site's identity.

The programme is oriented primarily towards technological innovation and entrepreneurship, which responds to economic challenges for the city, which is seeking to diversify its economy beyond tourism and shipbuilding. But this project leaves little room for the spontaneous uses observed on the ground: fishing, the daily walk, naval tinkering, the informal gatherings described in section 1.2.3.

These practices testify to needs to which the city does not respond elsewhere on its coastline.

It is therefore in this gap that this project positions itself. The Vallelunga site that is the subject of this thesis corresponds to Zone B of the ZIP.

The project that follows proposes a different approach, starting from the existing buildings and seeking to preserve the landscape character of the pine forest and the quay, while formalising the uses already in place.

Despite the fragmentation of the coastline for over a century and a half, this site represents an opportunity to give residents lasting access to their bay, building on what is already there.

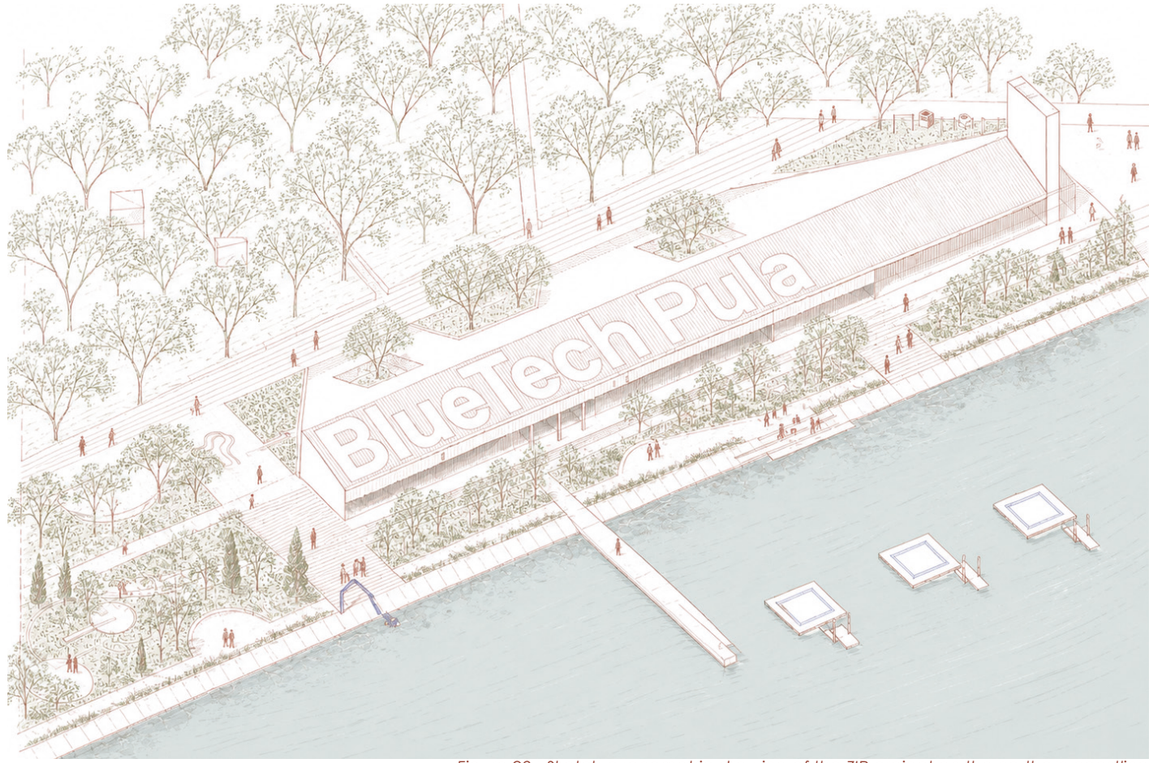


Figure 98 : Sketch axonometric drawing of the ZIP project on the northern coastline

III. REACTIVATING THE COASTLINE THROUGH USES

SITE ORGANISATION
PROGRAMME AND LOGIC OF IMPLEMENTATION

I worked for a long time on the question of what programme to apply to the site. My first intuition was to propose affordable collective housing—a relevant topic for Pula, where property and tourism pressure make access to housing increasingly difficult.

I explored this avenue for a long time (the entire first part of my work), drawing on references such as the Siedlung Halen by Atelier 5 or the Kraftwerk cooperative in Zurich, developing plans and sketches for grouped housing integrated into the site's landscape.

But as my thinking progressed, through testimonies and questioning during studio corrections, I understood that this programme, although relevant for the city, does not correspond to this particular site.

People do not live here. People do not work here in the conventional sense. What happens here is of a different order: people fish, walk, tinker with their boats, meet neighbours, organise informal gatherings.
The site calls for a programme that starts from these practices—something between public facility, artisanal workspace, and informal living place.

The term "third place" then came to mind; as broad as it is, I could recognise the idea and spirit of my project in many definitions.

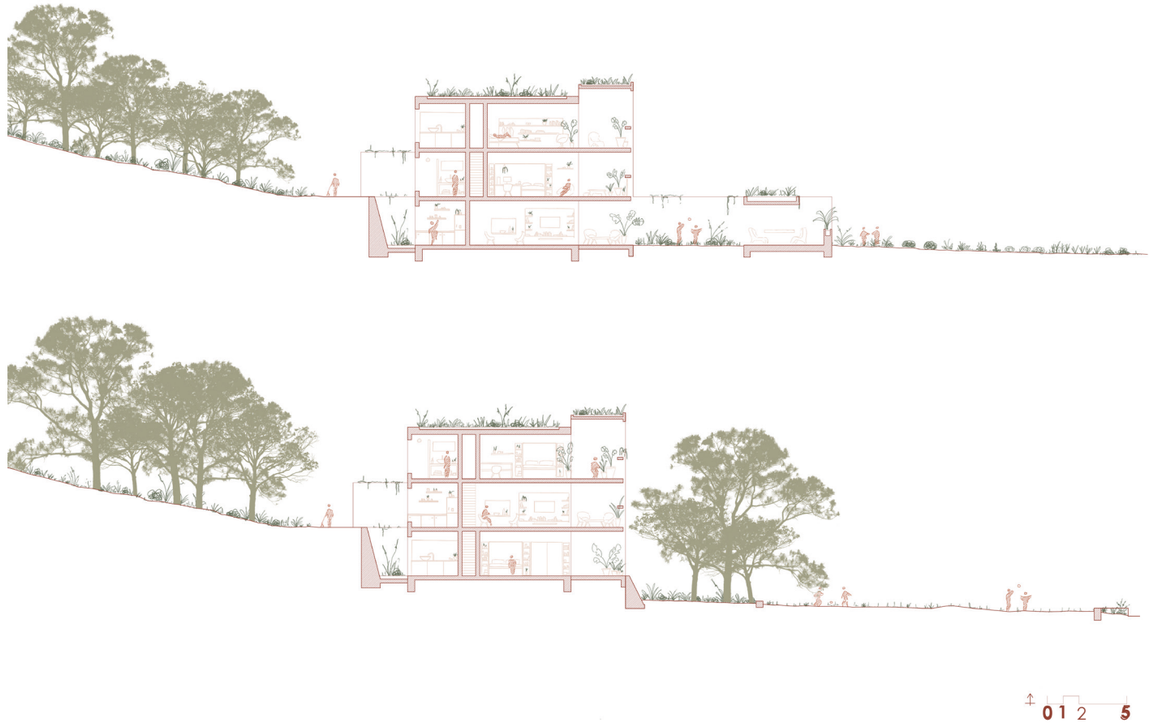


Figure 99 : Section of a previous shared-housing project proposal developed during the En & Sur l'architecture research studio



Figure 100 : Site plan of a previous shared-housing project proposal developed during the In & On architecture research studio

The concept of the third place was theorised by American sociologist Ray Oldenburg in 1989 in his book The Great Good Place. He defines it as "a generic designation for a great variety of public places that host the regular, voluntary, informal and happily anticipated gatherings of individuals, beyond the realms of home and work"[40].

Oldenburg was then thinking of cafés, bars, and barbershops—those informal places where social bonds are woven outside the home (first place) and work (second place).

Since then, the concept has evolved considerably, particularly in Europe, with the emergence of cultural brownfields. La Friche la Belle de Mai in Marseille, a former tobacco factory converted into a cultural space since 1992, defines itself as a "prototype of what are now called third places, new cultural and urban models"[41].

We move from Oldenburg's neighbourhood café to a multipurpose 45,000 m² space mixing many different functions that coexist: artists' studios, performance halls, community gardens, a skatepark, a nursery, and a restaurant. The contemporary third place thus becomes a space rooted in its territory. Here, people create, produce, and cooperate to transform the city.

The architect Patrick Bouchain formulates this idea aptly: "The city produces brownfields, neglected spaces without value. What La Friche has shown is that another path was opening and that people were proposing new ways of making the urban, which anticipates without programming, without freezing"[42].

The project for the Vallelunga site thus falls within this continuity: a shared workshop, rooted in the existing practices on the site and open to new artisanal and cultural activities.

The fishermen, walkers, naval tinkerers, and Mini Festival families already use the site as a third place, without calling it that.

[40] *OLDENBURG, Ray (1989), The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons and Other Hangouts at the Heart of a Community, New York : Paragon House.*

[41] *La Friche la Belle de Mai, " Le projet "*

[42] *La Friche la Belle de Mai, " Histoire "*

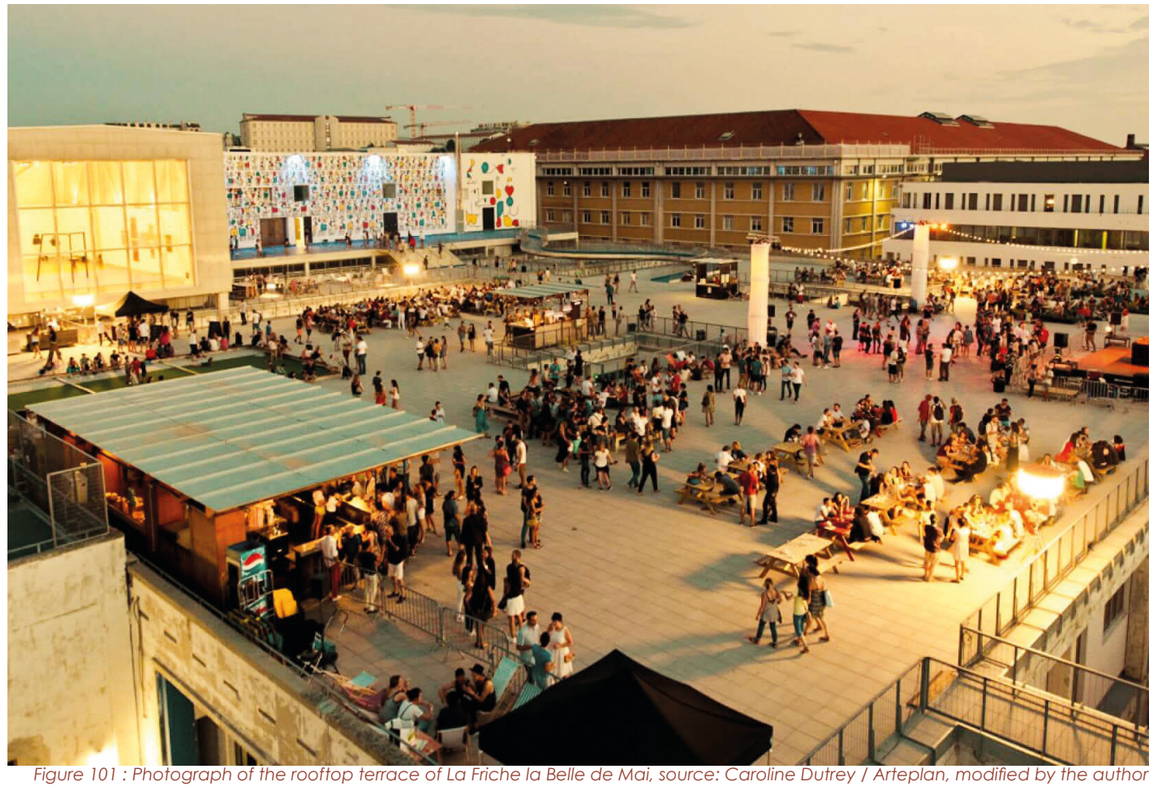


Figure 101 : Photograph of the rooftop terrace of La Friche la Belle de Mai, source: Caroline Dutrey / Arteplan, modified by the author



Figure 102 : Jardin des Rails at La Friche la Belle de Mai, source: Sébastien Normand / La Friche, modified by the author

The challenge of this thesis is to formalise all of this as a workshop—that is, a place where one makes, repairs, and shares tools and know-how, in direct connection with the coastline and its uses. The case studies that follow show how this type of place has taken shape elsewhere.

NDSM Werf, Amsterdam

The NDSM is a former shipyard located on the north bank of the IJ in Amsterdam. Founded in 1894, the Nederlandsche Dok en Scheepsbouw Maatschappij was, from the 1920s to the 1980s, one of the largest shipyards in the world[43].

After its bankruptcy in 1984, the 90-hectare site was left abandoned. As at Vallelunga, the large industrial halls, cranes, and building slips remained in place—skeletons of a bygone activity[44].

From the 1990s, artists and squatters began to occupy the disused hangars, transforming them into studios and living spaces. In 2001, the Kinetisch Noord foundation, born from the squat movement of the 1980s, obtained the official mandate to transform the site into a broedplaats (creative incubation space) with the support of the Amsterdam municipality[44].

This situation may recall what is happening spontaneously at Vallelunga: an informal appropriation that precedes any official intervention.

Today, the Stichting NDSM-werf foundation manages the site and hosts approximately 250 artists and creative entrepreneurs in the Scheepsbouwloods (shipbuilding hall).

[43] *NDSM-werf, " Over de NDSM-werf "*

[44] *I Amsterdam, " NDSM then and now "*



Figure 103 : Outdoor space of the NDSM-Werf in Amsterdam, source: NDSM, modified by the author

There you find artists' and artisans' studios, exhibition spaces (including the STRAAT Museum dedicated to street art), restaurants, the largest flea market in the Benelux (IJ-Hallen), sports grounds, and festivals and events throughout the year[45].

The site also hosts ship repair activities, still active via the Damen Shiprepair yard[43].

The NDSM's development strategy is interesting for this thesis. The Amsterdam municipality did not impose a fixed programme. Instead, it set a framework of conditions and let the site evolve within it.

The spatial strategy developed by LOLA Landscape Architects in 2021 summarises this philosophy: the site must remain "green, raw, radical, experimental, cultural and historical, defined by development conditions rather than by a fixed design"[46].

The historic buildings, vegetation, and cultural activities already present are kept as they are and supported. Nature is reintroduced by simply removing the surface coating to let vegetation grow spontaneously. The initiatives of artists and entrepreneurs are gradually integrated without a rigid guiding plan[46].

[45] *HUB-IN Atlas, " NDSM-Werf "*

[43] *NDSM-werf, " Over de NDSM-werf "*

[46] *LOLA Landscape Architects, " NDSM Amsterdam ", 2021 "*

1 Ateliers X-helling

2 Beautiful Distress

3 De Kunststad

4 Grafische Werkplaats Amsterdam (GWA)

5 NDSM FUSE

6 NDSM Herleeft

7 NDSM Theater / Café

8 Stichting NDSM-werf

9 STRAAT Museum

10 Treehouse NDSM

11 Cannibale Royale

12 IJver

13 Noorderlicht

14 Pllek

15 Doublêtree by Hilton

16 Faralda Crane Hotel

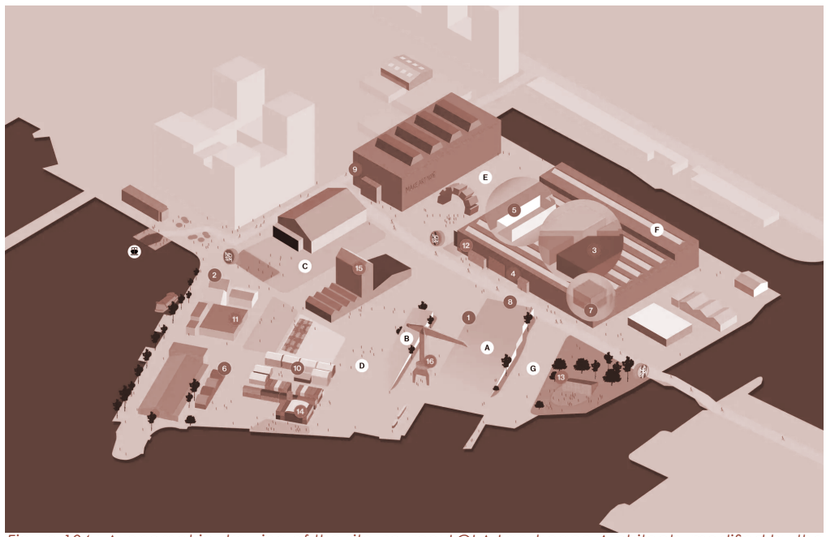


Figure 104 : Axonometric drawing of the site, source: LOLA Landscape Architects, modified by the

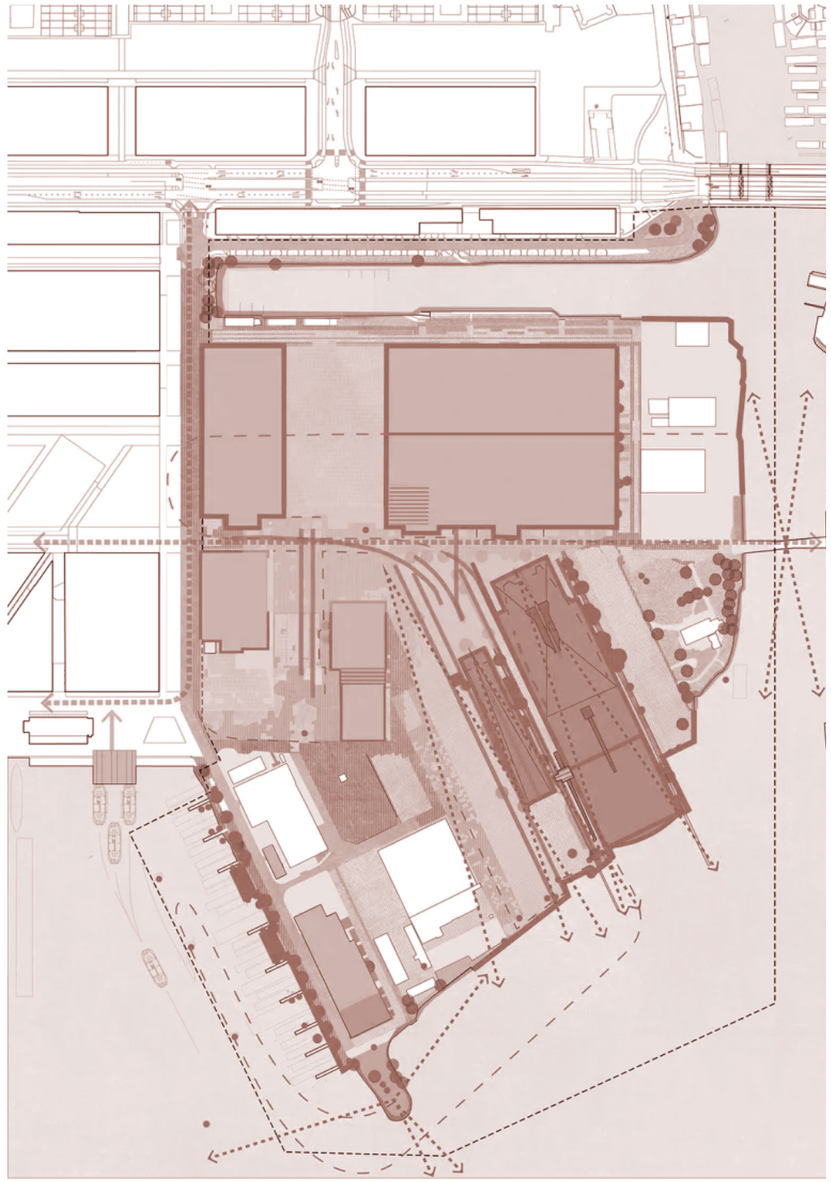


Figure 105 : Site plan of the NDSM, source: LOLA Landscape Architects, modified by the author

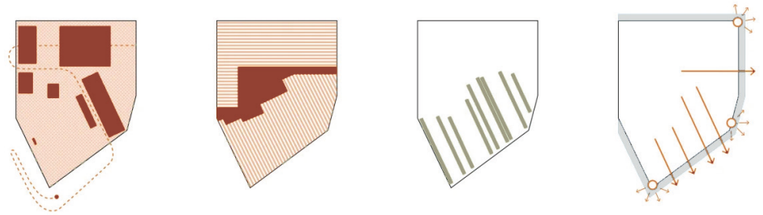


Figure 106 : Diagram of the "spatial qualities to be preserved", source: LOLA Landscape Architects, modified by the author

La Friche la Belle de Mai, Marseille

In Marseille, a comparable process played out in a different context. La Friche la Belle de Mai is a former SEITA tobacco factory, closed in 1990 after over a century of activity. The 45,000 m² site is located in the working-class district of Belle de Mai, in the 3rd arrondissement[41].

In 1992, a collective of artists, supported by the city, decided to transform the brownfield into a "cultural brownfield" space.

In 1995, the architect Jean Nouvel took the presidency of the project and developed a "Cultural Project for an Urban Project", establishing the principle that artistic permanence is an indispensable agent of urban development[47].

In 2007, La Friche became a Société Coopérative d'Intérêt Collectif (SCIC)—a shared governance structure between residents, local stakeholders, and public institutions[47].

This cooperative model, where each member has one vote, ensures management based on the territory's needs.

Today, La Friche hosts 70 resident organisations, i.e. approximately 350 artists and employees who work there daily. It offers 600 events per year and receives approximately 450,000 annual visitors[41]. The programme combines 6 performance halls, exhibition spaces, artists' studios, a restaurant, a nursery, a bookshop-café, a skatepark, community gardens, and a playground[41].

The 8,500 m² rooftop terrace, developed for Marseille-Provence 2013 European Capital of Culture, offers a panoramic view of the city and has become a public space in its own right[47].

The coexistence between artistic production and neighbourhood life is what interests me in this case study. People make, produce, and exhibit, but they can also drop their child off at the nursery, buy vegetables at the farmers' market, cultivate their plot in the community gardens, or simply sit in the sun on the terrace.

[41] *La Friche la Belle de Mai, "Le projet "*

[47] *La Friche la Belle de Mai, "Histoire "*

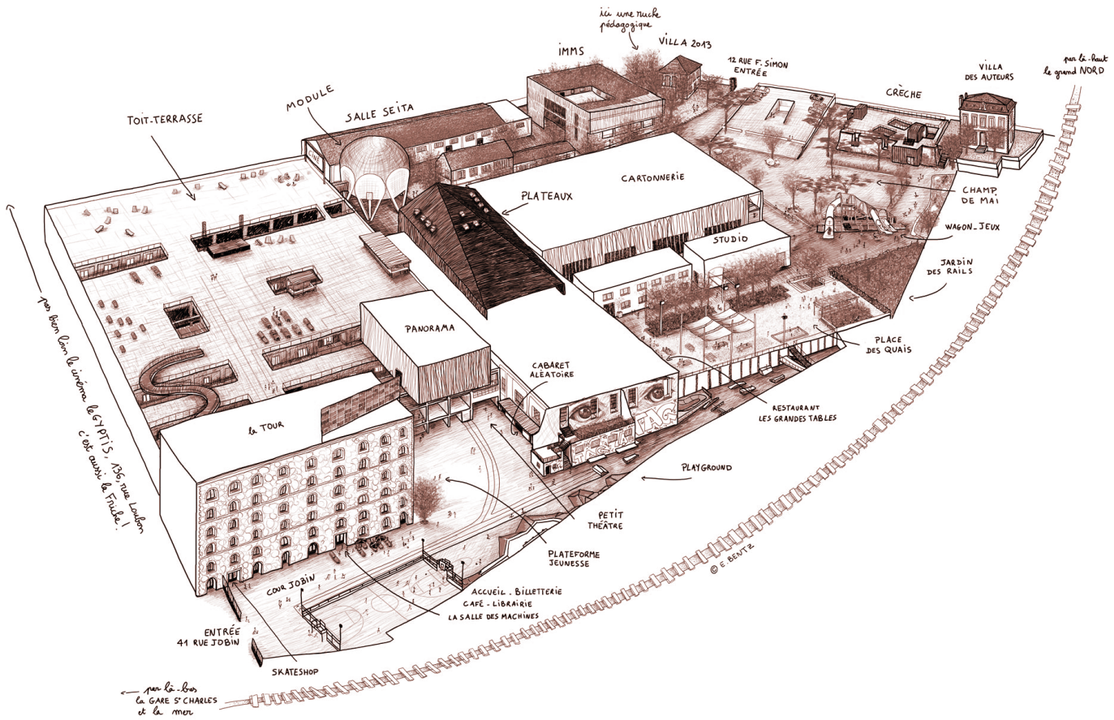


Figure 107 : Axonometric drawing of La Friche la Belle de Mai, source: E. Benti / La Friche, modified by the author



Figure 108 : Photograph of the Cartonnerie at La Friche la Belle de Mai, source: Clémentine Crochet / La Friche, modified by the author

Figure 109: Photograph of the Place des Quais, source: Caroline Dutrey / La Friche, modified by the author



Figure 110 : Photograph of the screen-printing workshop, source: Caroline Dutrey / La Friche, modified by the author



Figure 111 : Photograph of the Place des Quais, source: Caroline Dutrey / La Friche, modified by the author



Figure 112 : Photograph of the Champ de Mai, source: Stéphane Aboudaram / La Friche, modified by the author



These two references share essential commonalities with the Vallelunga site. An industrial or military brownfield by the water. Existing structures capable of hosting new uses without heavy transformation: halls convertible into workshops, warehouses into exhibition spaces, quays into gathering places.

A spontaneous appropriation that precedes any official intervention. And above all, development that starts from existing uses rather than an imposed programme.
They also show that this type of workshop has concrete effects on its neighbourhood: social bonds, jobs, cultural life, and buildings that find a use instead of falling into ruin.

What keeps the NDSM and La Friche going over time is that people are present there every day: artisans, artists, and above all neighbourhood residents.

The project of this thesis for the northern Vallelunga site falls within this same idea. It proposes a shared workshop—a place where one makes, repairs, and shares tools and know-how, in direct connection with its coastline and its uses.

