POLITECNICO DI TORINO

Department of Architecture and Design (DAD)

Master's Thesis

Polignano a Mare as Layer :
Memory, Dwelling, and Infrastructure

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Content

Abstract

This thesis investigates how contemporary urban conditions in Polignano a Mare, including weakened memory, changing forms of dwelling, and fragmentation caused by infrastructural boundaries, can be reinterpreted through the conceptual framework of “City as Layer”. Starting from the three dimensions of memory, dwelling, and infrastructure, the research translates these into spatial layers that reveal how different temporal, cultural, and material structures interact within the city.

Polignano a Mare serves as the primary case study due to its dense historic center, expanding modern fabric, and infrastructural thresholds that strongly shape everyday urban experience. Through historical reconstruction, territorial mapping, and a five-day experiential diary, the thesis develops a multilayered reading of the city’s spatial logic and internal tensions.

Building on this analysis, six value propositions are formulated as evaluation criteria for design: historical connection, urban community vitality, mobility network and access points, open space distribution, parking distribution, and noise impact. These criteria guide the construction and assessment of multiple design scenarios, which lead to a final proposal that responds to the city’s layered structure and its unresolved spatial conditions.

The thesis demonstrates that “City as Layer” functions as both an analytical lens and a design method, offering a transferable approach for reconnecting infrastructural landscapes while strengthening memory and supporting renewed forms of dwelling.

Introduction

Contemporary cities are shaped by the interplay between memory, dwelling, and infrastructure. In many cities, these three conditions reveal increasing tensions: memory weakens as historical environments lose continuity, dwelling becomes fragmented through changing living patterns, and infrastructural systems impose strong physical and perceptual boundaries. This thesis adopts these dimensions as the starting point for examining how urban conditions can be interpreted and transformed.

By translating the three dimensions into spatial layers, the research employs “City as Layer” as both an analytical lens and a design method. This perspective highlights how different temporal, cultural, and material structures coexist, overlap, and sometimes conflict within the urban fabric. It also provides a way to understand how latent historical structures interact with contemporary systems and how these relations can generate new forms of spatial continuity.

Polignano a Mare serves as the case study because it embodies these layered conditions in a compact yet complex form: a dense medieval center situated on a cliff, a modern grid-based expansion, and a railway line that divides the city into distinct northern and southern terrains. Through historical reconstruction, territorial mapping, and a five-day experiential diary, the thesis constructs a multilayered reading of the city's spatial and social logic.

Based on this analysis, six value propositions are developed as evaluation criteria for design: historical connection, urban community

vitality, mobility network and access points, open space distribution, parking distribution, and noise impact. Rather than seeking to maximize each proposition individually, the design aims to find a balanced spatial framework in which the six criteria can coexist and support one another.

The project focuses on the two large areas flanking the railway near the station. Although the northern site is currently used as an informal parking lot, it remains dusty, unshaded, and functionally poor, while the southern site has been abandoned for decades.The proposal reclaims these terrains with a sequence of public squares, green parks, and connective paths that bridge the infrastructural barrier, while also addressing pragmatic needs such as reorganized parking and improved access. On the southern side, a new residential-led mixed-use complex introduces a layered architectural and landscape system capable of simultaneously responding to different urban strata. These layers intersect and intertwine, generating a complex environment that mirrors the richness of the real city.

Through this layered strategy, the two long-neglected terrains are reintegrated into the urban system, becoming an active part of contemporary Polignano a Mare and forming a new kind of “historic center” shaped by present-day conditions.

Ultimately, the thesis demonstrates how “City as Layer” operates as a dual methodology: a way of reading the city and a strategic framework for shaping its future.

It has no history and no name and is constantly changing. Nothing lasts in the multimedia town. It reflects a boundless faith in a future of constant change, faceless and featureless.

—— *The Dialectic City*, Oswald Mathias Ungers

City As Layer

The City's Threefold Predicaments

In *The Dialectic City* [1], Oswald Mathias Ungers [2] repeatedly describes the modern metropolis as a "multimedia town" [3]. Here "media" does not refer narrowly to television or the internet; it is a metaphor for the vast assemblage of images and symbols that are incessantly reproduced, circulated, and consumed. The twentieth-century city has become the stage for this assemblage—saturated by advertising, news, cinema, and social-media platforms—ultimately turning into a multimedia town.

A *multimedia town* is, by definition, a world of appearances. As Guy Debord [4] argues in *The Society of the Spectacle* [5], "Everything that was directly lived has receded into a representation." [6] Urban space shifts from a locus of living to a theater of images; genuine social relations and lived experience are veiled by pictures, diagrams, and dense symbolic systems. For Debord, the "spectacle" is not an optional ornament but the core product of capitalist production. It compels people to apprehend the world through the consumption of signs rather than through embodied experience. The city becomes a "performance", it is perceived through superficial media rather than deeply inhabited. Appearance has come to rule.

Memory is being lost. During the transition from the traditional city to the *multimedia town*, the rise of global tourism and the expansion of capital-driven consumerism continually translate local distinctiveness into commodities to be exchanged and consumed. Traditional neighborhoods and cultural venues are repackaged as

1. Oswald Mathias Ungers, *The Dialectic City*, ed. Stefan Vieths (Milan: Skira, 1997).

2. Oswald Mathias Ungers (1926–2007), German architect and theorist noted for a rigorous rationalist approach to urban form and long-time teaching at Cornell University; see "Architect O.M. Ungers dies at age 81," *Cornell Chronicle*, October 10, 2007.