A place where the fishermen, tinkerers, and walkers who already use the site finally find a framework. And where new practices can also settle alongside: artisanal workshops, the tool library, gardens, and multipurpose spaces.

The programme that follows is organised around these uses that I observed and the needs identified during discussions and reflections with residents.

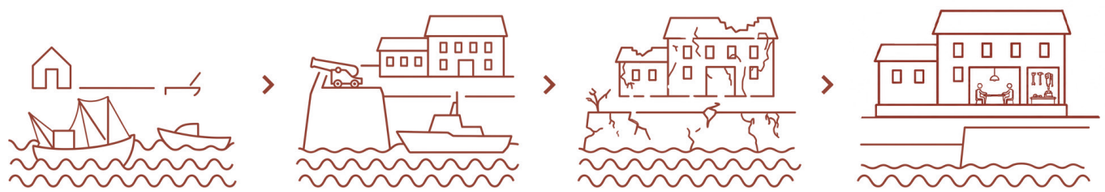


Figure 113 : Diagram showing the evolution of the site from its origins to its current programme

Fishing and trade (origin) until the 19th century: an artisanal fishing and commercial port rooted in local tradition

Military function (19th–20th century): coastal fortification for defence, closure of the zone

Abandonment (late 20th – early 21st century): coastal zone left fallow, structures at a standstill, loss of function

Shared workshop (21st century, thesis project): space for creation and collaborative production, heritage rehabilitation, reinvention of use

The programme of the Shared Workshop is organised around five activity hubs, each of which is rooted in the uses observed on the ground and in local associative resources.

The programme starts from the uses already present on the site and the associations active in Pula.
On the sea side, the boat workshop hosts construction and naval repair, with a storage space for fishing equipment and a space dedicated to fishermen.

Fresh fish sales are made directly from the site as well. This hub draws on ŠK Uljanik for sailing and nautical activities, Sportsko Ribolovno Društvo for fishing, and Club Veslački Kleber for rowing.

The workshops themselves mix several practices: stone carving, woodwork, earth construction, complemented by a tool library accessible to all and a public workshop where one can repair boats, bicycles, or create. Udruženje Obrtnika Pula (artisans), HUIU (artists), and Metamedia Association (cultural production) would be potential partners.

The existing green spaces on the site host community gardens, managed in partnership with the environmental association Zelena Istra. The remaining green spaces remain open for sport, games, and family walks. A shared kitchen allows for making use of the harvests and bringing users together.

At a larger scale, former railway lines are repurposed as cycling routes to connect the site to the rest of the city and the bay. Biciklistički Klub Pula and Bike Spirit carry this component.

Finally, a multipurpose hall, public toilets, the kitchen, and a covered space for selling local products (fish, fruit and vegetables from the gardens) complete the programme.

These hubs thus allow for hosting occasional events (markets, festivals, gatherings, open-air bars) while providing services that are absent from the site today.

The whole forms an open programme that can especially evolve over time, where each hub can function autonomously or with the others, while contributing to the collective dynamic of the workshop.

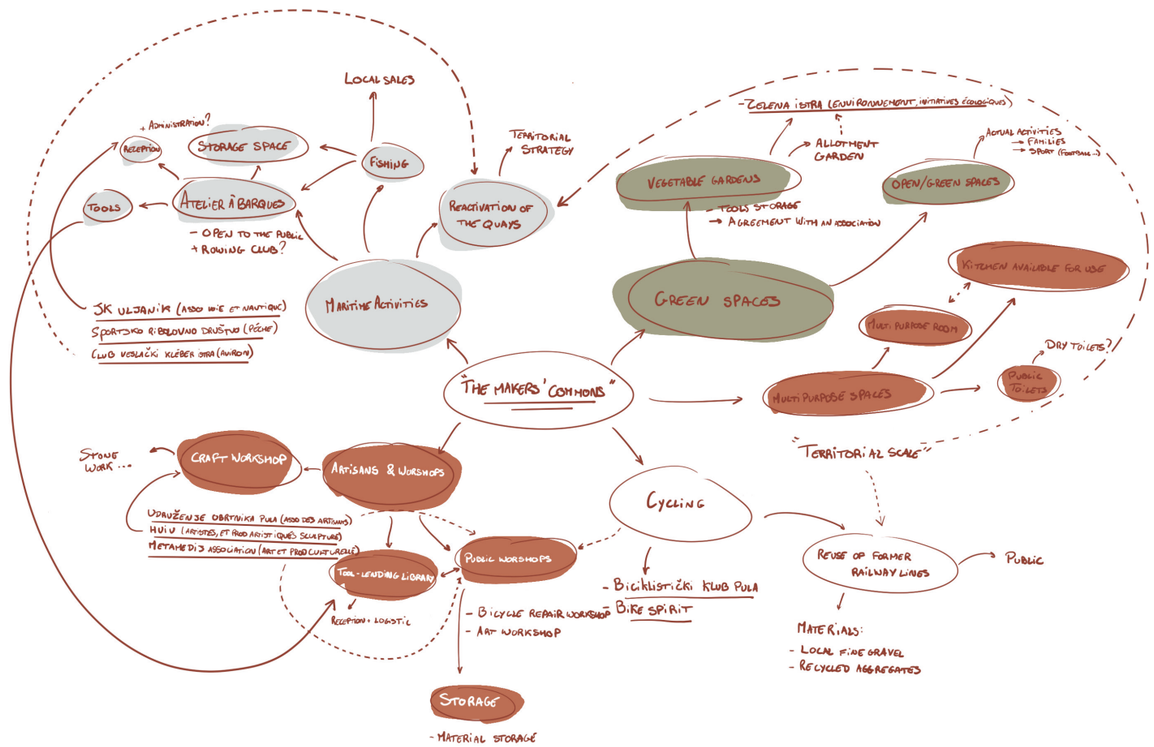


Figure 114 : Programmatic organisation chart

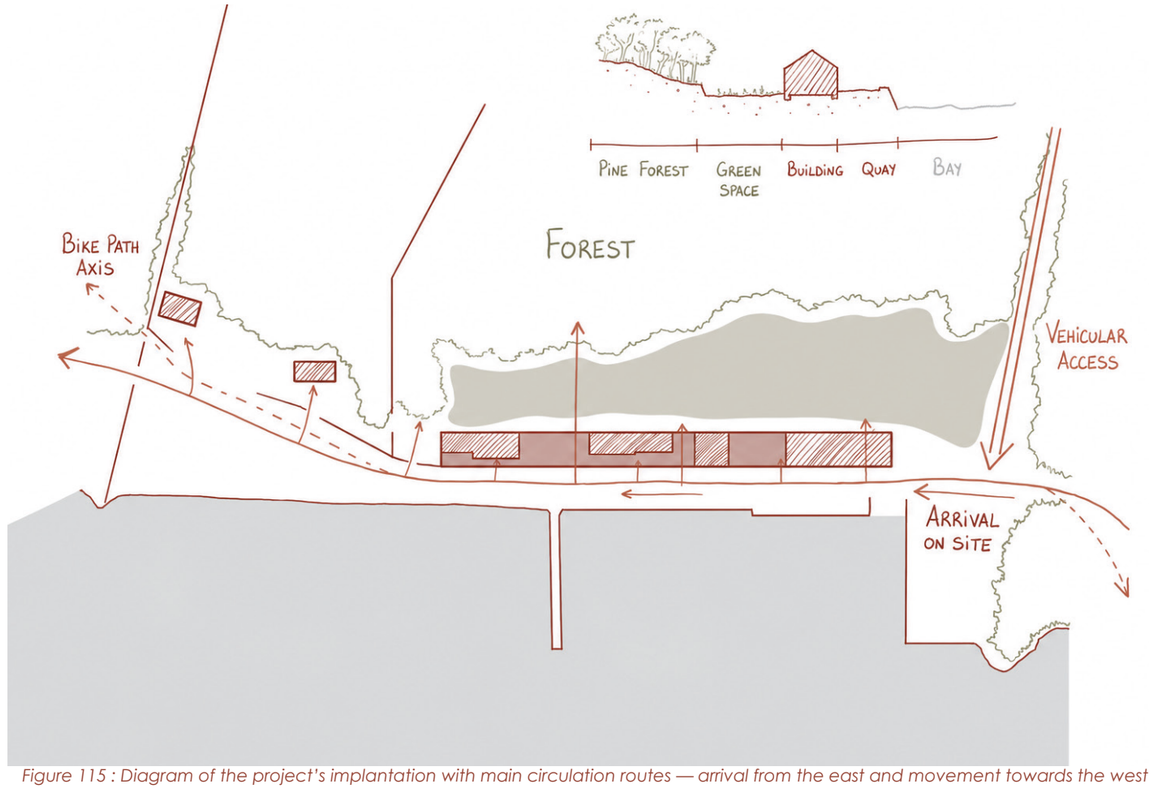


Figure 115 : Diagram of the project's implantation with main circulation routes — arrival from the east and movement towards the west



Figure 116 : Organisational plan of the project within the site



Figure 117 : Site plan and elevation of the project within the site

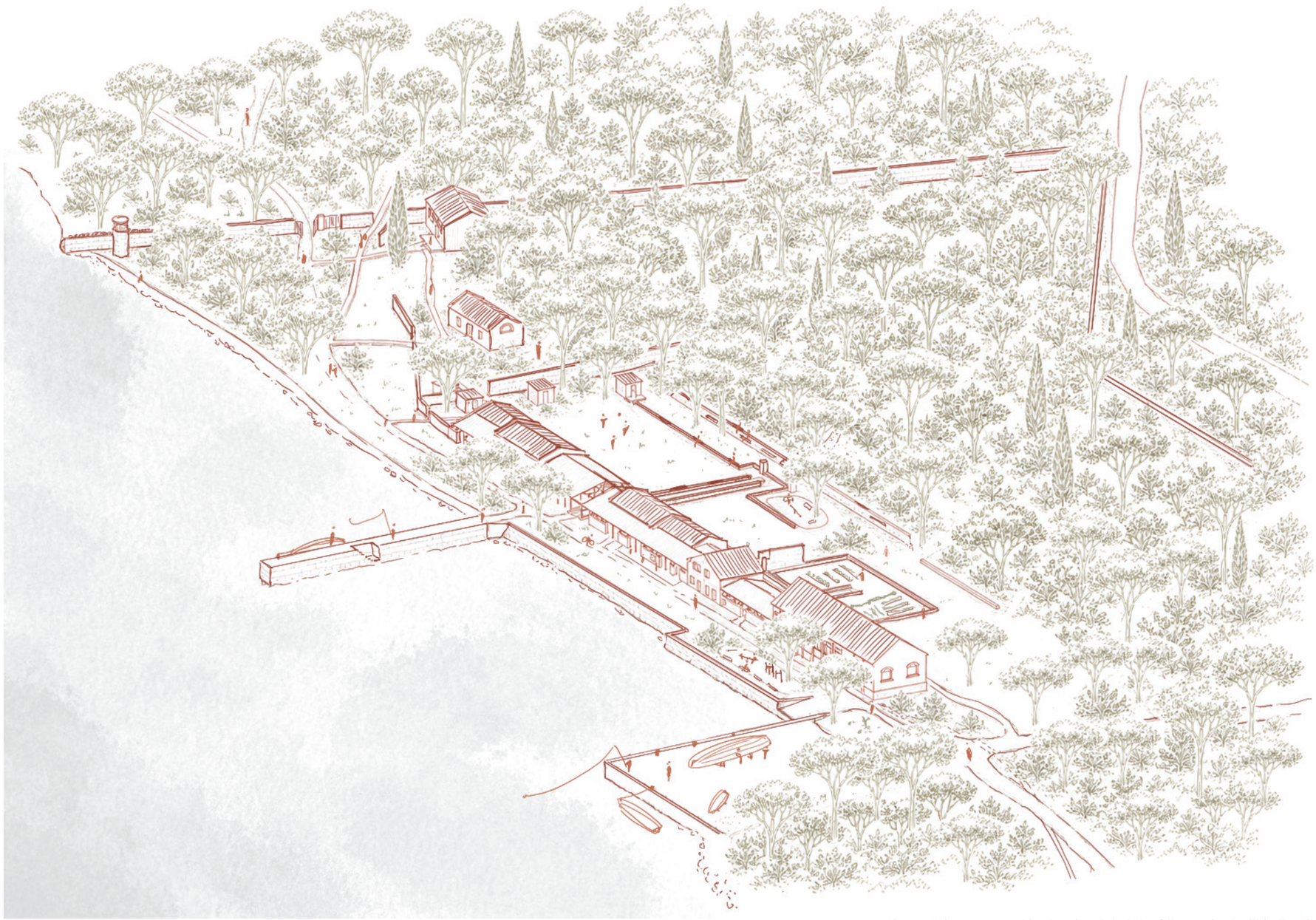


Figure 118 : Axonometric drawing / sketch of the project within the site

The programme of the Shared Workshop draws on the associations already active in Pula. The map opposite locates the premises of the main associations identified as potential partners of the project.

They are almost all concentrated in a former military building in the city centre (except Udruženje Obrtnika to the lower right and Metamedija Association further north).

There you find structures linked to maritime activities (ŠK Uljanik for sailing and nautical sports, Sportsko Ribolovno Društvo for fishing, Club Veslački Kleber Šta for rowing), to craft and creation (Udruženje Obrtnika Pula for artisans, HUIU for artists and artistic production, Metamedija Association for art and cultural production), to cycling (Biciklistički Klub Pula and Bike Spirit), and to the environment (Zelena Istra for ecological initiatives and awareness).

The Shared Workshop proposes to offer them a setting directly on the coastline. And as in the large associative building in the city centre, bringing these stakeholders together on a single site would allow for pooling spaces and tools, fostering exchanges between disciplines, and reconnecting maritime and artisanal activities.

The Vallelunga site, with its reusable buildings, quays, green spaces, and position on the bayfront, offers a context that the associations located in the city centre cannot find nearby.



Figure 119 : Location of associative spaces in the city of Pula

SITE ORGANISATION
MATERIALITY AND RESOURCES

The project is based on a logic of local materials and short supply chains, consistent with the spirit of the workshop. Three main materials structure the intervention: limestone, wood, and rammed-earth (pisé).

Limestone, omnipresent on the site and throughout Pula's construction, constitutes the material basis of the project. It is the same stone that was used to build the Roman amphitheatre, the defensive walls of the site, and the bases of the Austro-Hungarian halls.

It is available locally and has been part of the city's construction vocabulary for two thousand years.

The limestone walls on the site are preserved and restored. For new interventions, gravel comes from a quarry area approximately 500 metres to the south.

As for wood, the roof structures of the storage halls and seafront buildings are still in good condition, so they are kept as they are. New structures are also in local wood, which remains consistent with what is already found on the site.

The third material is rammed earth (pisé). Rammed earth is an ancient construction technique consisting of compacting moist earth in formwork in successive layers until obtaining a dense, solid, and durable wall[48]. The ideal composition mixes clay soil, sand, and gravel in variable proportions[48].

The Vallelunga site possesses these elements: the terra rossa (crvenica), a red clay earth characteristic of the Istrian coastline identified on the pedological map[14], can provide the clay binder, while the limestone gravel from the extraction zone neighbouring the site can provide the mineral fraction to ensure the stability of the mix.

The rammed earth, made from local resources, will take on a reddish hue that directly reflects the colour of the terra rossa. This materiality makes it possible to visually anchor the project in its soil and to create a dialogue between the existing walls and the new rammed-earth partitions, red and massive.

Inside the buildings, the rammed-earth walls organise the spaces. They separate the workshops, delineate storage areas, and add new modules. These walls fit freely within the existing structures without altering them.

Their thermal mass also contributes to the natural regulation of the indoor temperature of tool storage modules or various objects—an asset in Pula's Mediterranean climate[48].

This material approach reflects the project's intention: to build with what is already there, while valorising the site's resources and developing new knowledge.

[48] *Auroville Earth Institute, " Traditional Rammed Earth "*

[14] *Škorić, A., Mayer, B., Vranković, A., Bašić, F., Pedološka karta Istre / Soil Map of Istria, 1:50 000, financé par la Republička zajednica za znanstveni rad SR Hrvatske.*

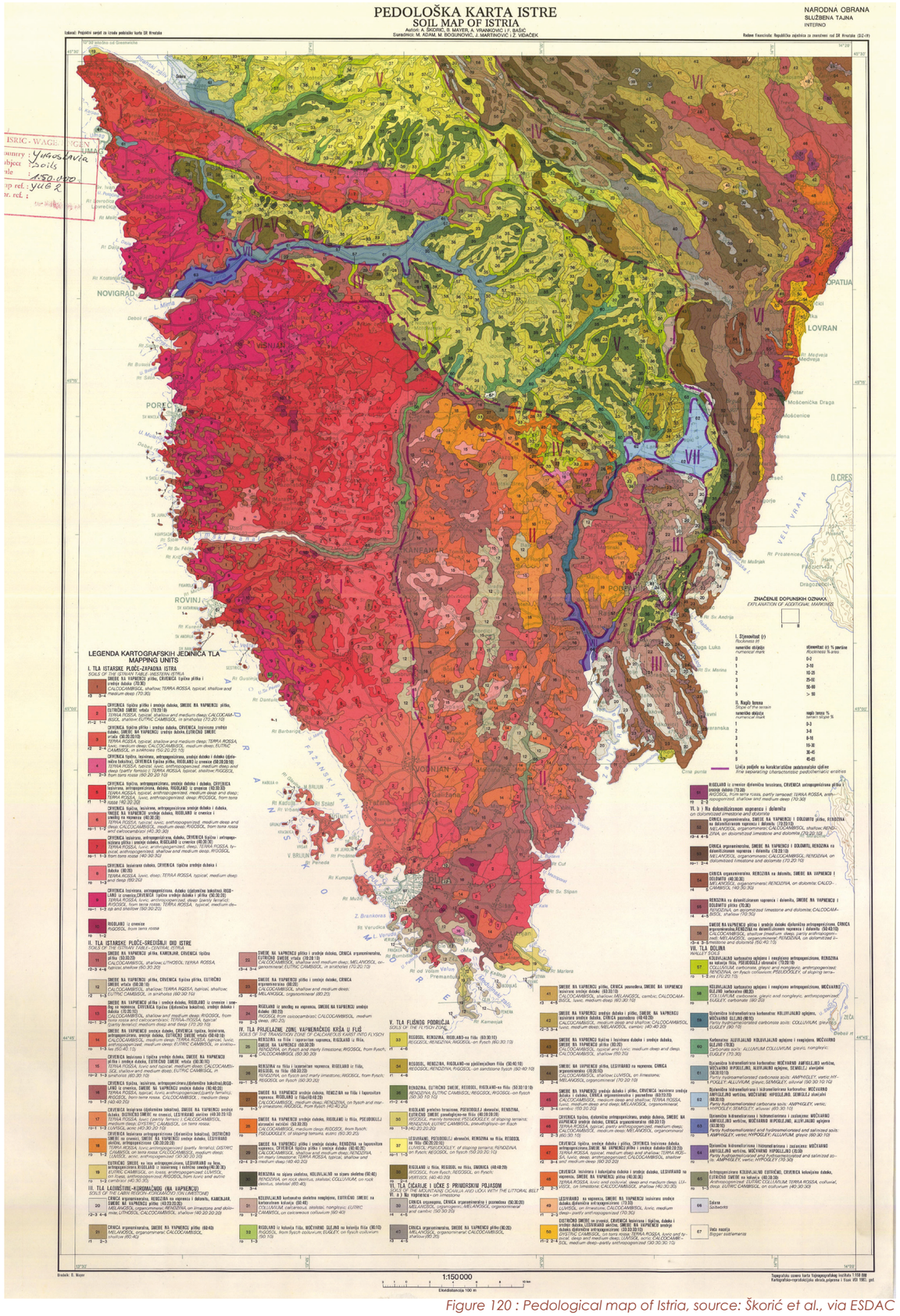


Figure 120 : Pedological map of Istria, source: Škorić et al., via ESDAC



Figure 121 : Photograph of a typical Istrian terra rossa soil



Figure 122 : Photograph of a wall made of limestone

The work of **Martin Rauch**, an Austrian artisan-builder specialising in rammed earth, served as a direct reference for this project. He built his own rammed-earth house in Schlins, the Haus Rauch (2008), with architect Roger Boltshauser[49].

The principle of the project is to use materials sourced primarily from earth excavated directly on site[49].

The extracted soil is sifted, then reused in different forms: 45 cm thick load-bearing rammed-earth walls, rammed-earth floors, vaulted ceilings, white clay interior renders, and even the stair steps[50].

The rammed-earth walls, left raw, reveal the successive layers of compaction, giving the surfaces a geological texture recalling the soil strata from which they originate[49]. The raw material and the finished product are one and the same thing.

The thickness of the walls creates deep reveals that frame the light, a raw texture, compaction strata giving the surfaces a tactile presence that ages with time, and the mass of the material naturally regulating interior temperature—making it an interesting reference for the Vallelunga project.

At Vallelunga, the rammed-earth partitions are made from what is found on site. Specifically, the mix is composed of 50 to 75% gravel and sand, 15 to 30% silt, and 10 to 20% clay[48].

The local terra rossa provides the clay fraction (10 to 20%), the limestone gravel from the extraction zone 500 metres to the south provides the mineral fraction (50 to 75%), and sand completes the mix (15 to 30%)[48].

The resulting rammed earth will take on a characteristic reddish hue, a direct reflection of the colour of the Istrian soil. These partitions structure the interior spaces of the rehabilitated halls, while visually anchoring the project in its soil.

[49] *Boltshauser Architekten, " Lehmhaus Rauch "*

[50] *EU Mies Award, " Rammed Earth House Rauch "*

[48] *Auroville Earth Institute, " Traditional Rammed Earth "*



Figure 123 : Rammed-earth façade of Haus Rauch, source: Beat Bühler / Boltshauser Architekten, modified by the author

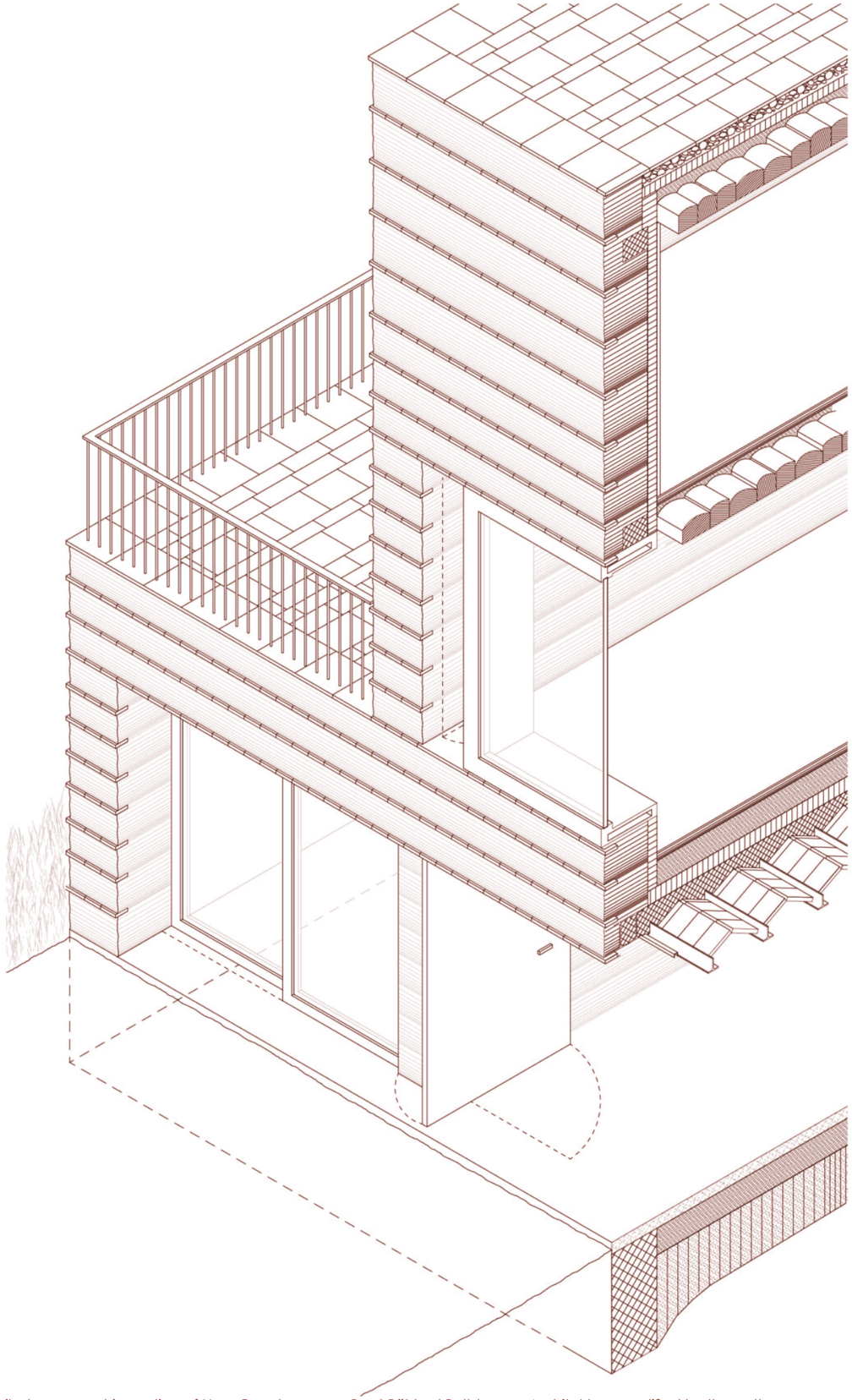


Figure 124 : Detailed axonometric section of Haus Rauch, source: Beat Bühler / Boltshauser Architekten, modified by the author

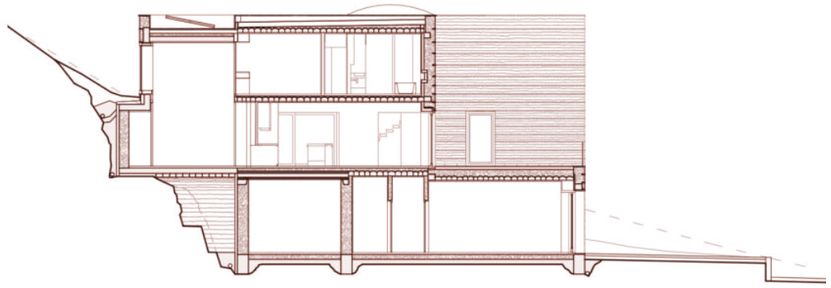


Figure 125 : Longitudinal section of Haus Rauch, source: Beat Bühler / Boltshauser Architekten, modified by the author.

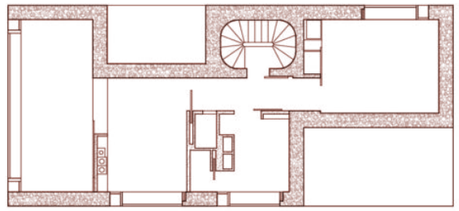


Figure 126 : Second-floor plan of Haus Rauch, source: Beat Bühler / Boltshauser Architekten, modified by the author.

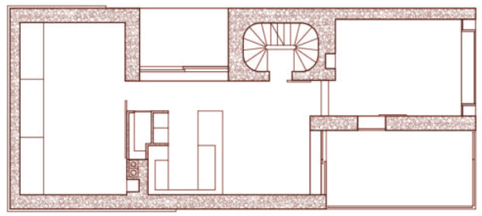


Figure 127 : First-floor plan of Haus Rauch, source: Beat Bühler / Boltshauser Architekten, modified by the author

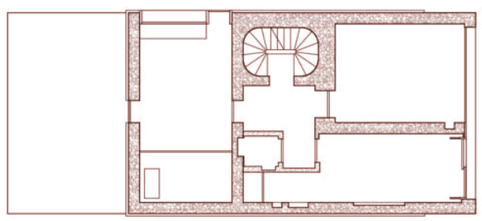


Figure 128 : Ground-floor plan of Haus Rauch, source: Beat Bühler / Boltshauser Architekten, modified by the author

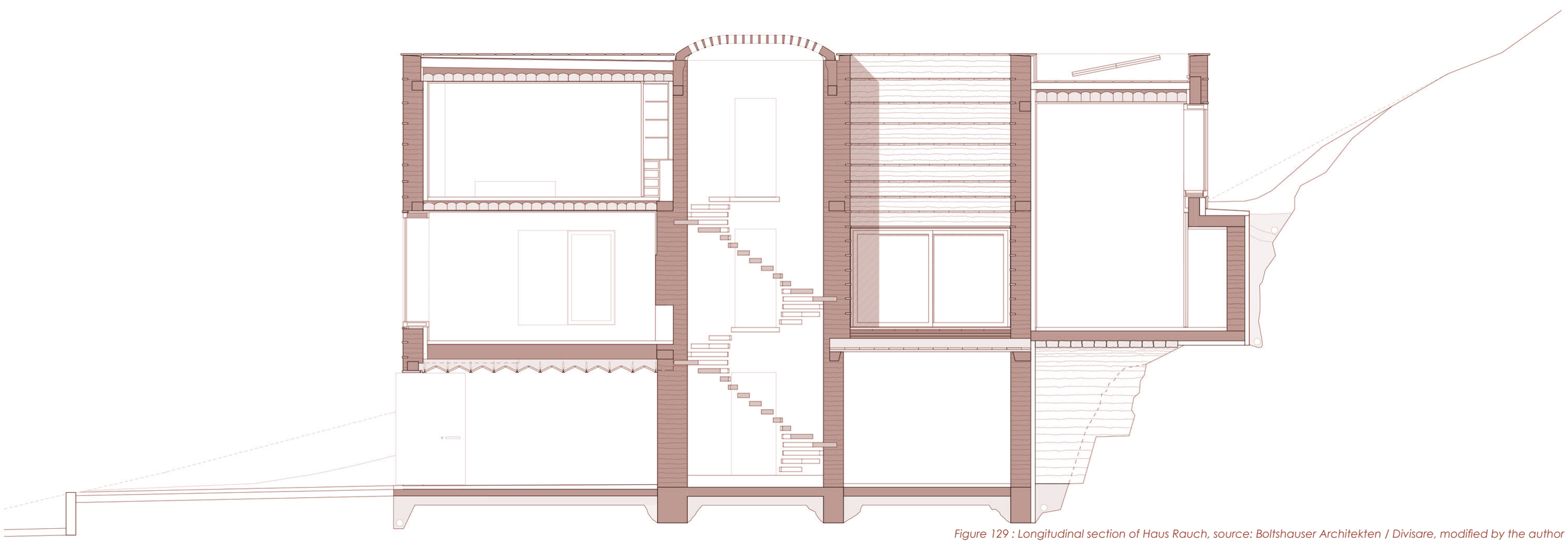


Figure 129 : Longitudinal section of Haus Rauch, source: Boltshauser Architekten / Divisare, modified by the author

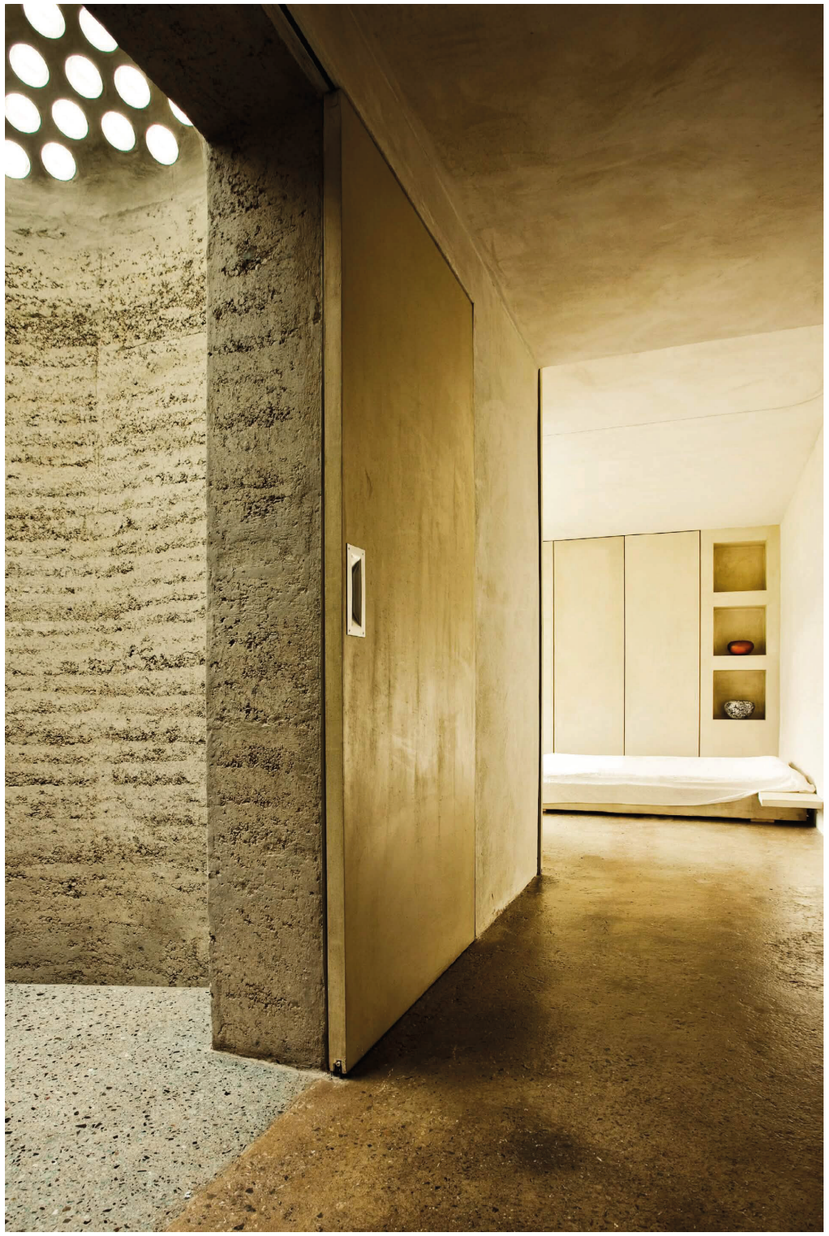


Figure 130 : Interior photograph of Haus Rauch, source: Albrecht Schnabel / Boltshauser Architekten, modified by the author

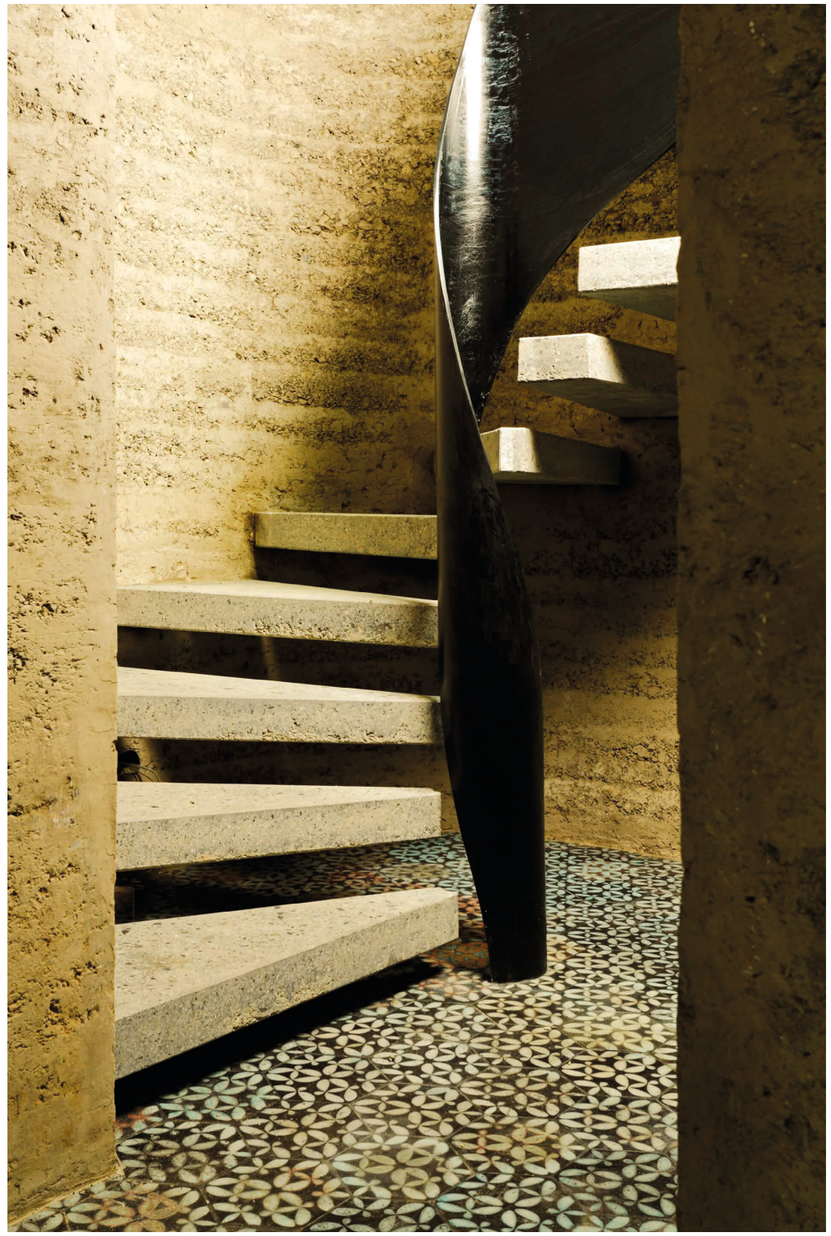


Figure 131 : Interior photograph of Haus Rauch — staircase — source: Beat Bühler / Boltshauser Architekten, modified by the author

TERRITORIAL CONTINUITY
REACTIVATION OF FORMER INFRASTRUCTURE

The Bay of Pula is punctuated by former quays inherited from the different periods of militarisation. Some are still in good condition, others partially degraded.

These quays are the trace of a time when the city lived with the sea, and today that link is severed. Restoring them means gradually reopening the coastline at the scale of the entire bay.

Historically, the inhabitants of Pula moved from one bank to another in small boats. The bay functioned as a circulation space where the boat was an everyday means of transport, just like walking. This practice gradually became obsolete through the progressive militarisation of the coastline and the development of the road network, leaving behind a whole network of quays and mooring points scattered around the bay. Reactivating these quays would mean reconnecting with this logic of sea-based travel.

On one hand, by restoring existing mooring points to allow residents to circulate freely in small boats as they once did.

And on the other, by establishing a small water-bus service operating as a regular maritime shuttle connecting the different banks of the bay—in the manner of the vaporetti in Venice.

Today, no internal maritime transport connects the different points of the coastline (apart from tourist boats). To get from the northern coastline to the city centre or the southern coastline, one must go around the entire bay by road.

A maritime shuttle would connect the Vallelunga site to the city centre and other points of the coastline in just a few minutes by sea.

Most quays around the bay are still usable. A few stone blocks have shifted or fallen, and vegetation has invaded some access points. But the structures hold; there is no need to rebuild everything.

It is enough to clear, consolidate what needs it, and reopen access. At the Vallelunga quay, local boats are already moored there every day.



Figure 61 : Photograph of a boat moored near the site, bearing witness to the nautical uses of the coastline



Figure 2 : Photograph of a resident sailing in Pula Bay



Figure 132 : Movements from quay to quay within Pula Bay



Figure 133 : Route taken by the maritime shuttle in Pula Bay

TERRITORIAL CONTINUITY
CONNECTION TO CYCLING ROUTES

In addition to the reactivation of quays and the water bus, the project proposes connecting the Vallelunga site to the rest of the city through a network of cycle paths built on former disused railway lines.
The whole forms a continuity around the bay that offers, for the first time, a continuous route between the northern coastline, the city centre, and the southern coastline.

This strategy is part of a tradition already proven in Istria. The Parenzana, a former Austro-Hungarian narrow-gauge railway linking Trieste to Poreč (123 km), was converted into a cycling and walking path in 2008 as part of the project "Parenzana: the Trail of Health and Friendship"[51].

The Parenzana follows the old railway route over 123 km through Italy, Slovenia, and Croatia, passing through tunnels, viaducts, and villages[51]. Around the Bay of Pula, the railway lines that served the military installations are still partially visible.

They are relatively flat since they were designed to transport materials, making them good foundations for cycle paths. Where rails are still in place, they are kept; the path is covered with compacted gravel and the rails protrude slightly from the ground, as a reminder of what the site was used for before.

The surface uses local and permeable materials: fine local gravel, stabilised sand, and recycled aggregates produced locally in the former extraction zone of the northern military site nearby.
These materials limit ground sealing and integrate visually into the landscape; they can be implemented with simple technical means.

Combined with the network of restored quays and the water bus, this cycling circulation gives residents an alternative to the car for getting around the bay.

The Vallelunga site thus becomes a convergence point between these two soft mobility systems. You arrive by bike via the old railway lines; you leave by sea from the quay.

This complementarity between land and water can help forge a link between the city and its coastline that militarisation had severed.

[51] *Istarska županija / Colours of Istria, " Parenzana : The Trail of Health and Friendship "*



Figure 134 : Plan of the new cycling continuities around Pula Bay



Figure 135 : Perspective view of the cycle path running along the coastline, generated with the aid of artificial

Figure 136 : Photograph of remnants of the railway tracks at the entrance to the military zone



Figure 137 : Photograph of remnants of the railway tracks at the entrance to the project site



Figure 138 : Photograph of remnants of the railway tracks within the site



Figure 139 :Photograph of remnants of the railway tracks at the entrance to the site



REUSE OF STRUCTURES
THE BOAT WORKSHOP

Croatia has 226 nautical ports along its coastline, totalling 19,073 berths[52]. In 2024, 231,477 vessels used these ports[52]. The majority of permanently moored boats measure between 12 and 15 metres (33% of the total), followed by those of 10 to 12 metres (27%)[52].

Nearly half (45%) sail under the Croatian flag[53]. In 2023, the County of Istria had the highest number of permanently moored boats in all of Croatia[53].

These figures illustrate a nautical culture deeply rooted in the daily life of Istrian coastal residents. In Pula, this can be seen directly at the Vallelunga site: boats moored at the quay, fishermen maintaining their vessels right on the stone, hulls hauled out of the water for repair.

These practices, described in section 1.2.3, call for a space dedicated to the construction, repair, and maintenance of boats. This is the role of the boat workshop, which can accommodate a good proportion of boats (under 10 metres)—the first element of the Shared Workshop's programme.

This nautical culture is lived daily. In an exchange, Ivana Krtinić, project manager in Pula, sums up this reality simply: "Here, we don't necessarily have a garden, but we can have a boat and go out with our family at the weekend. You just need a place to maintain it"[57].

The Vallelunga quay already serves this purpose. Residents haul their boats out via the existing ramp and repair them directly on the stone. The boat workshop simply gives them a roof, tools, and the support of marine carpenters.

[52] *Državni zavod za statistiku (DZS), " Nautical Tourism - Capacity and Turnover of Ports, 2024 "*

[53] *Državni zavod za statistiku (DZS), " Nautical Tourism - Capacity and Turnover of Ports, 2023 "*

[57] *KRTINIĆ, Ivana (2025), échanges, responsable de projet, Pula, Croatie.*

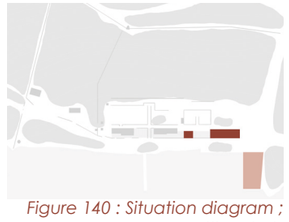
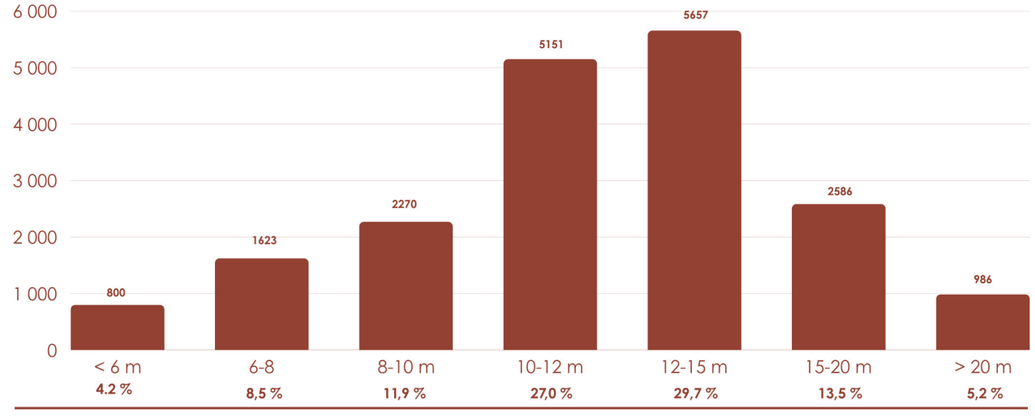


Figure 140 : Situation diagram ; maritime hub

RÉPARTITION DES PLACES D'AMARRAGE PAR TAILLE DE BATEAU

Croatie, 2024 — Total : 19 073 places



Državni zavod za statistiku (DZS), Nautical Tourism – Capacity and Turnover of Ports, 2024

Figure 141 : Graph showing the proportion of planned mooring spaces according to boat sizes in Croatia

A direct reference illuminates what such a space can be. **The Atelier des Barques de Paulilles**, in the Pyrénées-Orientales, has been installed since 2010 in a former warehouse of the Nobel dynamite factory, on a site acquired by the Conservatoire du Littoral in 1998[54].

As at Vallelunga, the context is that of an industrial brownfield by the sea, rehabilitated with respect for the existing heritage. The workshop's vocation is the restoration of a collection of some forty Mediterranean boats classified as "musée de France", the training of apprentice marine carpenters, and the transmission of know-how related to traditional boatbuilding[55].

The space is organised on two levels: the lower part hosts the restoration workshop, while an elevated walkway allows visitors to observe the carpenters at work[56].

A specialised documentation centre and an exhibition space complete the facility[56].

The workshop welcomes approximately 30,000 visitors per year and participates every two years in the lateen sail gathering in the Bay of Paulilles[55]. What is remarkable is the coexistence between artisanal production, professional training, and public access: people make, learn, and watch, all in the same place.

At Vallelunga, the boat workshop follows this logic. It is located in one of the seafront buildings, in direct relation to the quay, with a water access ramp just beside it.

It offers a space for naval construction and repair accessible to local associations (ŠK Uljanik, Sportsko Ribolovno Društvo, Club Veslački Kleber Šta) and above all open to the public.

There is a storage space for various materials—fishing equipment or tools. There is also, very close by, the fishermen's house. This is a rehabilitation of the building adjacent to the boat workshop, dedicated to fishermen.

It offers them a changing room, toilets, showers, a rest area, and a kitchen at their disposal. A place to leave one's things in the morning before going out to sea, to gather on return, to warm up, to eat together.

One can also envisage associating the rowing club, which does not have large premises, and a local point of sale for fresh fish (taking place under the covered space at the centre of the site), reinforcing the site's anchorage in the everyday maritime practices of the bay.

[54] *Conservatoire du Littoral, " Anse de Paulilles "*

[55] *Conseil départemental des Pyrénées-Orientales, " Atelier des Barques "*

[56] *Les Pyrénées-Orientales, " L'atelier de restauration des barques catalanes à Paulilles "*

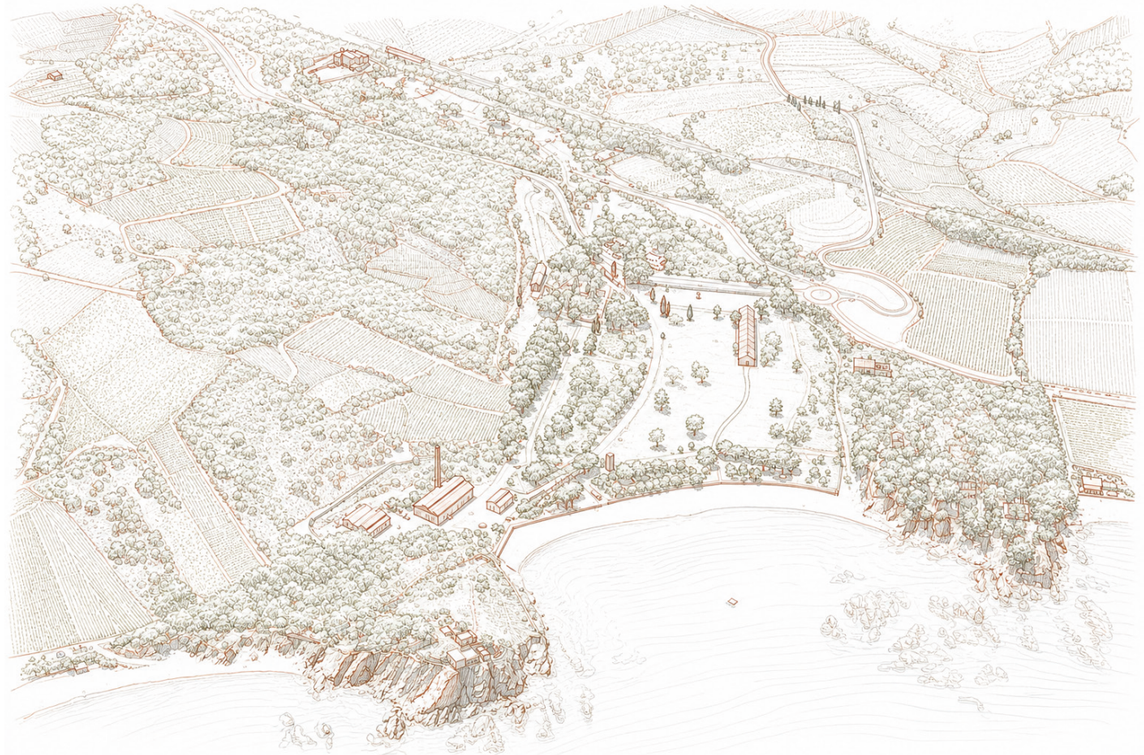


Figure 142 :Situation sketch of the Anse de Paulilles site

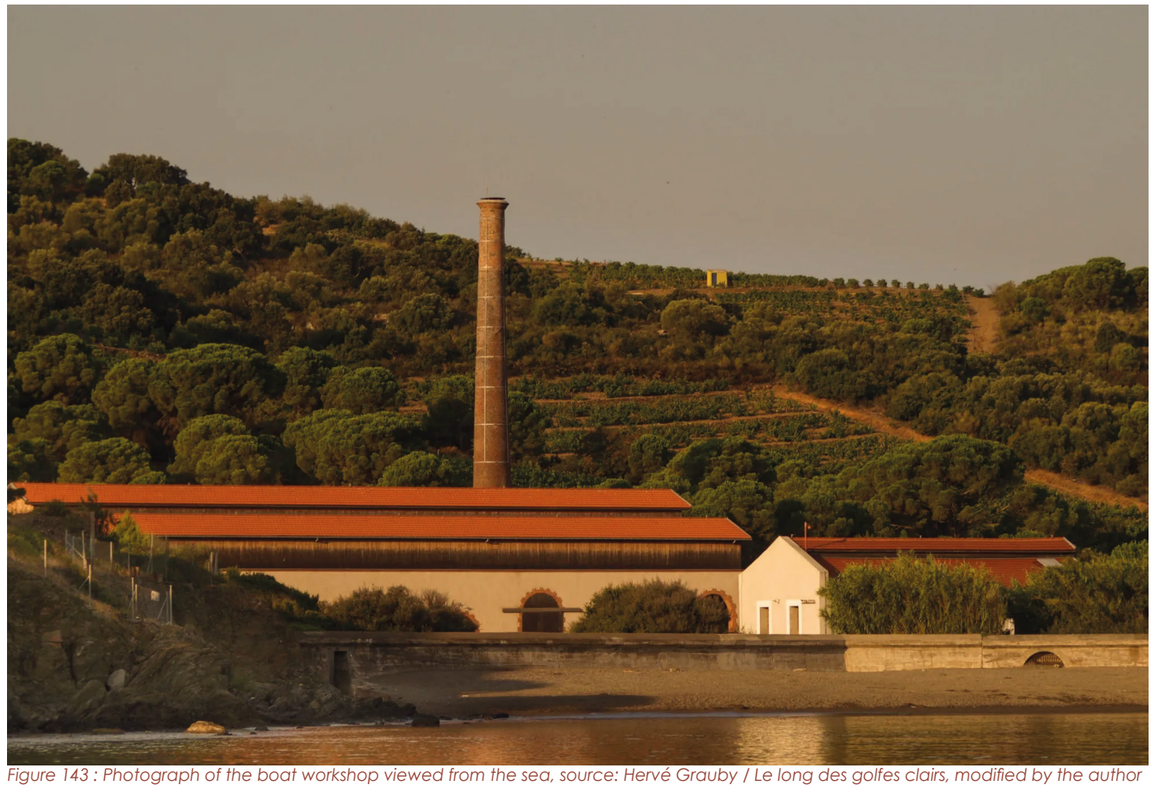
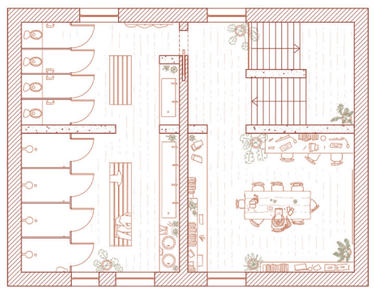
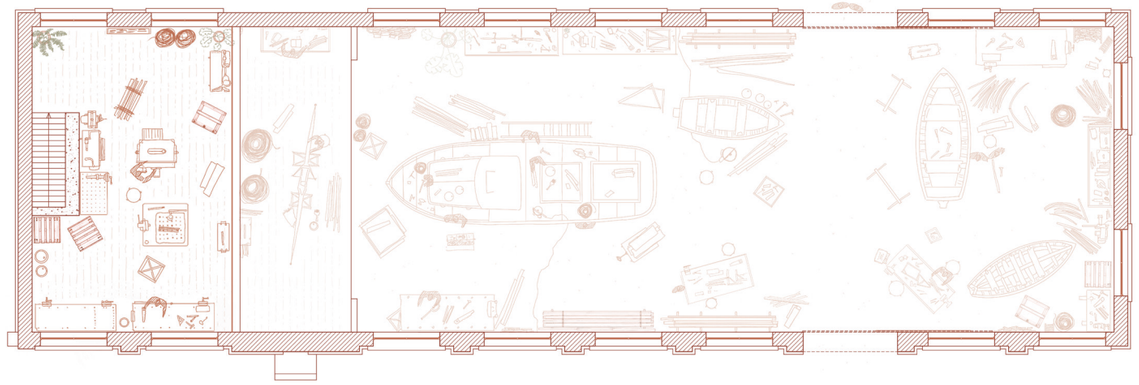


Figure 143 : Photograph of the boat workshop viewed from the sea, source: Hervé Grauby / Le long des golfes clairs, modified by the author



Figure 144 : Interior photograph of the boat workshop, source: Hervé Grauby / Le long des golfes clairs, modified by the author





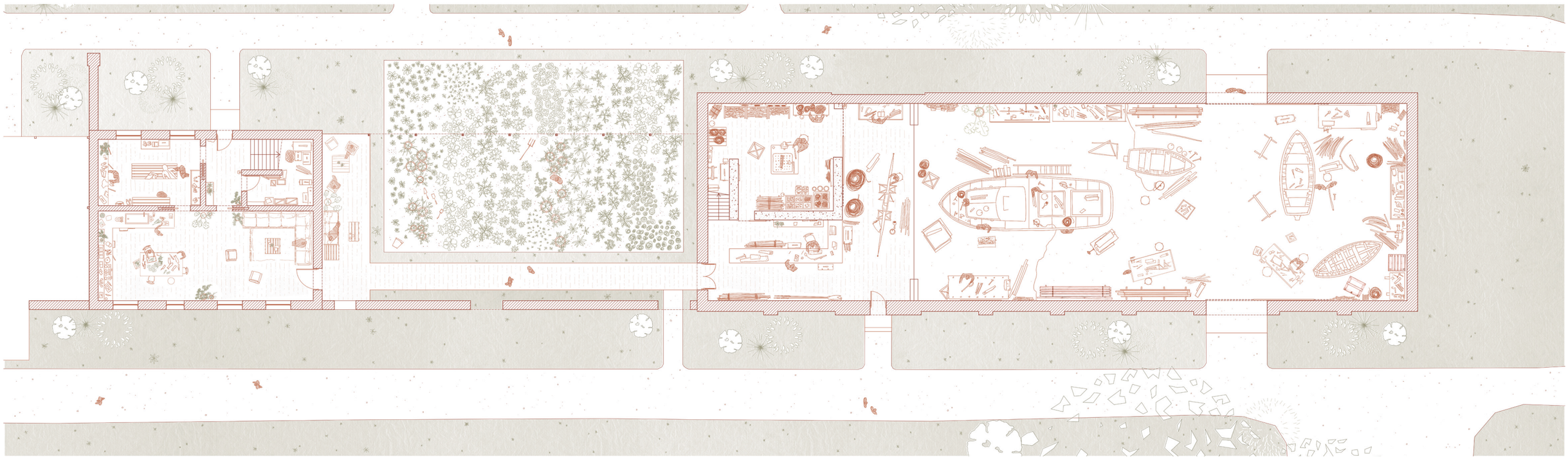


Figure 145 : Ground-floor and first-floor plans of the boat workshop from this final-year project

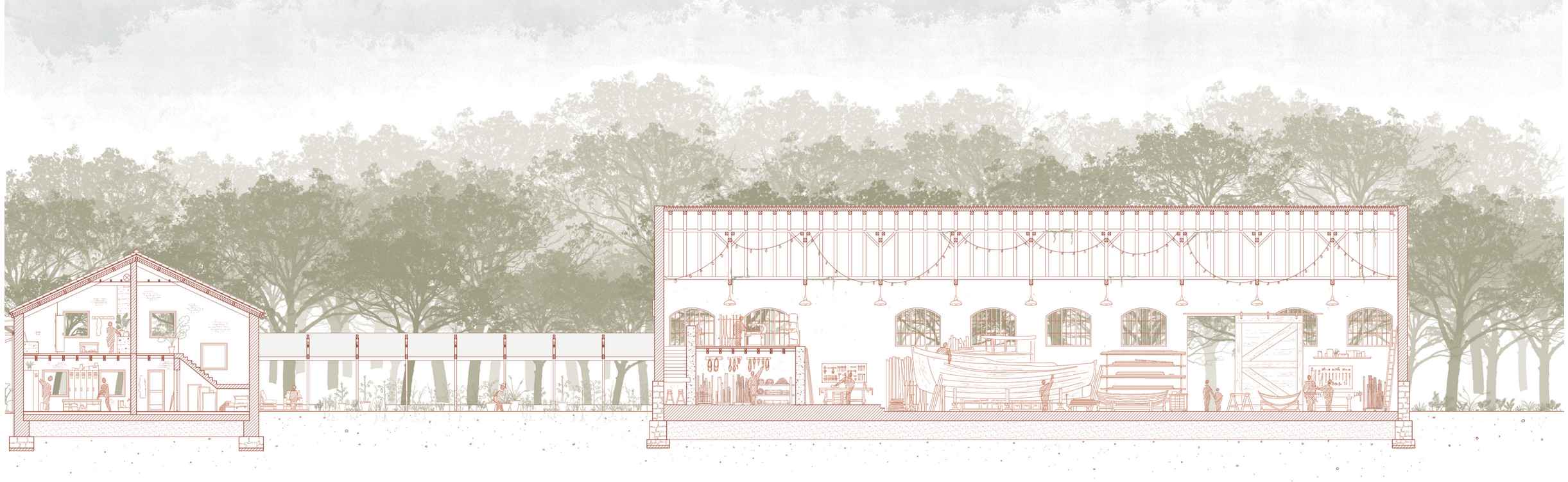


Figure 146 : Section of the boat workshop from this final-year project

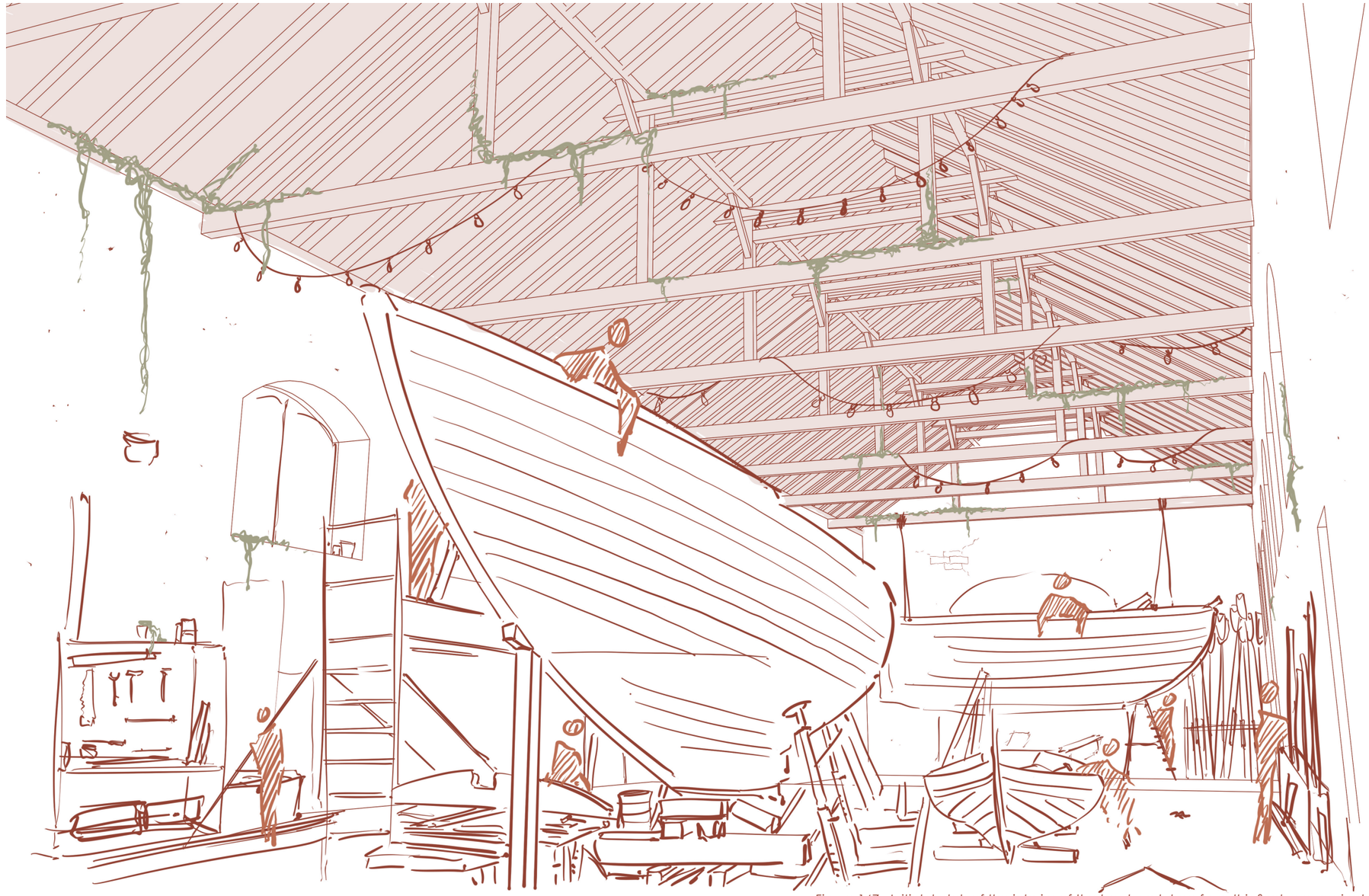


Figure 147 : Initial sketch of the interior of the boat workshop from this final-year project

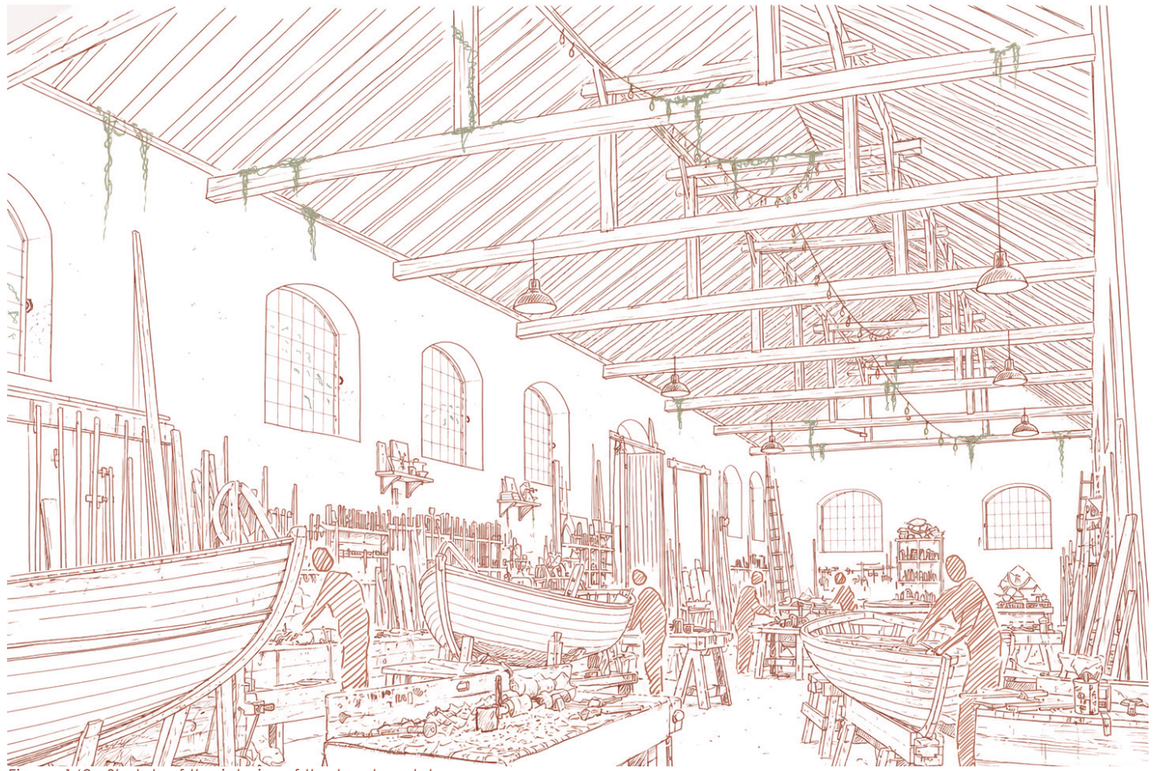


Figure 148 : Sketch of the interior of the boat workshop



Figure 149 : Sketch of the interior of the boat workshop and upper floor

REUSE OF STRUCTURES
TOOL LIBRARY AND VARIOUS WORKSHOPS

If the boat workshop and the fishermen's house respond to sea-related needs, the site also hosts broader practices of making and repairing. This is the role of the tool library and its workshops.

The tool library occupies one of the existing buildings. The principle is simple: you come, borrow a tool, and bring it back later.
No need to equip yourself to repair a piece of furniture or do DIY at home. Inside, there is a reception area and a tool reserve for managing loans.

An adjoining room serves as a workshop for bad weather days or other needs (exhibitions, artistic performances, various public workshops), while under the roof extensions outside, sheltered spaces allow for outdoor tinkering, bicycle repair, or woodwork. Bicycle storage is also provided.

It is the same idea found throughout the programme: sharing tools and spaces instead of everyone buying everything on their own. And since artisans already work on the site, they can lend a hand to those who need it.

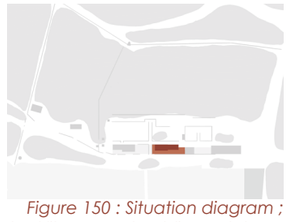


Figure 150 : Situation diagram ; tool library and public workshops



Figure 151 : Sketch of the interior of the tool library

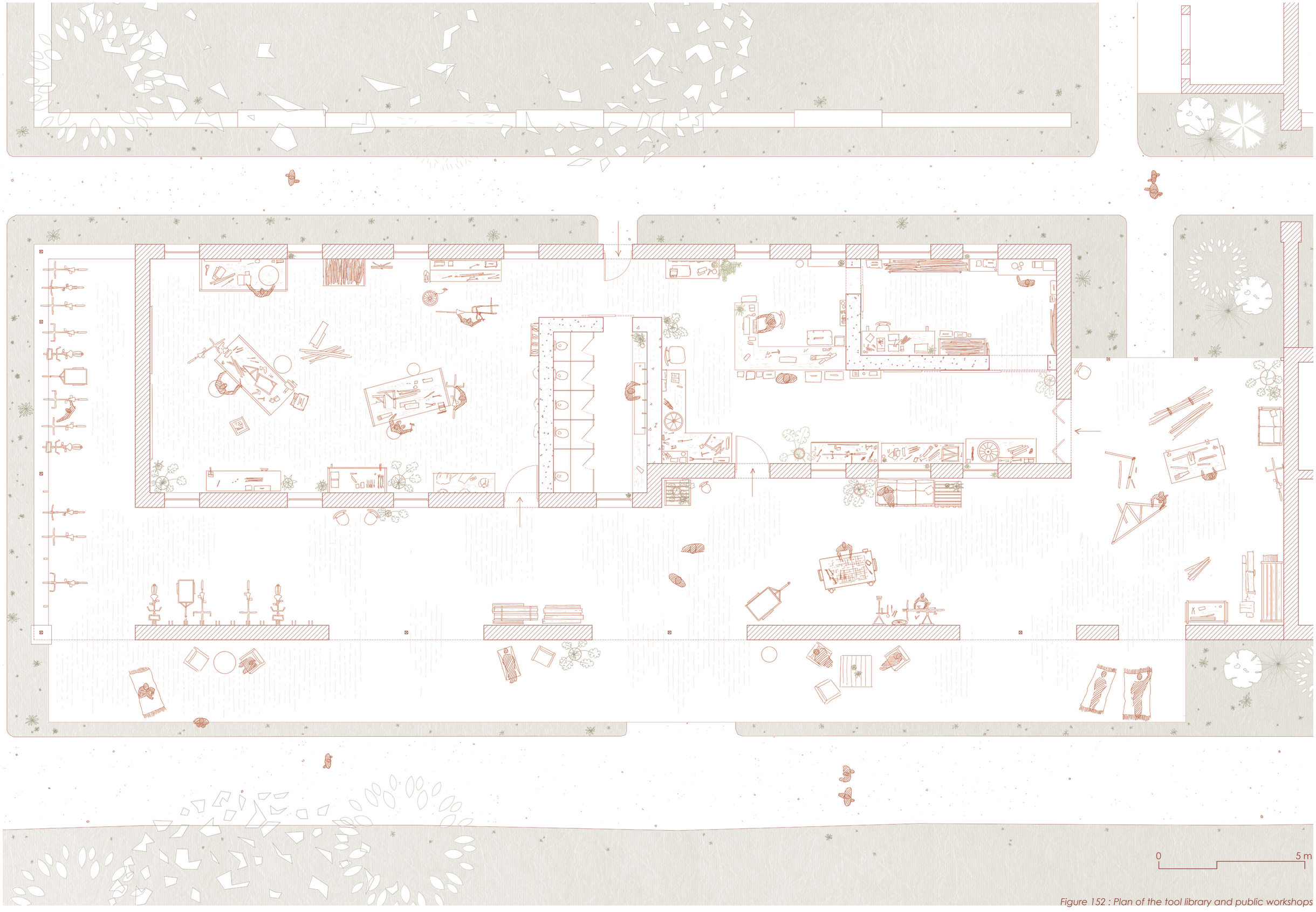


Figure 152 : Plan of the tool library and public workshops



Figure 153 : Section of the tool library and public workshops

REUSE OF STRUCTURES
MULTIPURPOSE SPACES AND SERVICES

A little further left on the site, in the rehabilitated buildings, the multipurpose spaces provide a reception and gathering function accessible to all.

A multipurpose hall and a shared kitchen allow for hosting various events—a family birthday, an association meeting, or a neighbourhood meal. Public toilets complete these basic services, something that does not exist on the site today.

Outside, there are wooden terraces extending the spaces under the roof extensions beyond the old protective walls. A Balkan oven is installed on the terrace, offering a collective outdoor cooking point.

This type of oven is typical of local culture. I have attended many such occasions, and it is truly a moment of gathering, in the same way that our summer barbecues bring families together at home.

One can imagine, for example, a spring Saturday where a family uses the hall for their child's birthday. The children run around in the green space at the rear of the site and play football while the parents prepare the meal in the kitchen.

The grandfather lights the Balkan oven on the terrace. You then cross paths with neighbours who came for a walk along the quay and stop to say hello. Someone brings back fresh fish bought right on the site when the fishermen returned.
You eat outside, under the roof extension, with a view of the bay. The children go back to playing ball and the day naturally extends without schedule or programme. People fish, rest, and walk to digest. The place allows it.

These terraces cross the old stone walls that once delineated the plots. What was once a closed boundary becomes a threshold that life now passes through. Activities spill from the buildings into the green spaces at the front of the site, where one comes to sit on a sun-facing terrace.



Figure 153 : Schema de situation; Espaces polyvalents

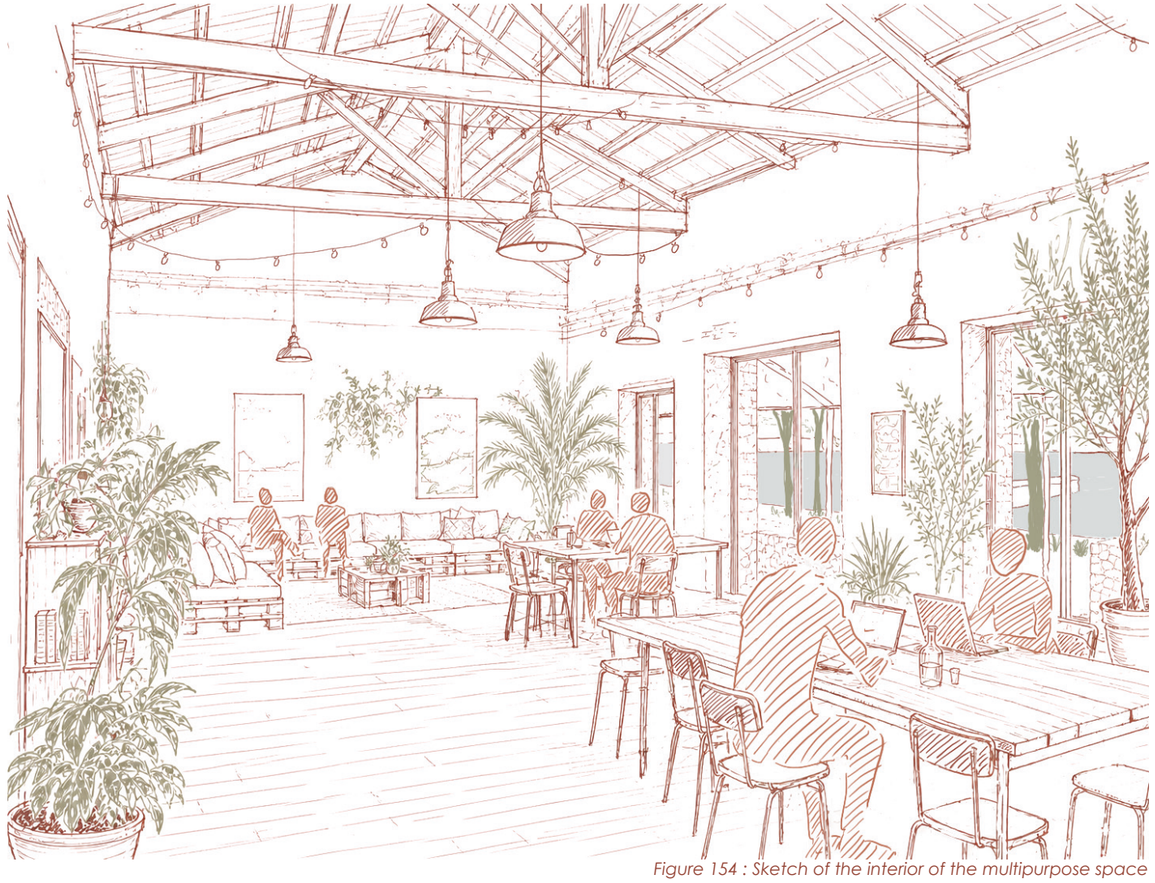


Figure 154 : Sketch of the interior of the multipurpose space

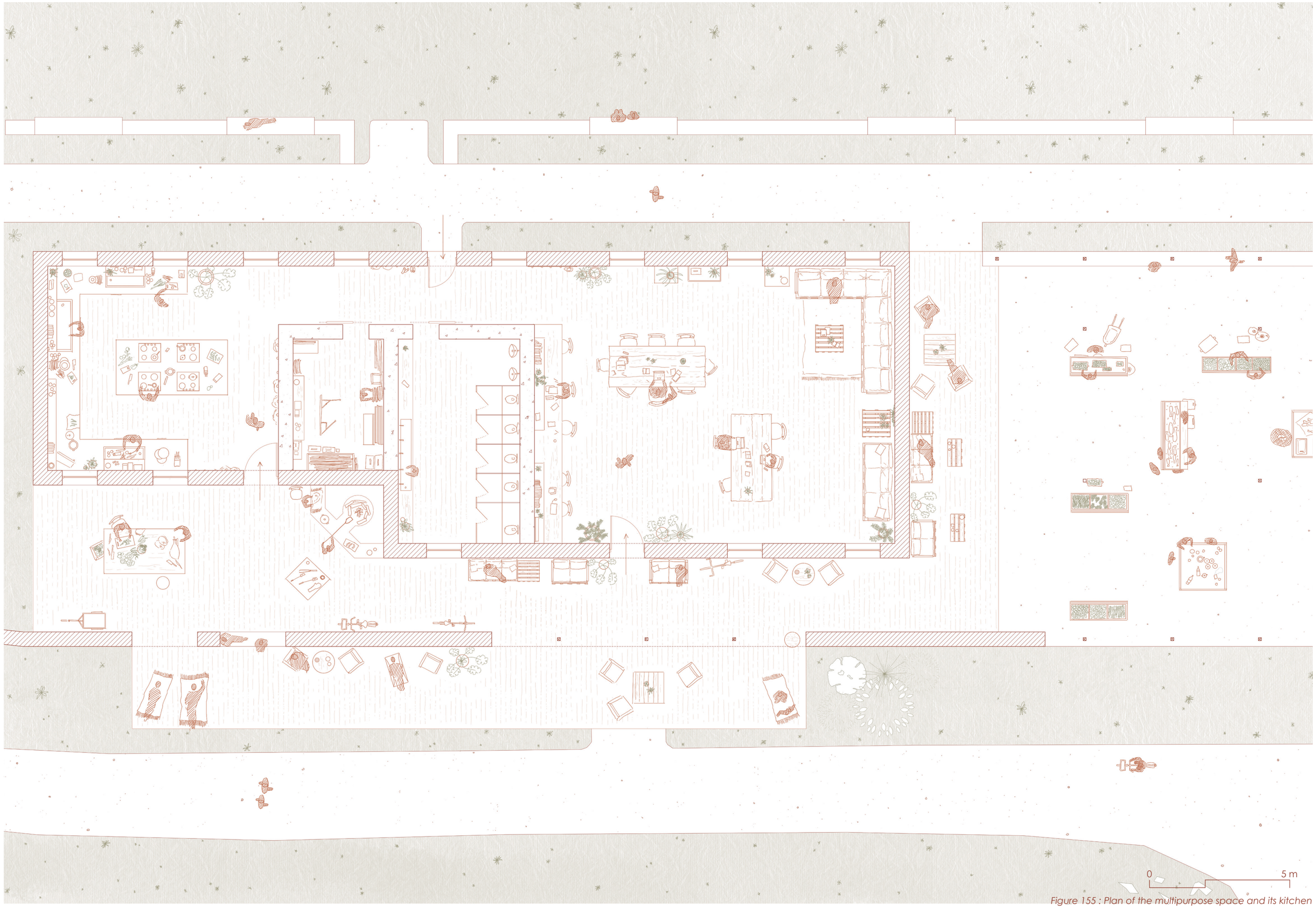


Figure 155 : Plan of the multipurpose space and its kitchen



Figure 156 : Section of the multipurpose space and its kitchen

REUSE OF STRUCTURES
CRAFT WORKSHOPS

At the far eastern end of the site, slightly set back and more introverted, two limestone volumes host stone-carving, sculpture, or rammed-earth construction workshops.

These former storage buildings, described above, are distinguished by the thickness of their walls and their exposed material. Here, the false ceilings are removed to reveal the timber roof structures and restore the spaces to their full height.

The roofing is replaced; Istrian terracotta tiles (kupa kanalica) are still used, and the gables are opened on both sides to allow natural evacuation of stone dust, using the original joinery but adding a system allowing their vertical rotation.

The first workshop on the right is dedicated to stone carving—directly connected to the material that constitutes the site itself and Croatian culture—or to earth construction.

The second hosts larger-scale sculpture, in collaboration with HUIU and Metamedija. These two workshops are deliberately set apart from the rest. They are further from the bustle of the seafront, and you can feel it.

The thick stone walls keep things cool in summer and absorb noise, as does the floor slab—which suits the type of work done there well.

Here, as with the mentality of the rest of the project, I want to preserve what is there, make it usable, and let use settle in.

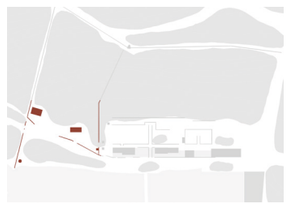


Figure 157 : Situation diagram ; craft workshops



Figure 158 : Interior sketch of the craft space — right-hand hall

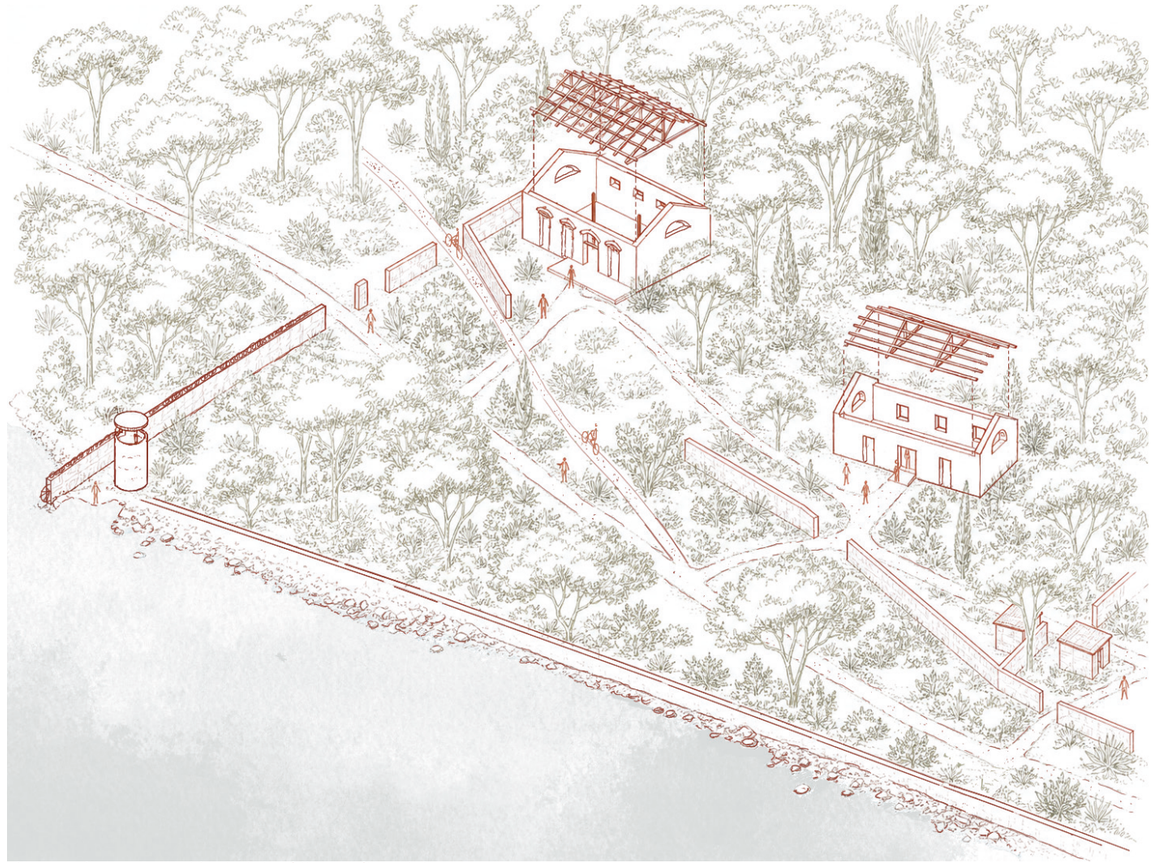


Figure 159 : Axonometric sketch of the craft workshops

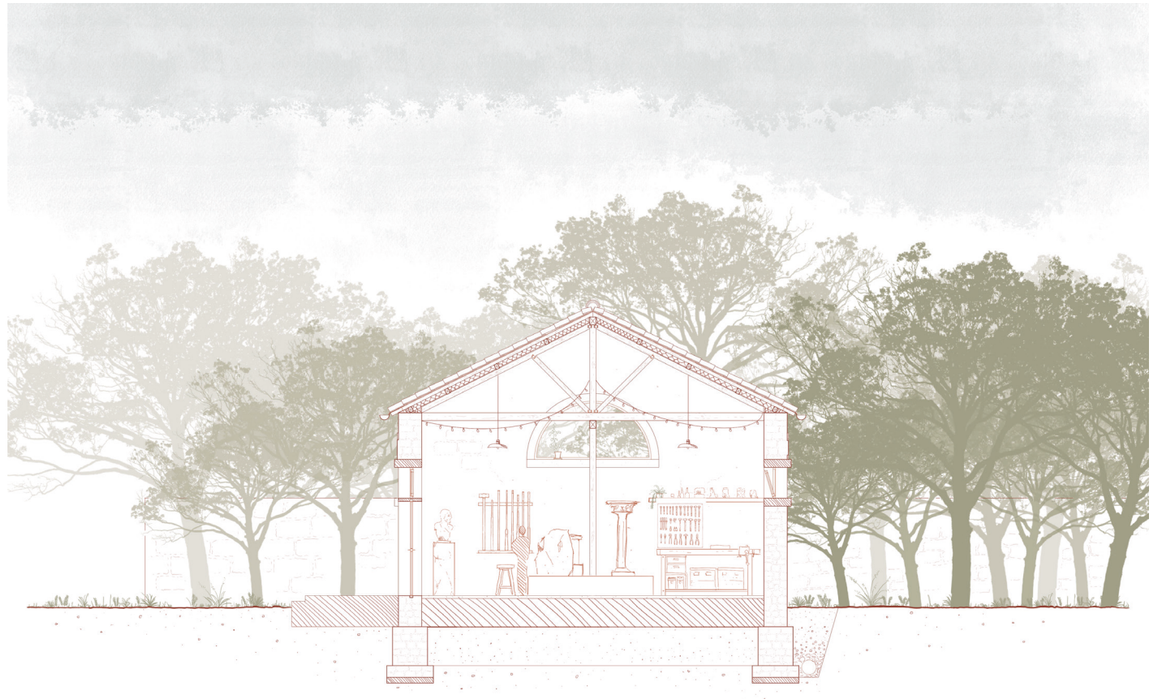


Figure 160 : Cross-section of the left-hand craft workshop

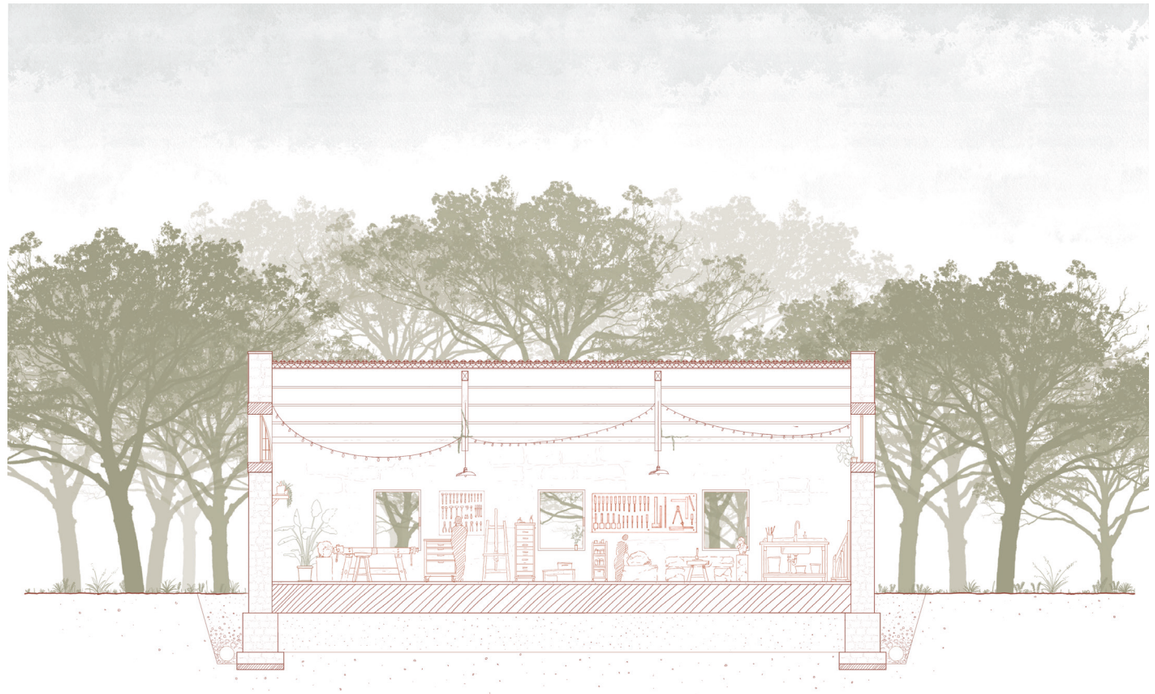


Figure 161 : Longitudinal section of the right-hand craft workshop

CONTRIBUTIONS TO THE SITE
GATHERING SPACES

The roof extensions constitute the binding element of the project. These light extensions, in timber structure and natural fibre canvas, come to connect the buildings to each other and cover the intermediate spaces, creating sheltered areas in the open air.
Their materiality deliberately contrasts with the tile roofing of the existing buildings, making the distinction between heritage and intervention legible.

They extend indoor activities outward: you leave the workshop to work outside, you leave the multipurpose hall to eat on the terrace, you move from one building to another without interruption, under cover.

These canvases recall the sails of boats passing in the bay while avoiding overheating the spaces and allowing filtered light into the existing buildings.

These covered spaces bring things together. For example, artisans cross paths with fishermen, families on a walk stop to watch a carpenter at work, children circulate freely from one hub to another.

The roofs unify the site without compartmentalising it, preserving the porosity between buildings.

At the centre of the site, a large open and covered space is created. A sheltered square capable of hosting occasional uses: a fresh fish market from that morning's catch from the neighbouring quay, a weekend flea market, fruit and vegetable stalls from the site's gardens, or a summer open-air bar where you come for a drink and a meal facing the bay.

These events change with the seasons: the fish market in summer, the flea market at weekends, vegetable stalls after harvests, the open-air bar during fine weather. It is often here that residents from neighbouring areas first set foot on the site. Between the buildings, salvaged or site-made furniture is installed—limestone and wood benches, and a few children's play items in the green spaces.



Figure 162 : Situation diagram ; covered multipurpose space

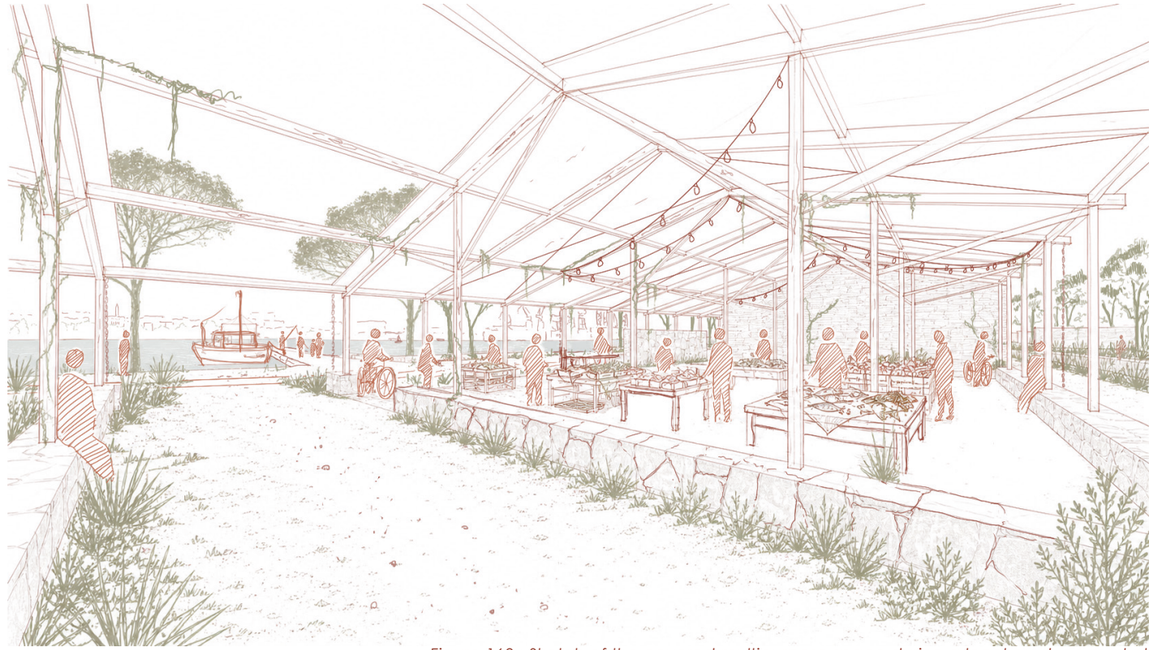


Figure 163 : Sketch of the covered multipurpose space during a local produce market

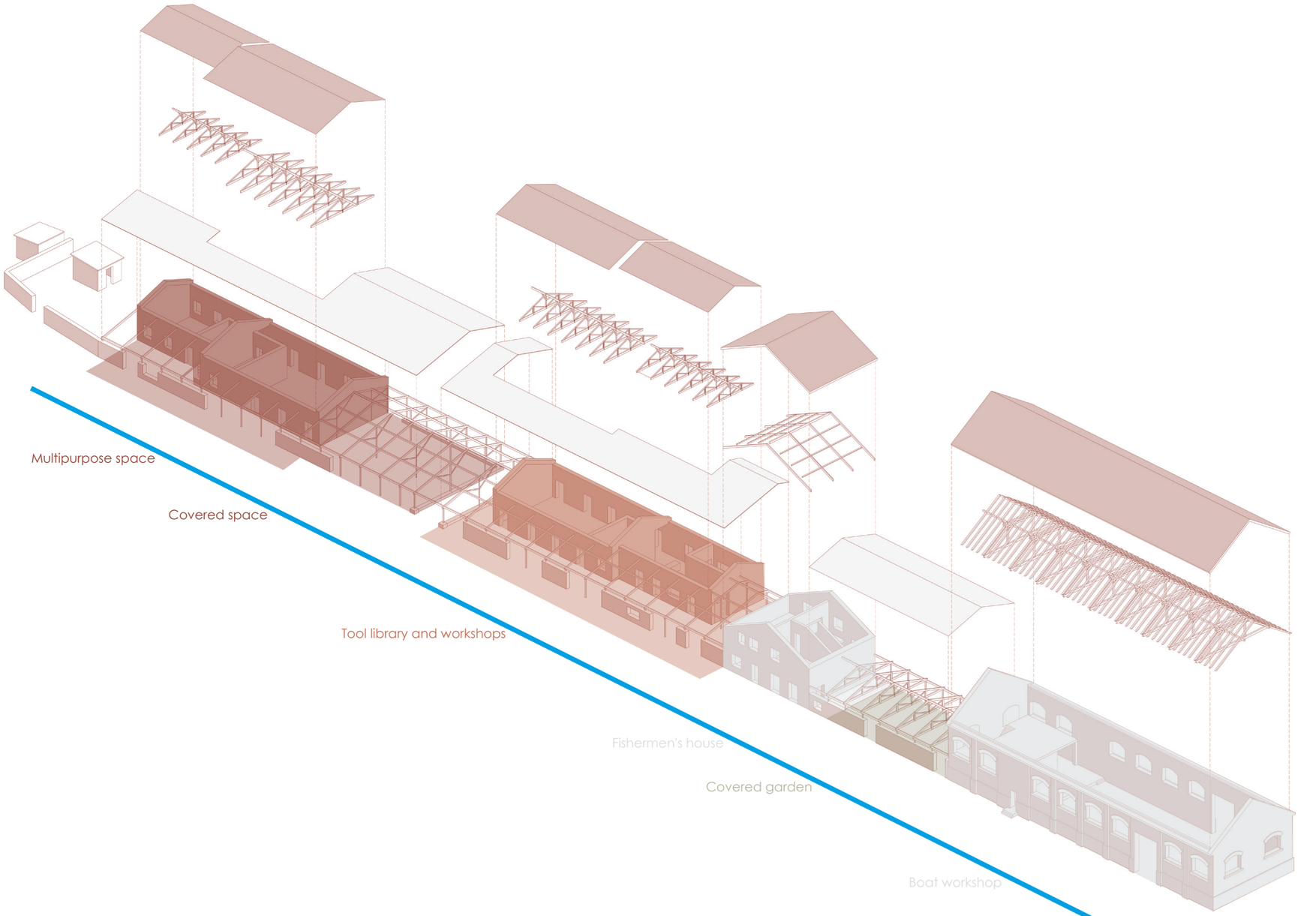


Figure 164 : Axonometric drawing showing the new additions and their functions

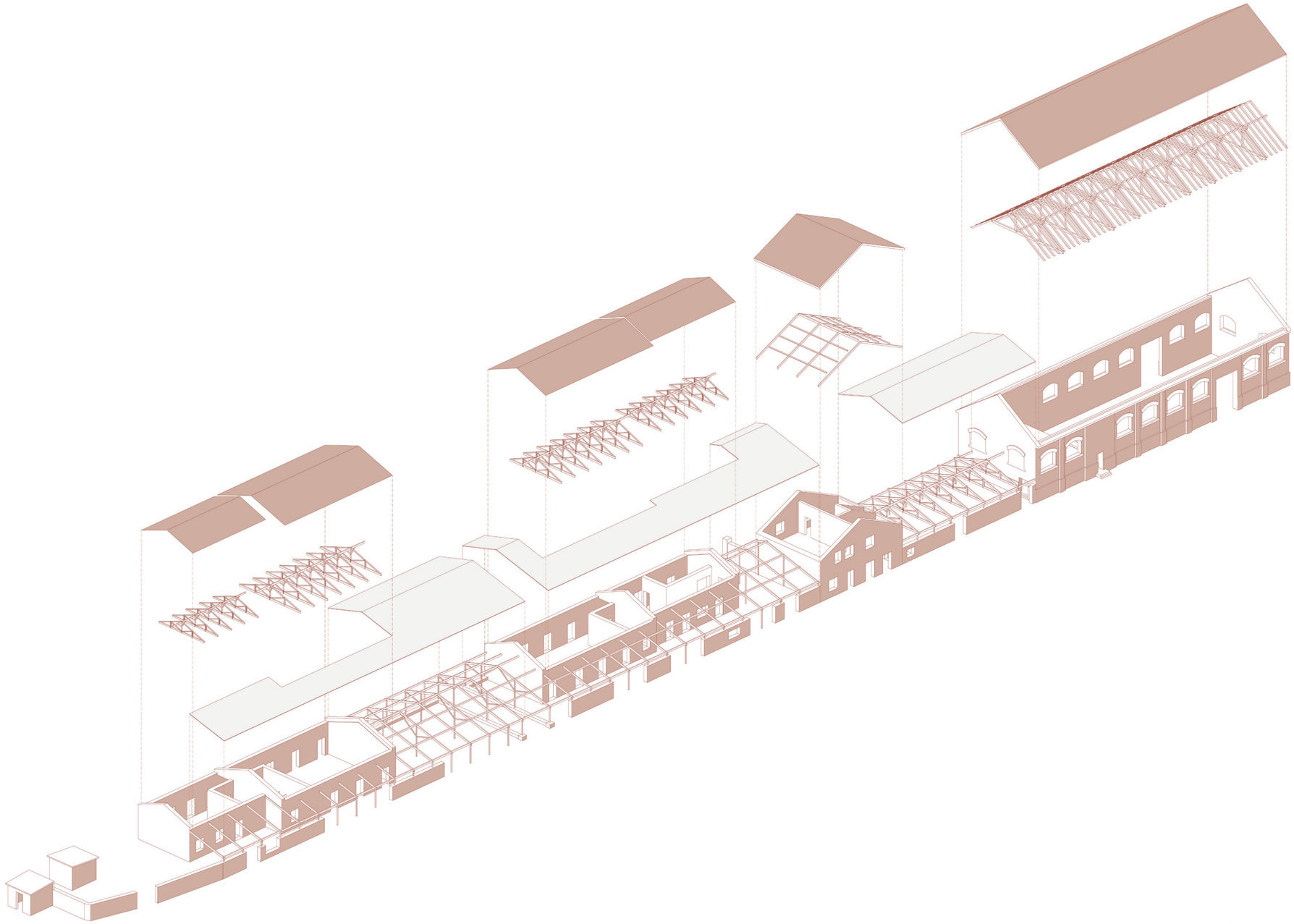


Figure 165 : Axonometric drawing of the waterfront section of the project

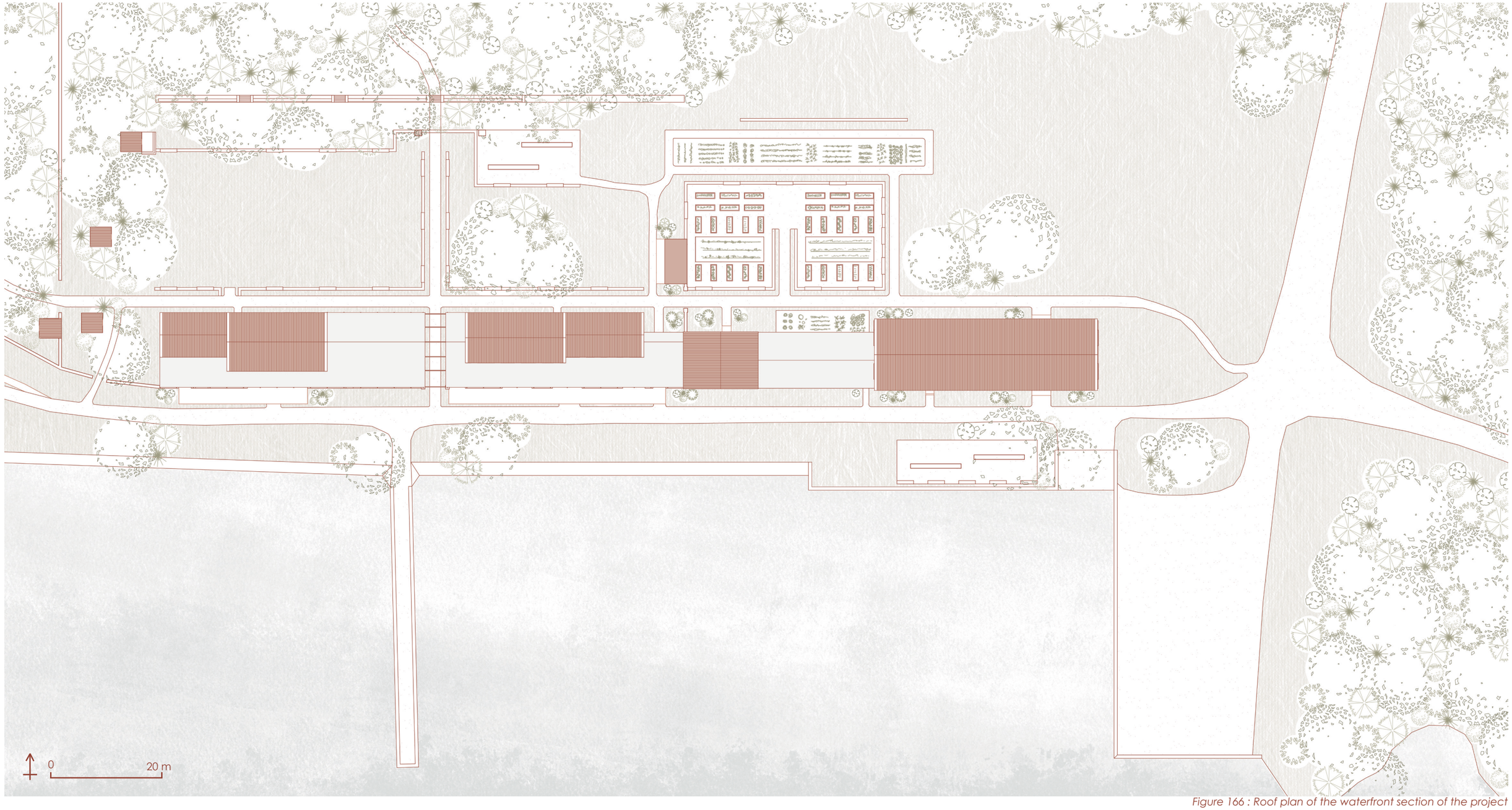


Figure 166 : Roof plan of the waterfront section of the project

CONTRIBUTIONS TO THE SITE
COMMUNITY GARDENS

Behind the buildings, in the open strip between the built area and the pine forest, the green spaces host community gardens organised on the model of allotment gardens. The old low limestone walls that structure the site naturally delineate the plots, offering each garden a frame already drawn by the history of the place.

Management of the whole is carried out in partnership with the association Zelena Istra.

The terra rossa of the site constitutes a recognised cultivation soil. Since Roman times, the red coastal soils of Istria have been used for vines, olive trees, and fig trees[58].

In open ground, the plots accommodate crops suited to this soil and the Mediterranean climate, in raised beds built from reused bricks from the former garages demolished on the site: tomatoes, courgettes, aubergines, peppers, beans, onions, garlic, salads, and strawberries[59].

A few fig trees and grapevines complete the ensemble, in keeping with the Istrian agricultural landscape. Compost will supplement the clay soil for crops requiring a lighter substrate.

Between the fishermen's house and the boat workshop, a roof extension creates a covered space dedicated to more fragile crops. The principle is inspired by the Gutshof Güldenhof by Heim Balp Architekten (Stechlin, Germany, 2021), where former stables were transformed into a growing space, preserving the exterior stone walls and replacing the roof with a light structure[60] [61].

Here, a natural fibre canvas stretched over a timber structure covers the space—as for the rest of the created spaces—filtering light and protecting the plants from sea wind while allowing air to circulate freely.

Under this covered space, one finds seedlings at the start of the season (tomatoes, peppers, aubergines before transplanting in open ground), aromatic herbs grown year-round (rosemary, sage, oregano, basil, parsley, mint), potted citrus (lemons and citrons), and plants sensitive to sea wind (cucumbers and chilli peppers).

The harvests directly supply the stalls under the central hall and the kitchen of the multipurpose spaces. On this site, you cultivate, harvest, cook, and share.



Figure 167 : Situation diagram ; cultivation areas and vegetable

[58] *Istarska županija, " Geographic data "*

[59] *Expat in Croatia, " Culture of gardening in Croatia "*

[60] *Heim Balp Architekten, " Gutshof Güldenhof "*

[61] *ArchDaily, " Gutshof Güldenhof Center for Art and Sustainable Living / Heim Balp Architekten "*



Figure 168 : Situation diagram: Sketch of the interior of the Gutshof Güldenhof greenhouse

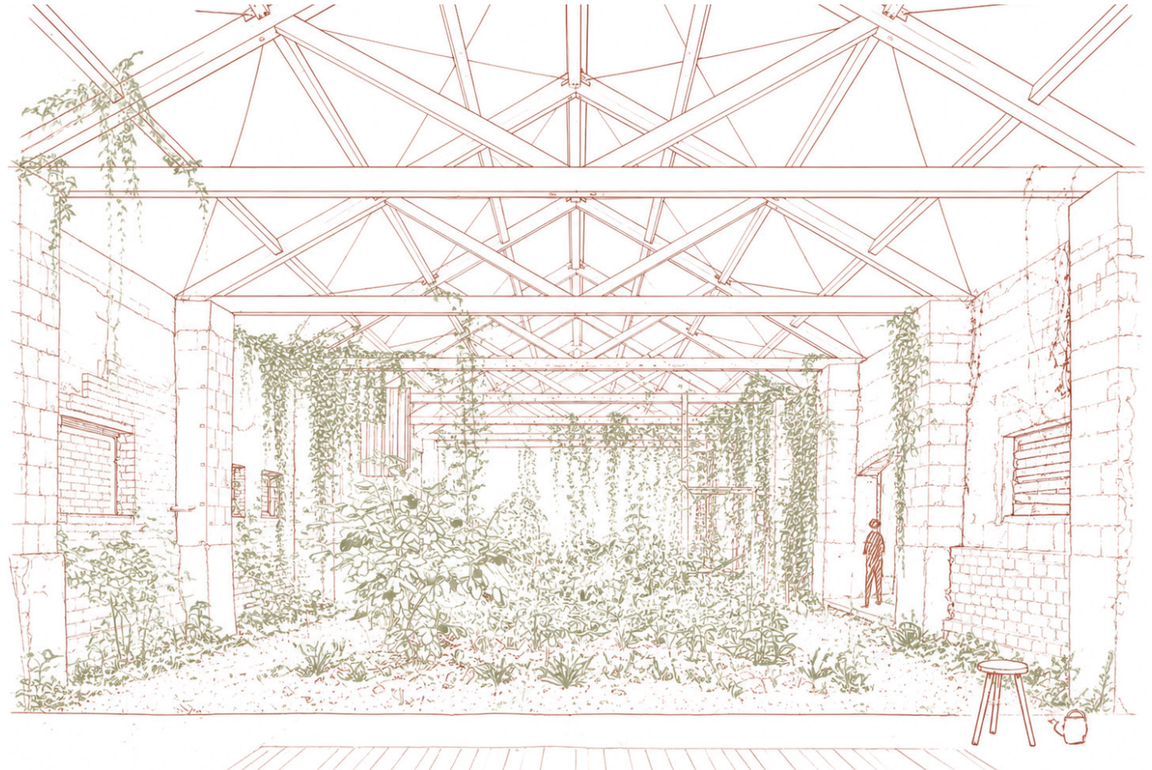


Figure 169 : Sketch of the interior of the Gutshof Güldenhof greenhouse



Figure 170 : Sketch of the covered cultivation space forming a transition between two modules

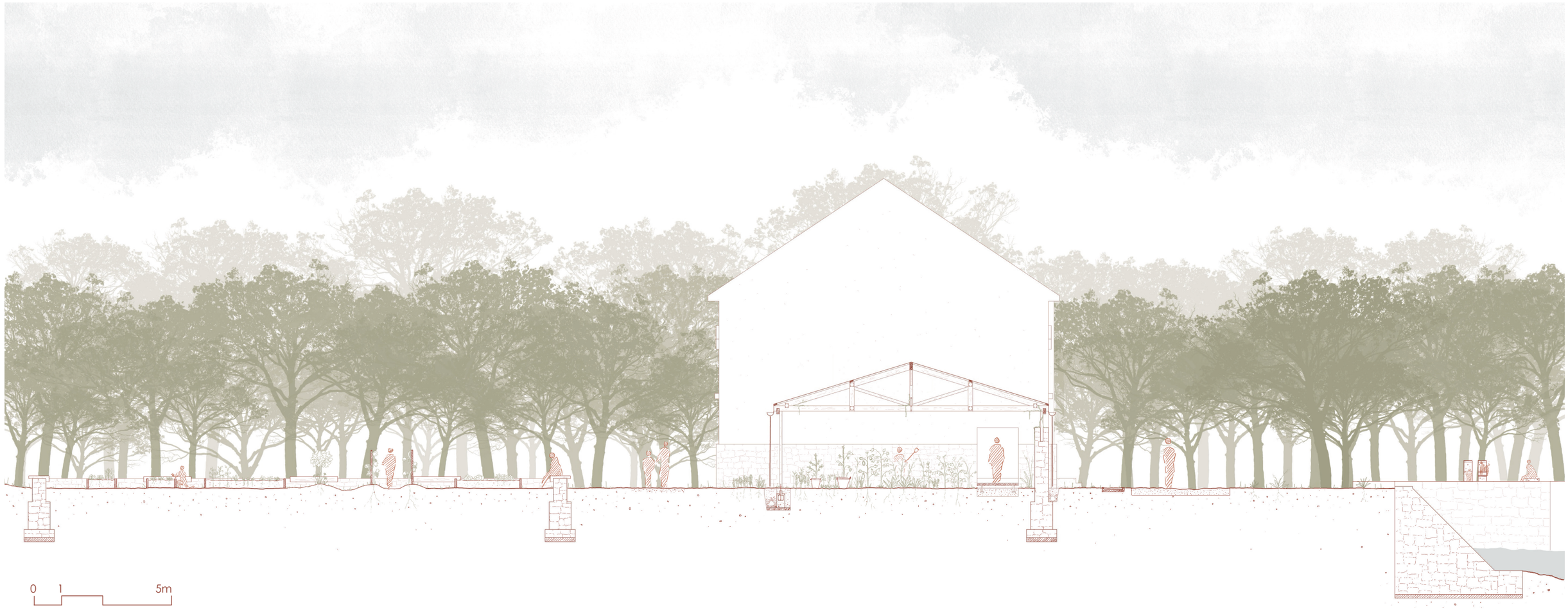


Figure 171 : Inhabited section of the cultivation area and vegetable gardens

1: Timber rafter 200×100 mm
2: Timber purlin 50×120 mm
3: Timber tie beam 200×100 mm
4: Timber beam 200×100 mm
5: Timber post 100×100 mm
6: PVC-free exterior textile canvas, white
7: Gutter fixing bracket
8: Eaves purlin 200×50 mm
9: Powder-coated aluminium gutter
10: Gutter outlet
11: Stainless steel 316 rain chain
12: Threaded rods
13: Metal base plate
14: Thin shims
15: Nut and washer
16: Hex head bolt

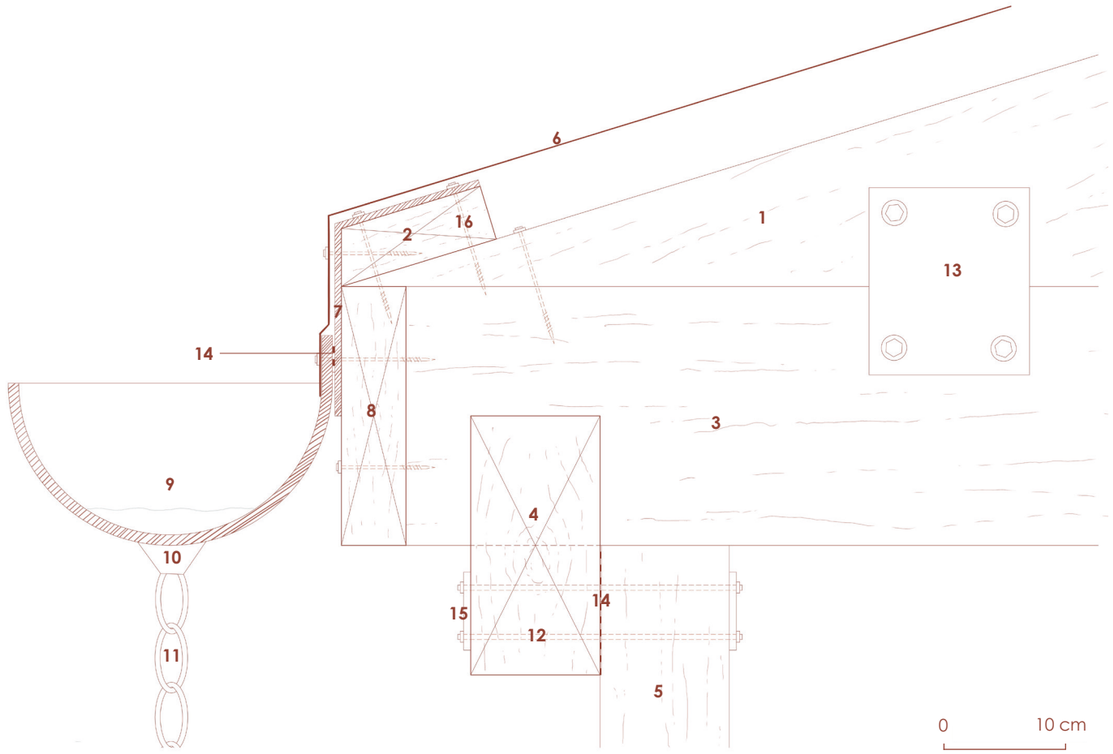


Figure 172 : Detail of the fixing of the exterior textile membrane to the timber structure

All of these interventions form a whole. The Vallelunga site, as proposed here, does not rely on a spectacular architectural gesture.

It builds on what is already there: stone buildings that are rehabilitated, quays that are restored, walls that delineate gardens, roof structures that are revealed, and above all uses that are formalised.

The new canvas and timber-structure roofs come to bind these elements together, creating spatial continuity where there were only fragments.

The rammed earth, made on site, gives the new partitions the same colour as the site's soil due to the terra rossa. And on the mobility side, it is the cycling routes and water buses that connect the Vallelunga site to the rest of the territory and the coastline.

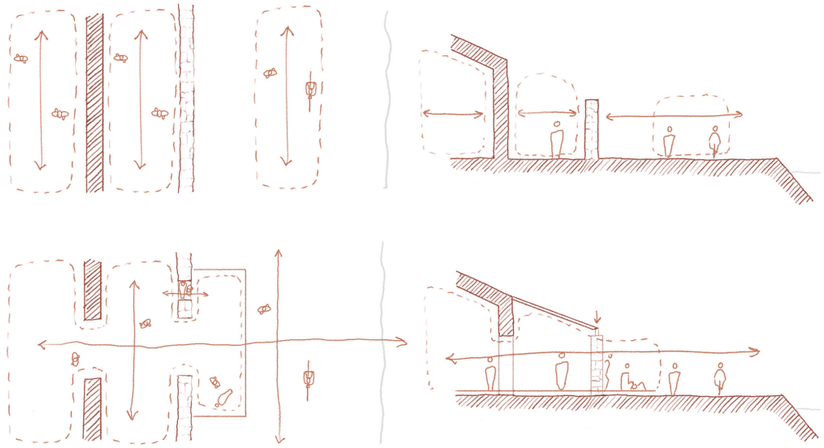
The terraces and outdoor spaces cross the great defensive wall on the seafront—this boundary that for a long time separated the site from the bay. What was a military barrier becomes a threshold that life now passes through and on which the roofs gently rest.

By crossing the former defensive walls, the project gives access back to the coastline. The shared workshop settles between the pine forest and the sea. For the fishermen and residents who already use the site, but also for all those who have never set foot there.

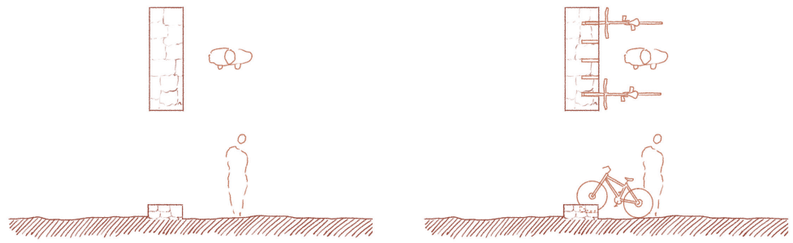


Figure 173 : Sketch of an outdoor installation with children playing on it

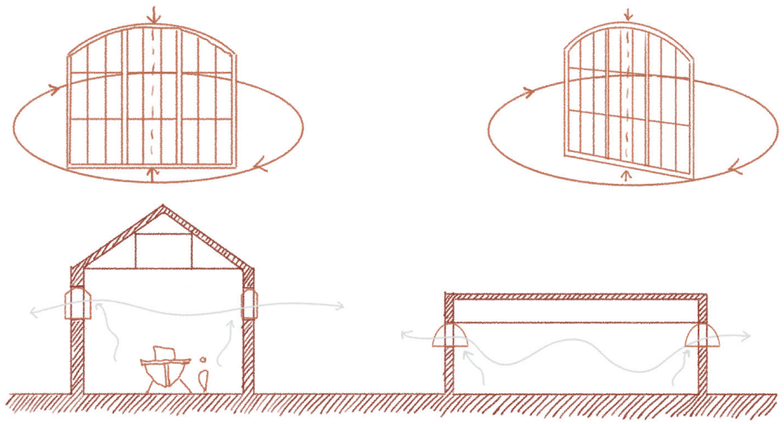
Figure 174 : Catalogue of the main devices implemented in this final-year project, presented as diagrams



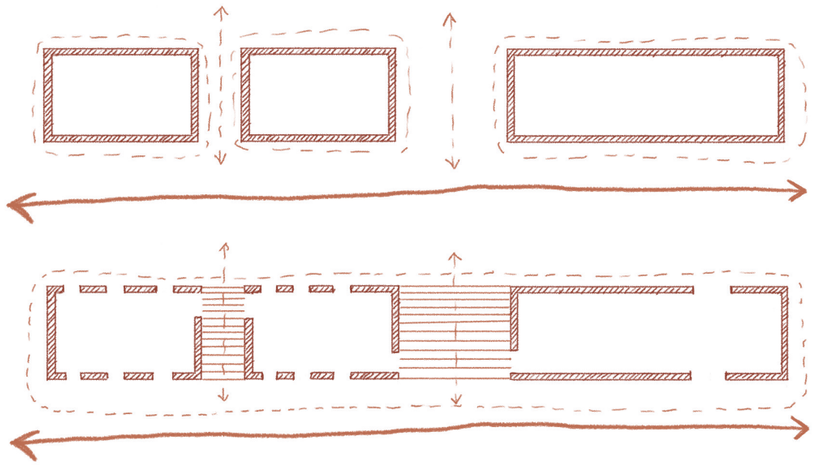
Threshold and creation of a direct relationship with the pathway and the bay.



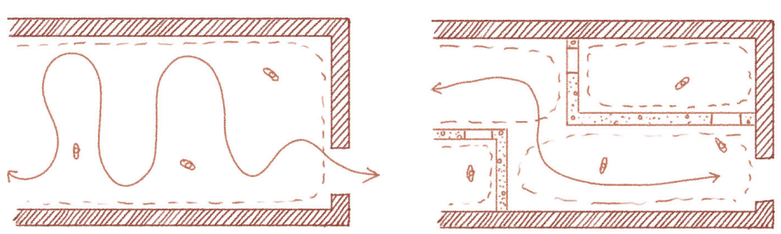
Reuse of former low walls for the site's everyday uses.



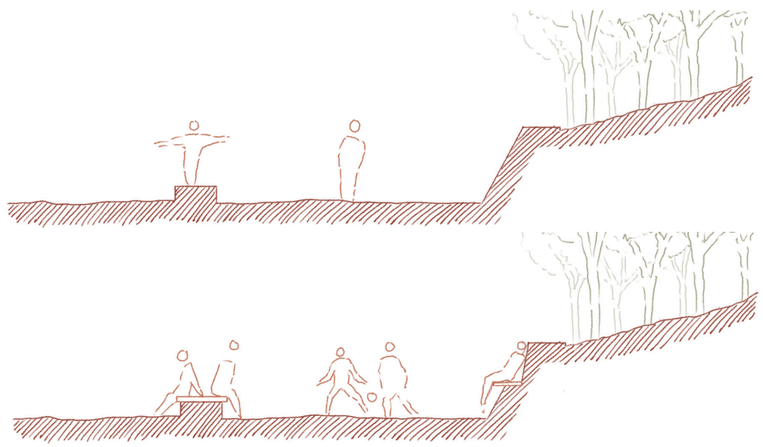
Principle of reuse of existing joinery and ventilation through pivot windows.



Connecting modules through the creation of dialogue spaces.



Principle of reuse of existing joinery and ventilation through pivot windows.



Reuse of existing low walls as seating and relaxation areas.

IV. CONCLUSION

RESPONSE TO THE RESEARCH QUESTION

This work started from a question: ***"How can the conversion of a coastal military brownfield meet the needs of the inhabitants of Pula?"***

The answer was built in three stages.

The first was to understand what actually happens on this site. Because despite its brownfield status, it is far from empty. There are fishermen working, families walking, marine carpenters tinkering, and every year the Mini Festival bikers set up there. Nobody organised any of this; it happened completely naturally and, above all, on its own.

This informal appropriation showed me that a gap exists. Residents fall back on the only spaces that nobody has yet developed or monetised, in a city where the coastline is either military, port, or tourist.

In the second stage, the work traced the causes of this situation. The historical analysis showed how, since the Austro-Hungarian militarisation of the mid-19th century, each successive regime locked down the coastline a little more. The Romans had opened the bay to commerce and public life. Then the Austro-Hungarians transformed it into a defensive apparatus. The Italians maintained the closure, and the Yugoslavs inherited it without resolving it. Finally, Croatian independence left these grounds in limbo all this time. The Vallelunga site is the direct product of this accumulation.

In the third stage, I was able to address the project. Faced with the reality of a fragmented coastline and the temptation of a spectacular conversion (like the ZIP project or the Monumenti complex), this work chose to start from what is already present.

The shared workshop formalises existing uses by building on the site's built heritage, its materials, its vegetation, and its practices. The boat workshop provides a framework for fishermen and marine carpenters. The tool library pools tools and offers open workshop spaces.

The community gardens settle into the plots delineated by the limestone walls. The terraces and roof extensions cross the former defensive walls, transforming what was a barrier into a threshold. The restored quays and the cycling network reconnect the site to the city by sea and by land.

The conversion of a coastal military brownfield can meet the needs of residents—but on the condition that what is already happening there is not erased. What this project tries to show is that you do not necessarily need to demolish everything and rebuild from scratch.

The site already has its uses, its materials, and its logic. Sometimes it is enough just to give them a framework.



Figure 175 : Perspective of the rear space of the site and the intervention on the back wall, generated with the aid of artificial

PROJECT CONTRIBUTIONS

This work offers several lessons, both practical and reflective. On the practical level, the project shows that much can be done with little.

The existing buildings do not require major works. It is mainly about uncovering what is hidden in places: removing false ceilings to reveal the roof structures, extending the openings, or extending the roofs.

The new partitions are of rammed earth, made from the site's terra rossa, and serve to reorganise interior spaces.

The new canvas and timber-structure roofs link the buildings together without overwhelming them. The materials come from the site and its surroundings: limestone, red earth, wood.

The project also proposes a functioning inspired by existing third places. La Friche la Belle de Mai in Marseille and the NDSM in Amsterdam have shown that such a place works when its management is shared between those who use it, associations, and public authorities.

At Vallelunga, the local associations (ŠK Uljanik, Zelena Istra, Udruženje Obrtnika Pula, HUIU, Metamedija) form the base on which this functioning can rely.

On the reflective level, this work taught me to look before drawing. The time spent on the site—observing what happens, listening to residents, touching the materials—nourished the project far more than any drawing exercise.

Here, doing architecture means revealing what is already there. Structures, materials, but also uses.

Uncovering a roof structure, extending a terrace beyond a wall, filling rails with gravel, planting in the terra rossa—but also giving a roof to fishermen who already repair their boats on the quay, offering a workshop to artisans who work without a space, formalising the gatherings that already happen spontaneously under the trees.

PERSPECTIVES AND LIMITATIONS

This work has limitations that should be acknowledged. The precise structural condition of the buildings was not the subject of a thorough technical assessment (due to a lack of precise documentation); I had to analyse the thicknesses and composition of the walls myself, taking advantage of certain degraded sections to observe their composition.

The asbestos removal of the fibre-cement roofing constitutes a fairly significant technical and financial prerequisite, as do recent laws prohibiting the construction of heavy buildings within 70 metres of the waterfront.

The interviews I conducted on site remain informal and do not replace a systematic large-scale sociological survey, although they were very enriching. The question of governance is outlined but would merit a dedicated development.

Beyond these limitations, this work opens broader perspectives. The Vallelunga site corresponds to Zone B of the ZIP project.

The principles developed here—starting from uses, preserving the landscape, reusing structures—could feed the ongoing reflection on the entire zone, complementing the technological and entrepreneurial approach of zones A and C.

More broadly, the Bay of Pula still has many military brownfields awaiting conversion.

The model of the shared workshop, based on the observation of local practices and the reuse of existing heritage, could apply to other sites around the bay, potentially helping to gradually reconstruct the coastal continuity that prolonged militarisation broke over a century and a half ago.

This position more broadly questions how the conversion of the coastline is approached in Pula and Istria. Many projects favour tourist valorisation, like the Monumenti Heritage Hotel, or heavy technological programmes like the ZIP.

The Vallelunga site shows that a third way is possible: a conversion that starts from local practices and considers the brownfield as a resource to activate rather than a void to fill by removing all traces of the past and its longstanding uses.

Pula was built around its bay. This project proposes one of the solutions that could begin to reopen it to those who live there.

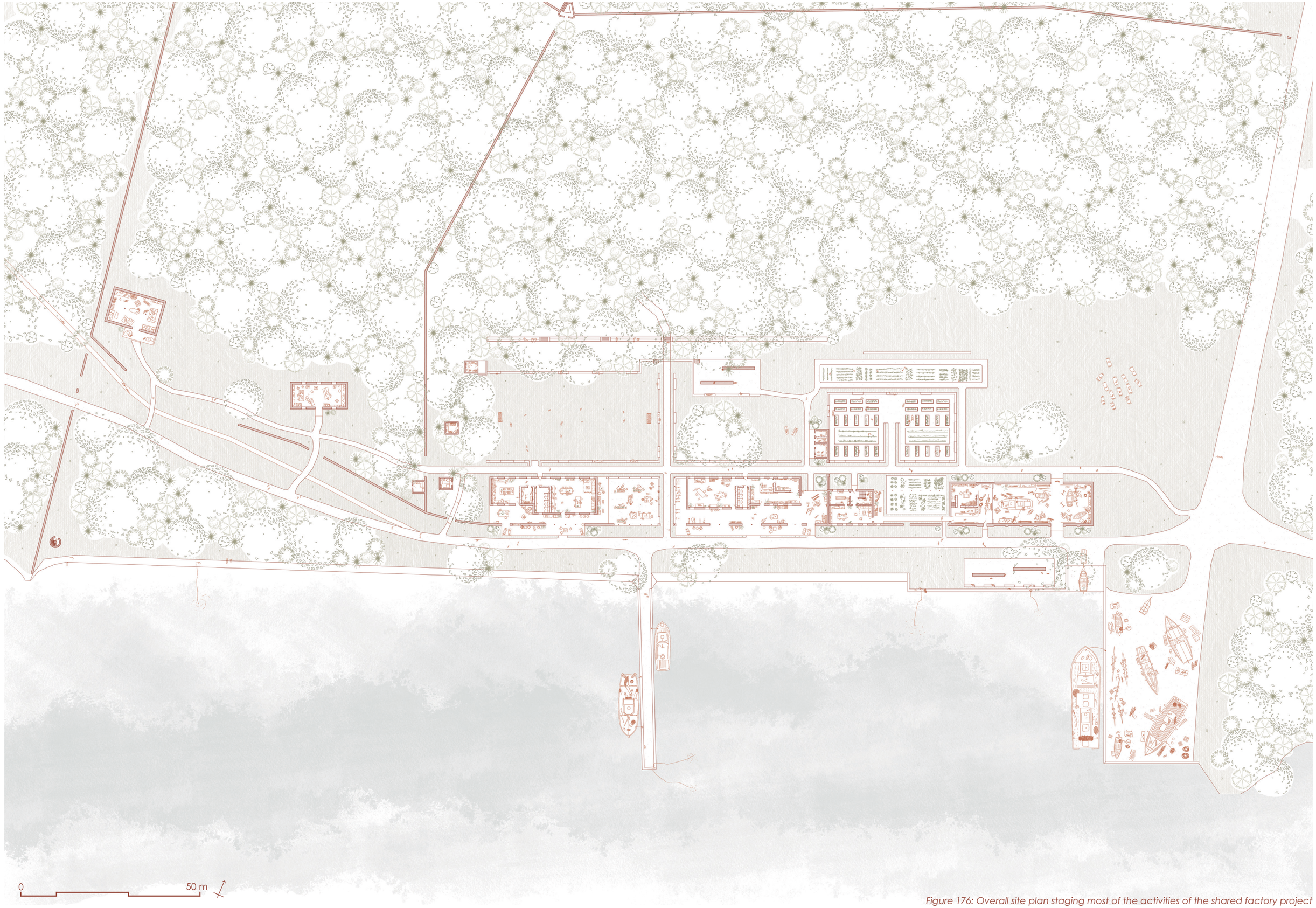


Figure 176: Overall site plan staging most of the activities of the shared factory project

Figure 177 : Photograph of the inhabited model of the boat workshop



Figure 178 : Photograph of the inhabited model of the boat workshop ; view from above



Figure 179 : Photograph of the inhabited model of the boat workshop



Figure 180 : Photograph of the inhabited model of the boat workshop ; view from above



V. APPENDICES

GRAPHIC APPENDICES

Figure 181 : Former project implantation proposal plan developed during the En & Sur l'architecture research studio; longitudinal implantation marked by a tall element at the end of the quay



Figure 182 : Former project implantation proposal plan developed during the En & Sur l'architecture research studio; implantation alternating solid and void spaces





Figure 183 : Former inhabited project plan developed during the En & Sur l'architecture research studio; spatial organisation of the tall element in the longitudinal proposal

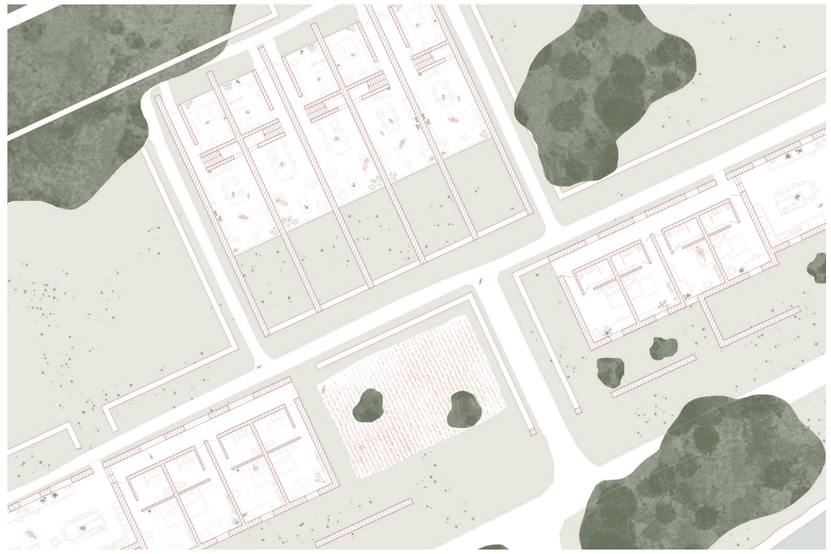


Figure 184 : Former inhabited project plan developed during the En & Sur l'architecture research studio; spatial organisation of a housing module

Figure 185 : Former project implantation proposal plan developed during the En & Sur l'architecture research studio ; longitudinal implantation preserving the entire site



Figure 186 : Former project implantation proposal plan developed during the En & Sur l'architecture research studio ; implantation proposing construction directly on the quays



Figure 187 : Former project section developed during the En & Sur l'architecture research studio; longitudinal implantation preserving the entire site

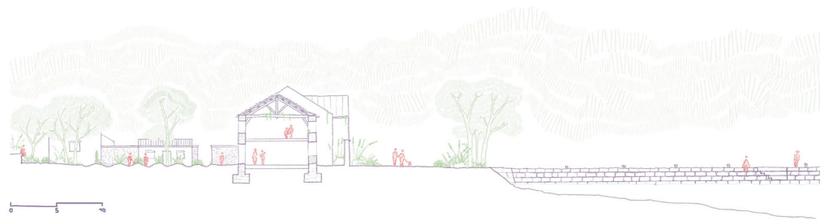


Figure 188 : Former project section developed during the En & Sur l'architecture research studio; implantation proposing construction directly on the quays



Figure 189 : Former project proposal section developed during the En & Sur l'architecture research studio; implantation at the rear of the site

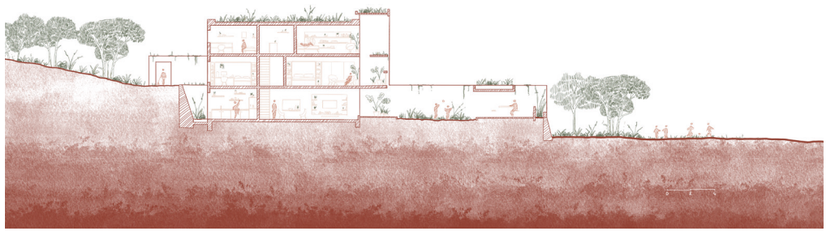


Figure 190 : Former project implantation proposal plan developed during the En & Sur l'architecture research studio; extension of the roofs and creation of multipurpose spaces with a new programme more suited to the site





Figure 191 : Sketch of a memory from one of my trips to Pula: a shared, improvised meal after a sports session bringing together all generations

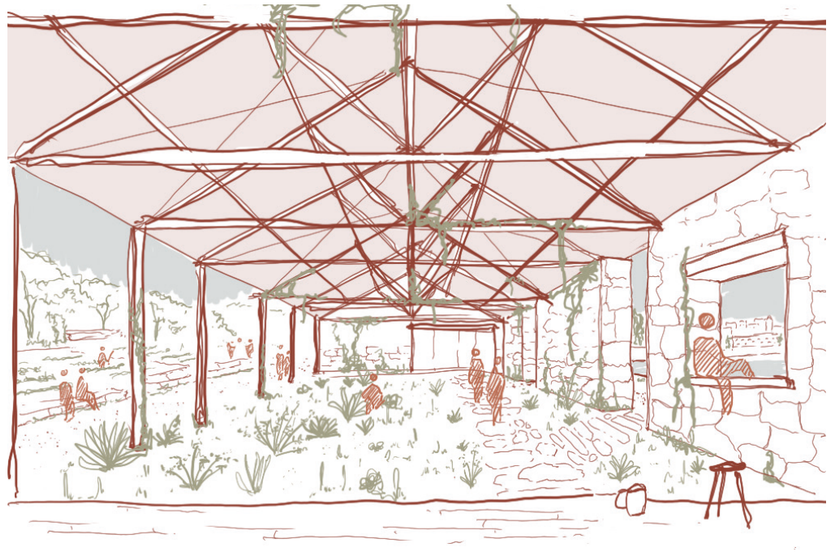


Figure 192 : Former sketch of the covered cultivation and vegetable garden space forming a transition between the fishermen's house and the boat workshop

Figure 193 : Former sketch for a housing programme and implantation; a programme far too heavy for the site

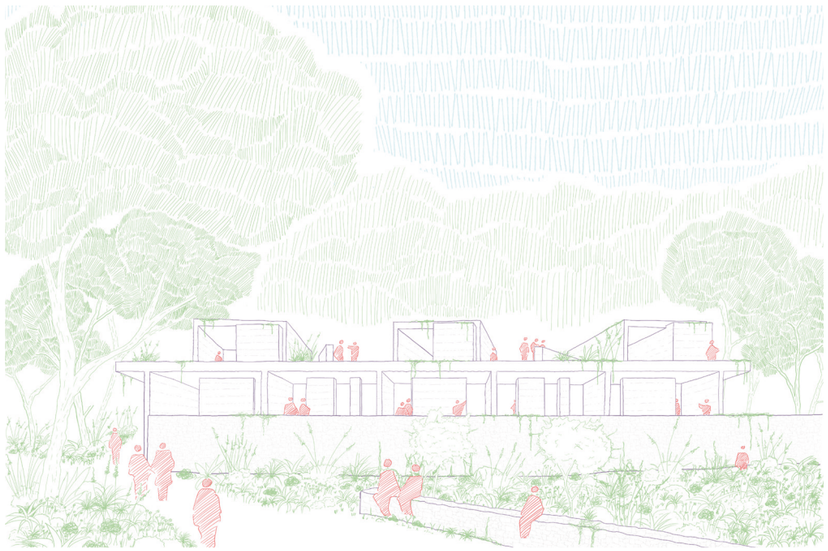


Figure 194 : Former situation plan of the different elements of the city, source: City of Pula, modified by the author

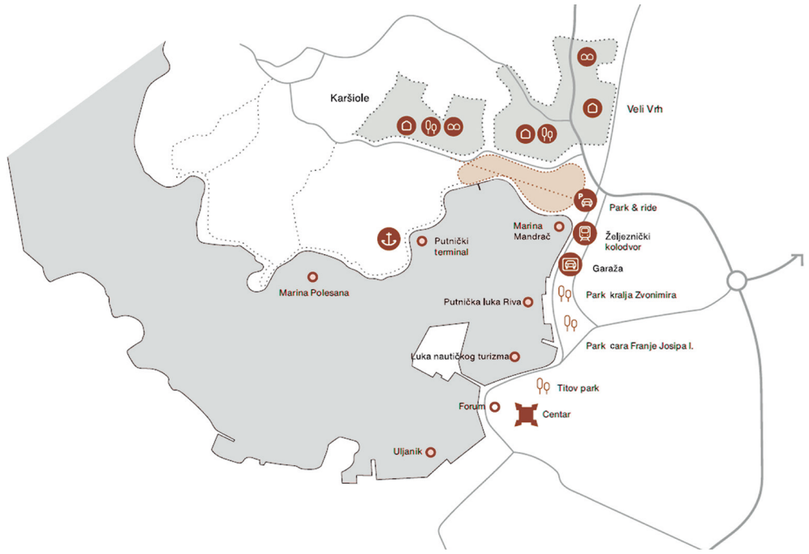


Figure 195 : Initial inhabited sections of the boat workshop

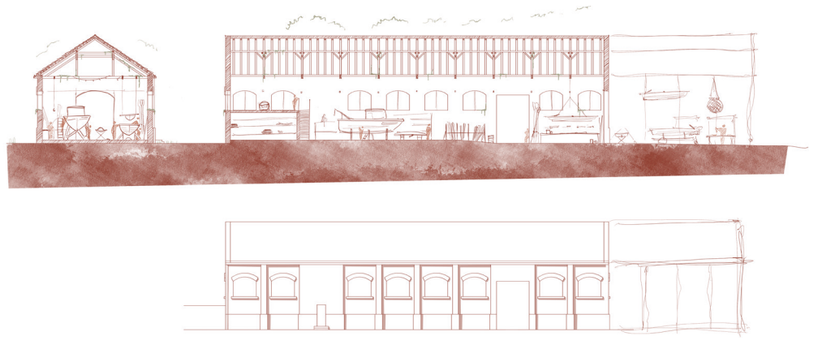
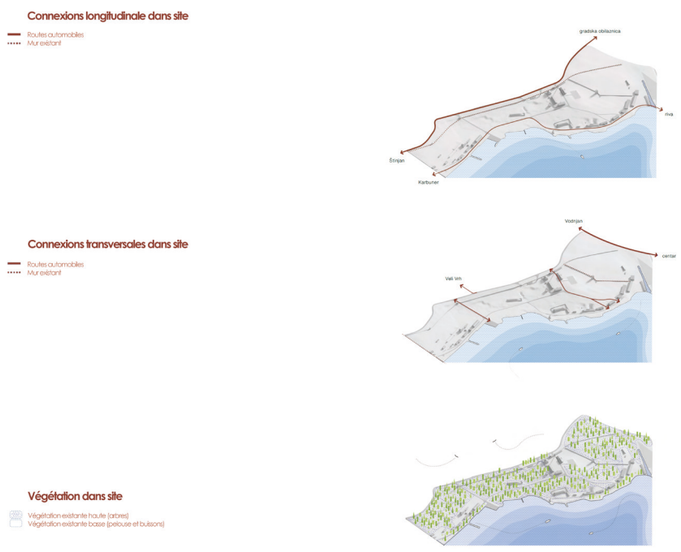


Figure 196 : Situation axonometric drawing of the Vallelunga site, source: City of Pula, modified by the author



BIBLIOGRAPHY AND ICONOGRAPHY

BOOKS :

FRAMPTON, Kenneth (2007). *Modern Architecture: A Critical History.* London : Thames & Hudson.

OLDENBURG, Ray (1989). *The Great Good Place: Cafes, Coffee Shops, Bookstores, Bars, Hair Salons and Other Hangouts at the Heart of a Community.* New York : Paragon House.

POULLAIN, Adrien (2018). *Choisir l'habitat partagé : l'aventure de Kraftwerk. Marseille* : Éditions Parenthèses.

STANEK, Łukasz (2020). *Architecture in Global Socialism*. Princeton : Princeton University Press.

CARTOGRAPHY AND ARCHIVAL DOCUMENTS :

CENTRAL INTELLIGENCE AGENCY (CIA) (n.d.). *Vojni objekti - Pula*. Document déclassifié, réf. CIA-RDP82-00457R005600390012-9, approuvé pour diffusion le 5 mars 2001. Disponible sur : https://archive.org/details/CIA-RDP82-00457R005600390012-9 (consulté en avril 2026).

ŠKORIĆ, A., MAYER, B., VRANKOVIĆ, A., BAŠIĆ, F. (n.d.). *Pedološka karta Istre / Soil Map of Istria, 1:50 000.* Financé par la Republička zajednica za znanstveni rad SR Hrvatske.

INSTITUTIONAL AND OFFICIAL SOURCES :

CEREMA (n.d.). " *Voirie et espaces publics : solutions économes - fiches pratiques* ". Disponible sur : https://www.cerema.fr/fr/actualites/voirie-espaces-publics-solutions-economes-fiches-pratiques (consulté en avril 2026).

CONSERVATOIRE DU LITTORAL (n.d.). " *Anse de Paulilles* ". Disponible sur : https://www.conservatoire-du-littoral.fr/siteLittoral/317/28-anse-de-paulilles-66_pyrenees-orientales.htm (consulté en avril 2026).

DRŽAVNI ZAVOD ZA STATISTIKU (DZS) (2022). " *Popis stanovništva 2021* ". Résultats définitifs publiés le 22 septembre 2022. Disponible sur : https://dzs.gov.hr/vijesti/objavljeni-konacni-rezultati-popisa-2021/1270 (consulté en mars 2025).

DRŽAVNI ZAVOD ZA STATISTIKU (DZS) (2023). " *Nautical Tourism - Capacity and Turnover of Ports, 2023* ". Disponible sur : https://podaci.dzs.hr/2023/en/58174 (consulté en avril 2026).

DRŽAVNI ZAVOD ZA STATISTIKU (DZS) (2024). " *Nautical Tourism - Capacity and Turnover of Ports, 2024* ". Disponible sur : https://podaci.dzs.hr/2024/en/76900 (consulté en avril 2026).

DRŽAVNI ZAVOD ZA STATISTIKU (DZS) (2024). " *Tourist Arrivals and Nights, August 2024* ". Disponible sur : https://podaci.dzs.hr/2024/en/76924 (consulté en mars 2025).

DRŽAVNI ZAVOD ZA STATISTIKU (DZS) (2024). " *Tourist Arrivals and Nights in Commercial Accommodation, 2024* ". Disponible sur : https://podaci.dzs.hr/2024/en/76896 (consulté en mars 2025).

EUROSTAT (2025). " *When do young people in the EU leave home?* ". Données 2024, publié le 23 septembre 2025. Disponible sur : https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20250923-1 (consulté en octobre 2025).

EUROPEAN COMMISSION - DG MARE (n.d.). " *Oceans and Fisheries* ". Disponible sur : https://oceans-and-fisheries.ec.europa.eu/index_en (consulté en avril 2026).

EUROPEAN COMMISSION - MARITIME FORUM (n.d.). " *Croatia - Country Fiche* ". Disponible sur : https://maritime-forum.ec.europa.eu/document/download/bdc522ce-cacc-4fb8-994a-8b6eff02059f_en (consulté en avril 2026).

GRAD PULA (n.d.). Site officiel. Disponible sur : https://www.pula.hr (consulté en mars 2025).

GRAD PULA (n.d.). " *PIC Vallelunga* ". Disponible sur : https://www.pula.hr/hr/novosti/gradski-projekti/detail/27584/pic-vallelunga/ (consulté en avril 2026).

GRAD PULA (2024). " *Potpisan ugovor za izradu idejno arhitektonsko-urbanističkog rješenja zone Vallelunga* ". Disponible sur : https://www.pula.hr/hr/novosti/detail/26997/potpisan-ugovor-za-izradu-idejno-arhitektonsko-urbanistickog-rjesenja-zone-vallelunga/ (consulté en avril 2026).

GRAD PULA - ODSJEK ZA URBANIZAM (n.d.). " *PIC Vallelunga - Idejno rješenje* ". Disponible sur : https://www.pula.hr/media/filer_public/03/9b/039b00b4-9223-4378-a838-efd6f642c9ad/pic_vallelunga_-_idejno_rjesenje_zip.pdf (consulté en octobre 2025).

GRAD PULA - ODSJEK ZA URBANIZAM (n.d.). " *Prostorni planovi (Plans d'urbanisme)* ". Disponible sur : https://www.pula.hr/hr/gradska-uprava/upravni-odjeli-i-sluzbe/upravni-odjel-za-urbanizam-graditeljstvo-i-zastitu-okolisa/odsjek-za-urbanizam/prostorni-planovi (consulté en octobre 2025).

ISTARSKA ŽUPANIJA (n.d.). " Geographic data ". Disponible sur : https://www.istra-istria.hr/en/region-of-istria/general-information/geographic-data/ (consulté en mars 2025).

ISTARSKA ŽUPANIJA / COLOURS OF ISTRIA (n.d.). " *Parenzana : The Trail of Health and Friendship* ". Disponible sur : https://coloursofistria.com/en/activities/parenzana-the-trail-of-health-and-friendship (consulté en avril 2026).

MINISTARSTVO GRADITELJSTVA I PROSTORNOGA UREĐENJA - ISPU (n.d.). " *Information System of Physical Planning* ". Disponible sur : https://ispu.mgipu.hr/#/ (consulté en octobre 2025).

OPĆINA PULA (n.d.). " *Système d'information géographique - GIS Pula* ". Disponible sur : https://www.iopcina.hr/gisapp/Default.aspx?a=pula (consulté en octobre 2025).

PERSPECTIVE.BRUSSELS (2024). " *PAD Casernes d'Ixelles - Usquare* ". Disponible sur : https://perspective.brussels/fr/projets/poles-strategiques/casernes-dixelles-usquare/pad-casernes-dixelles-usquare (consulté en mai 2025).

PULAPROMET (n.d.). " *Réseau des lignes suburbaines de transport public* ". Disponible sur : https://www.pulapromet.hr/images/uploads/files/Pulapromet-prigradske-linije.pdf (consulté en novembre 2025).

UREĐENA ZEMLJA (n.d.). " *OSS - carte cadastrale et foncière* ". Disponible sur : https://oss.uredjenazemlja.hr/map (consulté en novembre 2025).

ARCHITECTURAL AND CULTURAL PROJECTS :

3LHD ARCHITECTS (n.d.). " *Delta and Porto Baroš, Rijeka* ". Disponible sur : https://www.3lhd.com/zh/project/delta-and-porto-baros/ (consulté en mars 2025).

AGENCE SCARABÉE (n.d.). " *Dynamiterie de Paulilles* ". Disponible sur : https://agence-scarabee.com/projets/dynamiterie-de-paulilles/ (consulté en avril 2026).

ALBATROSS (n.d.). " *ZIP Innovation District Pula* ". Disponible sur : https://albatross.hr/projects/zip-innovation-district-pula/ (consulté en avril 2026).

AMACO (n.d.). " *Atelier Matières à Construire* ". Disponible sur : https://amaco.org/ (consulté en mai 2026).

ARCHDAILY (n.d.). " *Coop Housing Project at the River Spreefeld - Carpaneto Architekten / Fatkoehl Architekten / BAR Architekten* ". Disponible sur : https://www.archdaily.com/587590/coop-housing-project-at-the-river-spreefeld-carpaneto-architekten-fatkoehl-architekten-bararchitekten (consulté en décembre 2024).

ARCHDAILY (n.d.). " *Delta and Porto Baroš Area Competition* ". Disponible sur : https://www.archdaily.com/402942/delta-and-porto-baros-area-competition (consulté en mars 2025).

ARCHDAILY (n.d.). " *G-5 Houses - Summary* ". Disponible sur : https://www.archdaily.com/1034091/g-5-houses-summary (consulté en septembre 2025).

ARCHDAILY (n.d.). " *House ao Zipa - João Tiago Aguiar Arquitectos* ". Disponible sur : https://www.archdaily.com/1032185/house-aozipa-joao-tiago-aguiar-arquitectos (consulté en décembre 2024).

ARCHDAILY (n.d.). " *House at Lake Connewarre - Kerstin Thompson Architects* ". Disponible sur : https://www.archdaily.com/220248/house-at-lake-connewarre-kerstin-thompson-architects (consulté en décembre 2024).

ARCHDAILY (n.d.). " *Rehabilitation of Tobacco Factory into Leather Manufacture Tracks* ". Disponible sur : https://www.archdaily.com/102947/herrehabilitation-of-tobacco-factory-into-leather-manufacture-tracks (consulté en décembre 2024).

ARCHDAILY (2015). " *Brutopia - Stekke + Fraas Architects* ". Disponible sur : https://www.archdaily.com/641278/brutopia-stekke-fraas (consulté en octobre 2025).

ARCHDAILY (2019). " *La Borda - Lacol* ". Disponible sur : https://www.archdaily.com/922184/la-borda-lacol (consulté en avril 2025).

ARCHDAILY (2023). " *Gutshof Güldenhof Center for Art and Sustainable Living / Heim Balp Architekten* ". 2 juin 2023. Disponible sur : https://www.archdaily.com/982795/gutshof-guldenhof-center-for-art-and-sustainable-living-heim-balp-architekten (consulté en mai 2026).

ARCHAIC STUDIO (n.d.). " *Classics: Siedlung Halen - Atelier 5* ". Disponible sur : https://www.archaic-studio.com/journal/classics-siedlung-halen-atelier-5 (consulté en novembre 2025).

ARQUITECTURA VIVA (n.d.). " *Museo de Arte Contemporáneo Argo, Teheran - Deed Studio* ". Disponible sur : https://arquitecturaviva.com/works/museo-de-arte-contemporaneo-argo-teheran (consulté en décembre 2024).

ARQUITECTURA VIVA (2021). " *La Borda - Lacol Arquitectura Cooperativa* ". Disponible sur : https://arquitecturaviva.com/works/lacol-arquitectura-cooperativa-la-borda-28-en-barcelona-zs6o2-1 (consulté en mai 2025).

ARTEPLAN (n.d.). " *La Friche la Belle de Mai* ". Disponible sur : https://arteplan.org/initiative/belle-de-mai/ (consulté en avril 2026).

ATELIER 5 (n.d.). " Siedlung Halen, Herrenschwanden ". Disponible sur : https://atelier5.ch/arbeiten/1961-siedlung-halen-herrenschwanden (consulté en novembre 2025).

AUROVILLE EARTH INSTITUTE (n.d.). " *Traditional Rammed Earth* ". Disponible sur : https://dev.earth-auroville.com/traditional-rammed-earth/ (consulté en avril 2026).

BOLTSHAUSER ARCHITEKTEN (n.d.). " *Lehmhaus Rauch* ". Disponible sur : https://boltshauser.info/projekt/haus-rauch/ (consulté en avril 2026).

BOLTSHAUSER ARCHITEKTEN (n.d.). " *Rauch Residential House* ". Disponible sur : https://divisare.com/projects/310077-boltshauser-architekten-martin-rauch-beat-buhler-rauch-residential-house (consulté en mai 2026).

CAUE DU NORD (2020). " *Béguinage d'Hermies (62)* ". Disponible sur : https://www.caue-nord.com/fr/portail/41/observatoire/34162/beguinage-hermies-62.html (consulté en avril 2025).

CONSEIL DÉPARTEMENTAL DES PYRÉNÉES-ORIENTALES (n.d.). " *Atelier des Barques* ". Disponible sur : https://patrimoines.laregion.fr/acteurs-patrimoine/atelier-des-barques-conseil-departemental-des-pyrenees-orientales (consulté en avril 2026).

CRATERRE (n.d.). " *Centre international de la construction en terre* ". Disponible sur : https://craterre.org/ (consulté en mai 2026).

DABONLINE (n.d.). " *Andrea Hofer - Urbane Mischung* ". Disponible sur : https://www.dabonline.de/architektur/andreas-hofer-urbane-mischung/ (consulté en décembre 2024).

DESIGNBOOM (2021). " *Sunac Mogan Valley - GAD Line+ Studio* ". Disponible sur : https://www.designboom.com/architecture/gad-line-studio-sunac-mogan-valley-jimutian-community-deqing-city-china-04-07-2021/ (consulté en décembre 2024).

ETH ZÜRICH - GTA ARCHIV (n.d.). " *Wohnsiedlung Halen, Atelier 5* ". Disponible sur : https://www.gta.arch.ethz.ch (consulté en décembre 2025).

EU MIES AWARD (n.d.). " *Rammed Earth House Rauch* ". Disponible sur : https://eumiesawards.com/heritageobject/rammed-earth-house-rauch/ (consulté en avril 2026).

H2O ARCHITECTES (n.d.). " *La caserne d'Aubervilliers* ". Disponible sur : https://h20architectes.com/sack/caserne/h20_la_caserne/03g/ (consulté en décembre 2024).

HALEN 360 (n.d.). " *Siedlung Halen - Estate overview* ". Disponible sur : https://halen360.ch/en/estate (consulté en novembre 2025).

HEIM BALP ARCHITEKTEN (n.d.). " *Gutshof Güldenhof* ". Disponible sur : https://heimbalp.com/project/135-guldenhof/ (consulté en mai 2026).

KERSTIN THOMPSON ARCHITECTS (n.d.). " *House at Lake Connewarre* ". Disponible sur : https://kerstinthompson.com/projects/house-at-lake-connewarre (consulté en décembre 2024).

LA FRICHE LA BELLE DE MAI (n.d.). " *Histoire* ". Disponible sur : https://www.lafriche.org/la-friche/histoire/ (consulté en avril 2026).

LA FRICHE LA BELLE DE MAI (n.d.). " *Le projet* ". Disponible sur : https://www.lafriche.org/la-friche/le-projet/ (consulté en avril 2026).

LES GRANDS ATELIERS (n.d.). " *Les Grands Ateliers* ". Disponible sur : https://www.lesgrandsateliers.org/ (consulté en avril 2026).

LES PYRÉNÉES-ORIENTALES (n.d.). " *L'atelier de restauration des barques catalanes à Paulilles* ". Disponible sur : https://www.les-pyrenees-orientales.com/Patrimoine/AtelierDeRestaurationDesBarquesCatalanes.php (consulté en avril 2026).

LOLA LANDSCAPE ARCHITECTS (2021). " *NDSM Amsterdam* ". Disponible sur : https://lola.land/project/ndsm-amsterdam/ (consulté en avril 2026).

MARGOT-DUCLOT ARCHITECTES ASSOCIÉS (n.d.). " *Caserne de Reuilly, Paris* ". Disponible sur : https://www.mda.fr/projet/caserne-de-reuilly (consulté en décembre 2024).

MRENO (n.d.). " *Atelier* ". Disponible sur : https://mreno.com/atelier/ (consulté en avril 2026).

NDSM-WERF (n.d.). " *Over de NDSM-werf* ". Disponible sur : https://www.ndsm.nl/en/over (consulté en avril 2026).

PAUEM ARCHITECTS (n.d.). " *Cosylva Forestry Cooperative Headquarters* ". Disponible sur : https://divisare.com/projects/473545-pauem-architects-mary-gaudin-cosylva-forestry-cooperative-headquarters (consulté en septembre 2025).

PNG ARCHITECTES (n.d.). " *50 logements, Grenoble* ". Disponible sur : https://png.archi/processus/50-logements-grenoble (consulté en mai 2026).

PORTO VIVO TRIESTE (n.d.). " *Porto Vivo* ". Disponible sur : https://www.portovivotrieste.it/porto-vivo-en/ (consulté en mars 2025).

REIULF RAMSTAD ARKITEKTER & ASP ARCHITECTURE (n.d.). " *Breitenbach Landscape Hotel 48° Nord* ". Disponible sur : https://divisare.com/projects/436132-reiulf-ramstad-arkitekter-asp-architecture-11h45-yvan-moreau-breitenbach-landscape-hotel-48-nord (consulté en septembre 2025).

ROTOR (n.d.). " *Base de données Rotor* ". Disponible sur : https://rotordb.org/en (consulté en mai 2025).

ROTOR (n.d.). " *Zinneke, Bruxelles* ". Disponible sur : https://rotordb.org/fr/projects/feder-zinneke-ma-sieuvre-fr (consulté en décembre 2024).

SERGISON BATES ARCHITECTS (n.d.). " *Provincial Government Ghent* ". Disponible sur : https://sergisonbates.com/nl/projects/provincial-government-ghent (consulté en décembre 2024).

TOPOPHILE (2023). " *La Ferme du Rail ou la bienveillance réciproque* ". Disponible sur : https://topophile.net/faire/la-ferme-du-rail-ou-la-bienveillance-reciproque/ (consulté en avril 2025).

VILLE DE PARIS (2022). " *Caserne de Reuilly - 12e* ". Disponible sur : https://www.paris.fr/pages/caserne-reuilly-12eme-2818 (consulté en avril 2025).

WORLD ARCHITECTS (n.d.). " *Duplex Architecture, Zurich - Mehr als Wohnen* ". Disponible sur : https://world-architects.com/fr/duplex-architekten-zurich/project/mehr-als-wohnen (consulté en décembre 2024).

WORLD HABITAT (2017). " *Prix mondial de l'habitat : La Borda* ". Disponible sur : https://world-habitat.org/fr/les-prix-mondiaux-de-lhabitat/vainqueurs-et-finalistes/la-borda/ (consulté en décembre 2024).

ZAGREB SALON OF ARCHITECTURE (n.d.). " *ZIP Innovation District Pula* ". Disponible sur : https://zg-salon.uha.hr/59/en/?id=905 (consulté en avril 2026).

TOURIST AND HERITAGE SITES :

ARENA PULA (n.d.). " *Arène de Pula* ". Disponible sur : https://arenapula.hr (consulté en décembre 2024).

BORDEAUX TOURISME (n.d.). " *Darwin Écosystème* ". Disponible sur : https://www.bordeaux-tourisme.com/sites-monuments/darwin-ecosysteme (consulté en mars 2025).

GENERALI CONVENTION CENTER TRIESTE (n.d.). " *Construction work has begun on the monumental avenue of Porto Vecchio of Trieste* ". Disponible sur : https://www.generaliconventioncenter.it/en/construction-work-has-begun-on-the-monumental-avenue-of-porto-vecchio-of-trieste-ongoing-redevelopment-to-transform-the-historic-area/ (consulté en mars 2025).

GUINGUETTES BARC (n.d.). " *Guinguettes Barc – Chill Out Guinguettes Bruxelles* ". Disponible sur : https://guinguettesbarc.be/ (consulté en mai 2026).

GSIDA2 / FLICKR (n.d.). " *k.u.k. Kriegshafen Pola, 1916* ". Disponible sur : https://www.flickr.com/photos/161477525@N05/45770824415 (consulté en mai 2026).

HIGH LINE (n.d.). " *About the High Line* ". Disponible sur : https://thehighline.org (consulté en décembre 2024).

HOTEL MONUMENTI (n.d.). " *History* ". Disponible sur : https://hotelmonumenti.com/history (consulté en mars 2025).

HUB-IN ATLAS (n.d.). " *NDSM-Werf* ". Disponible sur : https://atlas.hubin-project.eu/case/ndsm-werf/ (consulté en avril 2026).

I AMSTERDAM (n.d.). " *NDSM then and now* ". Disponible sur : https://www.iamsterdam.com/en/explore/neighbourhoods/ndsm/then-and-now (consulté en avril 2026).

KOMOOT (n.d.). " *Itinéraires et pistes cyclables autour de Pula* ". Disponible sur : https://www.komoot.com/fr-fr/guide/2646177/itineraires-et-pistes-cyclables-autour-de-pula (consulté en octobre 2025).

MARINA 21 GROUP (n.d.). " *Updates on Heritage Hotel & Resort Monumenti* ". Disponible sur : https://marina21.com/en/updates-on-heritage-hotel-resort-monumenti/ (consulté en mars 2025).

MUSÉE ARCHÉOLOGIQUE D'ISTRIE (n.d.). " *AMI Pula* ". Disponible sur : https://ami-pula.hr (consulté en décembre 2024).

POVIJESNI I POMORSKI MUZEJ ISTRE (n.d.). *"Pula Fort Center"*. Disponible sur : https://pulafortcenter.com/ (consulté en mars 2025).

PULA CROATIA TRAVEL GUIDE (n.d.). " *Pula Castle Kaštel* ". Disponible sur : https://www.pulacroatia.net/item/pula-castle-kastel/ (consulté en mars 2025).

SPECTACULA ANTIQUA (n.d.). " *Arena Pula* ". Disponible sur : https://www.spectaculaantiqua.com/arena-en/ (consulté en mars 2025).

TOURIST OFFICE PULA / PULAINFO.HR (n.d.). " *Fortifications de Pula* ". Disponible sur : https://www.pulainfo.hr/where/pulske-utvrde-impresivne-znamenitosti-cekaju-da-ih-otkrijete/ (consulté en mars 2025).

TOURIST OFFICE PULA / PULAINFO.HR (n.d.). " *Tramway électrique et Gare de chemin de fer* ". Disponible sur : https://pulainfo.hr/where/electric-tram-and-railway-station/ (consulté en octobre 2024).

VILLE DE RIJEKA (n.d.). " *Delta Rijeka Waterfront* ". Disponible sur : https://www.rijeka.hr/en/city-government/city-projects/ongoing-projects-2/city-planning/delta-rijeka-waterfront/ (consulté en mars 2025).

VISIT PULA (n.d.). " *Fortress Kaštel* ". Disponible sur : https://www.visitpula.hr/see-do/fortress-kastel-castello/ (consulté en mars 2025).

PRESS AND MEDIA :

CLIMATS ET VOYAGES (n.d.). " *Climat en Croatie* ". Disponible sur : https://www.climatsetvoyages.com/climat/croatie (consulté en janvier 2025).

CROATIA WEEK (2025). " *New luxury heritage & resort hotel Monumenti opens in Istria* ". 4 octobre 2025. Disponible sur : https://www.croatiaweek.com/new-luxury-heritage-resort-hotel-monumenti-opens-in-istria/ (consulté en octobre 2025).²

CROINFO (n.d.). " *Forum – Pula* ". Disponible sur : https://croinfo.net/forum051novi/index.php?topic=1964.45 (consulté en mai 2026).

ESPAZIUM (n.d.). " *Message heureux des quartiers Nord de Bruxelles* ". Disponible sur : https://www.espazium.ch/fr/actualites/message-heureux-des-quartiers-nord-bruxellois (consulté en décembre 2024).

EXPAT IN CROATIA (n.d.). " *Culture of gardening in Croatia* ". Disponible sur : https://www.expatincroatia.com/gardening/ (consulté en mai 2026).

GLAS ISTRE (n.d.). " *Pula kao ratna luka mora na UNESCO-ovu listu* ". Disponible sur : https://glasistrenovine.hr/arhiva-portala/pregled-vijesti/pula-kao-ratna-luka-mora-na-unesco-ovu-listu-423311 (consulté en mars 2025).

GLAS ISTRE (2022). " *Emil Jurcan, pulski arhitekt i urbanist* ". Disponible sur : https://www.glasistre.hr/pula/2022/12/11/emil-jurcan-pulski-arhitekt-i-urbanist-dandanas-parazitiramo-na-infrastrukturnom-skoku-iz-60-ih-834794 (consulté en avril 2026).

GLAS ISTRE (2024). " *Prva faza, izgradnja Pulskog inovacijskog centra, kreće dogodine* ". 13 décembre 2024.

GOLFE CLAIR (2022). " *L'atelier des barques à Paulilles, la passion du patrimoine dans un lieu emblématique* ". Disponible sur : https://golfesclairs.wordpress.com/2022/08/08/latelier-des-barques-a-paulilles-la-passion-du-patrimoine-dans-un-lieu-emblematique/ (consulté en avril 2026).

HRCAK (n.d.). " *Artisanat en Croatie* ". Disponible sur : https://hrcak.srce.hr/file/486642 (consulté en avril 2026).

IL PICCOLO (n.d.). " *Porto Vecchio di Trieste - ok al cantiere per il viale monumentale* ". Disponible sur : https://www.ilpiccolo.it/cronaca/porto-vecchio-di-trieste-ok-al-cantiere-per-il-viale-monumentale-nrd66fdi (consulté en mars 2025).

JUTARNJI LIST (2024). " *Pulska Vallelunga - Vojna zona postat će Blue TEC centar* ". Décembre 2024. Disponible sur : https://www.jutarnji.hr/kultura/art/prvi-otkrivamo-detalje-futuristickog-projekta-za-pulu-grad-ce-se-napokon-pribliziti-moru-a-roboti-raditi-zajedno-s-ljudima-15532181 (consulté en avril 2026).

NEKRETNINE.HR (n.d.). " *Prix de l'immobilier - Istarska / Pula* ". Disponible sur : https://www.nekretnine.hr/fr/cijene-nekretnina/istarska/pula/ (consulté en avril 2026).

OUEST-FRANCE (n.d.). " *Au chantier-musée de l'atelier des barques de Paulilles* ". Disponible sur : https://www.ouest-france.fr/mer/au-chantier-musee-de-latelier-des-barques-de-paulilles-c7be3cd5-e046-433d-bcf2-7388d980f554 (consulté en avril 2026).

POVIJEST.HR (n.d.). " *Pula kao spomenik austro-ugarske* ". Disponible sur : https://povijest.hr/drustvo/gradjevine/pula-kao-spomenik-austro-ugarske/ (consulté en mars 2025).

PRAKSA.HR (n.d.). " *Map Story* ". Disponible sur : https://praksa.hr/map-story/ (consulté en mars 2025).

REVUE SILENCE (n.d.). " *Kraftwerk - une utopie réalisée : Coopératives d'habitants et pratiques solidaires* ". Disponible sur : https://www.revuesilence.net/numeros/489-Kraftwerk-une-utopie-realisee/kraftwerk-1-cooperative-d-habitant-es-et-pratiques-solidaires (consulté en décembre 2025).

ROADS TO THE GREAT WAR (2025). " *The Pola Naval Base of Austria-Hungary* ". Disponible sur : https://roadstothegreatwar-ww1.blogspot.com/2025/01/the-pola-naval-base-of-austria-hungary.html (consulté en mai 2026).

THE DUBROVNIK TIMES (2025). " *New apartment prices in Croatia jump 16% in first half of 2025* ". Disponible sur : https://www.thedubrovniktimes.com/news/croatia/item/18644-new-apartment-prices-in-croatia-jump-16-in-first-half-of-2025 (consulté en avril 2026).

TOTAL CROATIA NEWS (2024). " *Pula Tourism Growth Encouraging, With Increases Compared to 2023* ". 13 août 2024. Disponible sur : https://total-croatia-news.com/destinations/destinations-hvar/blog-hvar/tourism/pula-tourism-growth/ (consulté en mars 2025).

WERK, BAUEN + WOHNEN (n.d.). " *Articles historiques sur la Siedlung Halen et l'Atelier 5* ". Disponible sur : https://www.wbw.ch (consulté en décembre 2025).

WORLD HISTORY ENCYCLOPEDIA (2021). " *Exploring Classical Pula, Croatia* ". Disponible sur : https://www.worldhistory.org/article/1787/exploring-classical-pula-croatia/ (consulté en mars 2025).

ENCYCLOPAEDIAS :

WIKIPEDIA (n.d.). " *Istrian-Dalmatian exodus* ". Disponible sur : https://en.wikipedia.org/wiki/Istrian%E2%80%93Dalmatian_exodus (consulté en mars 2025).

WIKIPEDIA (n.d.). " *Pula* ". Disponible sur : https://en.wikipedia.org/wiki/Pula (consulté en mars 2025).

JOURNALS AND ACADEMIC PUBLICATIONS :

ÉDITIONS PARENTHÈSES (n.d.). " *Habitat partagé - extraits* ". Disponible sur : https://editionsparentheses.com/IMG/pdf/p325_habitat_partage_extraits.pdf (consulté en mars 2025).

SCRIBD (n.d.). " *Atelier 5 - Siedlung Halen (documents et plans)* ". Disponible sur : https://www.scribd.com/document/57701888/atelier5-siedlung-halen (consulté en décembre 2025).

WIENERBERGER (n.d.). " *Tondach Kanalica Adriatic - fiche technique* ". Disponible sur : https://www.wienerberger.hr/content/dam/wienerberger/croatia/marketing/documents-magazines/technical/tehnicki-listovi/tondach/HR_MKT_TEC_ROF_TON_Kanalica_Adriatic_Tehnicki_list.pdf (consulté en mai 2026).

INTERVIEWS:

BREKALO, Filip (2025). Entretien personnel réalisé à Pula, Croatie, le 26 octobre 2025.

HREBAK, Marko (2025). Entretien personnel réalisé à Pula, Croatie, le 29 octobre 2025.

KRTINIĆ, Ivana (2024). Échange par mail avec l'auteur, responsable de projet, Pula, Croatie.

PAUKOVIĆ, Marko (2025). Entretien personnel réalisé à Pula, Croatie, le 27 octobre 2025.

ICONOGRAPHY

Unless otherwise stated, all graphic documents were produced by the author.

Figure 6 : Lignes topographiques superposées à la vue satellite du territoire de Pula. Source : Google Earth, modifiée par l'auteur.

Figure 41 : Vue du littoral de Pula. Source : Google Street View, retravaillée par l'auteur.

Figure 58 : Vue satellite montrant l'emprise de la couverture végétale du site. Source : Apple Maps, modifiée par l'auteur.

Figure 68 : Photographie du Monumenti Hotel. Source : Marina 21 Group (n.d.). Disponible sur : *https://marina21.com/en/heritage-hotel-resort-monumenti/* (consulté en mars 2025).

Figure 69-70 : Vue satellite du site du projet avant interventions. Source : Apple Maps.

Figure 71 : Ancien plan de voirie du centre-ville de Pula. Source : Mirabella Roberti (n.d.), via Praksa. Disponible sur : *https://praksa.hr/map-story/* (consulté en mars 2025).

Figure 72 : Système de grille de la colonie de Pula. Source : Suić (n.d.), via Praksa. Disponible sur : *https://praksa.hr/map-story/* (consulté en mars 2025).

Figure 79 : Types de systèmes routiers dans l'extension urbaine autrichienne. Source : Jurcan (n.d.), via Praksa, modifiée par l'auteur. Disponible sur : *https://praksa.hr/map-story/* (consulté en mars 2025).

Figure 80 : Extension de la ville durant la période austro-hongroise. Source : Praksa (n.d.), modifiée par l'auteur. Disponible sur : *https://praksa.hr/map-story/* (consulté en mars 2025).

Figure 81 : Flotte austro-hongroise dans le port de Pula. Source : Roads to the Great War (2025). Disponible sur : *https://roadstothegreatwar-ww1.blogspot.com/2025/01/the-pola-naval-base-of-austria-hungary.html* (consulté en février 2026).

Figure 82 : Ancienne vue aérienne du port de Pula, vers 1900. Source : Croinfo (n.d.). Disponible sur : *https://croinfo.net/forum051novi/index.php?topic=1964.45* (consulté en mai 2026).

Figure 83 : Carte du port militaire austro-hongrois de Pola/Pula en 1916. Source : Gsida2 / Flickr (2019). Disponible sur : *https://www.flickr.com/photos/161477525@N05/45770824415* (consulté en mai 2026).

Figure 84 : Extension de Pula vers le sud d'après le plan directeur de 1964. Source : Jurcan (n.d.), via Praksa, modifiée par l'auteur. Disponible sur : *https://praksa.hr/map-story/* (consulté en mars 2025).

Figure 85 : Carte des installations militaires de Pula. Source : Central Intelligence Agency (n.d.), document déclassifié le 5 mars 2001, modifiée par l'auteur. Disponible sur : *https://archive.org/details/CIA-RDP82-00457R005600390012-9* (consulté en avril 2026).

Figure 93 : Interventions du ZIP sur le site nord du littoral. Source : Ville de Pula (n.d.), modifiée par l'auteur. Disponible sur : *https://www.pula.hr/media/filer_public/03/9b/039b00b4-9223-4378-a838-efd6f642c9ad/pic_vallelunga_-_idejno_rjesenje_zip.pdf* (consulté en octobre 2025).

Figure 95 : Vue aérienne de la proposition de projet du ZIP. Source : Albatross (n.d.), modifiée par l'auteur. Disponible sur : *https://albatross.hr/projects/zip-innovation-district-pula/* (consulté en avril 2026).

Figure 96 : Modélisation du projet zone B (quai prolongé) sur le littoral nord. Source : Albatross (n.d.), modifiée par l'auteur. Disponible sur : *https://albatross.hr/projects/zip-innovation-district-pula/* (consulté en avril 2026).

Figure 97 : Modélisation du projet ZIP sur le littoral nord, vue depuis l'eau. Source : Albatross (n.d.), modifiée par l'auteur. Disponible sur : *https://albatross.hr/projects/zip-innovation-district-pula/* (consulté en avril 2026).

Figure 101 : Photographie de la toiture-terrasse de la Friche la Belle de Mai. Source : Caroline Dutrey / Arteplan (n.d.), modifiée par l'auteur. Disponible sur : *https://arteplan.org/initiative/belle-de-mai/* (consulté en avril 2026).

Figure 102 : Jardin des Rails de la Friche la Belle de Mai. Source : Sébastien Normand / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/le-projet/* (consulté en avril 2026).

Figure 103 : Espace extérieur de la NDSM-Werf à Amsterdam. Source : NDSM (n.d.), modifiée par l'auteur. Disponible sur : *https://www.ndsm.nl/en* (consulté en avril 2026).

Figure 104 : Axonométrie du site NDSM. Source : LOLA Landscape Architects (2021), modifiée par l'auteur. Disponible sur : *https://lola.land/project/ndsm-amsterdam/* (consulté en avril 2026).

Figure 105 : Plan du site NDSM. Source : LOLA Landscape Architects (2021), modifiée par l'auteur. Disponible sur : *https://lola.land/project/ndsm-amsterdam/* (consulté en avril 2026).

Figure 106 : Schéma des " qualités spatiales à préserver " du NDSM. Source : LOLA Landscape Architects (2021), modifiée par l'auteur. Disponible sur : *https://lola.land/project/ndsm-amsterdam/* (consulté en avril 2026).

Figure 107 : Dessin axonométrique de la Friche la Belle de Mai. Source : E. Benti / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/lieux/* (consulté en avril 2026).

Figure 108 : Photographie de la Cartonnerie de la Friche la Belle de Mai. Source : Clémentine Crochet / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/lieux/* (consulté en avril 2026).

Figure 109 : Photographie de la Place des Quais. Source : Caroline Dutrey / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/lieux/* (consulté en avril 2026).

Figure 110 : Photographie de l'atelier de sérigraphie. Source : Caroline Dutrey / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/lieux/* (consulté en avril 2026).

Figure 111 : Photographie de la Place des Quais. Source : Caroline Dutrey / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/lieux/* (consulté en avril 2026).

Figure 112 : Photographie du Champ de Mai. Source : Stéphane Aboudaram / La Friche (n.d.), modifiée par l'auteur. Disponible sur : *https://www.lafriche.org/la-friche/lieux/* (consulté en avril 2026).

Figure 120 : Carte pédologique de l'Istrie. Source : Škorić, A., Mayer, B., Vranković, A., Bašić, F. (n.d.), Pedološka karta Istre / Soil Map of Istria, 1:50 000.

Figure 123 : Façade en pisé de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 124 : Coupe axonométrique détaillée de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 125 : Coupe longitudinale de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 126 : Plan R+2 de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 127 : Plan R+1 de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 128 : Plan RDC de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 129 : Coupe longitudinale de la Haus Rauch. Source : Boltshauser Architekten / Divisare (n.d.), modifiée par l'auteur. Disponible sur : *https://divisare.com/projects/310077-boltshauser-architekten-martin-rauch-beat-buhler-rauch-residential-house* (consulté en mai 2026).

Figure 130 : Photographie intérieure de la Haus Rauch. Source : Albrecht Schnabel / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 131 : Photographie intérieure (cage d'escalier) de la Haus Rauch. Source : Beat Bühler / Boltshauser Architekten (n.d.), modifiée par l'auteur. Disponible sur : *https://boltshauser.info/projekt/haus-rauch/* (consulté en avril 2026).

Figure 143 : Photographie de l'Atelier des Barques depuis la mer. Source : Hervé Grauby / Golfe Clair (2022), modifiée par l'auteur. Disponible sur : *https://golfesclairs.wordpress.com/2022/08/08/latelier-des-barques-a-paulilles-la-passion-du-patrimoine-dans-un-lieu-emblematique/* (consulté en avril 2026).

Figure 144 : Photographie intérieure de l'Atelier des Barques. Source : Hervé Grauby / Golfe Clair (2022), modifiée par l'auteur. Disponible sur : *https://golfesclairs.wordpress.com/2022/08/08/* latelier-des-barques-a-paulilles-la-passion-du-patrimoine-dans-un-lieu-emblematique/ (consulté en avril 2026).

Figure 194 : Ancien plan situation des différents éléments de la ville. Source : Ville de Pula (n.d.), modifiée par l'auteur. Disponible sur : *https://www.pula.hr/media/filer_public/03/9b/039b00b4-9223-4378-a838-efd6f642c9ad/pic_vallelunga_-_idejno_rjesenje_zip.pdf* (consulté en octobre 2025).

Figure 196 : Axonométrie de situation du site de vallelunga. Source : Ville de Pula (n.d.), modifiée par l'auteur. Disponible sur : *https://www.pula.hr/media/filer_public/03/9b/039b00b4-9223-4378-a838-efd6f642c9ad/pic_vallelunga_-_idejno_rjesenje_zip.pdf* (consulté en octobre 2025).

Artificial intelligence was used in this work as an aid for formatting certain texts, spell-checking, and creating graphic bases for certain documents, which were subsequently reworked and adapted by the author.

FROM MILITARY SITE TO LIVING PLACE

REHABILITATING THE COASTLINE OF PULA

LARCT2282 - Master's thesis: In & On Architecture

KESTELOOT Bastien

Université Catholique de Louvain - LOCI Tournai campus
Faculty of Architecture, Architectural Engineering, and Urban Planning
Academic Year 2025–2026



This final thesis focuses on the conversion of a coastal military brownfield in Pula, Croatia, on the site of Vallelunga.
This project was born from a personal journey, the first I took alone, where I discovered a city, a culture, and a site that profoundly marked me.

Pula, the seventh-largest city in the country, was built around its bay, used since Roman Antiquity. But over a century and a half of militarisation, from the Austro-Hungarian Empire to Yugoslavia, progressively closed the coastline to its inhabitants.
Today, the coast is fragmented between disused military grounds, port zones, and tourist enclaves.

The site of Vallelunga, although officially abandoned, is one of the rare coastal spaces still accessible to residents. There you find fishermen, walkers, families, artisans, and cyclists who gather there daily.
This spontaneous appropriation reveals a lack of public spaces by the sea.

Faced with the institutional projects planned for the zone, this work proposes a complementary approach: starting from existing uses rather than replacing them.

The project, a "shared workshop", rehabilitates the existing buildings with simple means (rammed earth from local terra rossa, light canvas and timber roofs) and formalises the practices already in place: boat workshop, fishermen's house, tool library, craft workshops, community gardens, multipurpose spaces, and open-air bar.
At the territorial scale, the restoration of quays, a water bus, and a greenway on the former railway lines reconnect the site to the city.

The project shows that an ambitious conversion of the coastline is possible without wiping the slate clean of what gives the place its value for those who use it daily.

Université Catholique de Louvain - LOCI Tournai campus
Faculty of Architecture, Architectural Engineering, and Urban Planning
Academic Year 2025–2026

LOCI Bruxelles Louvain-la-Neuve Tournai
faculté d'architecture d'ingénierie architecturale d'urbanisme
UCLouvain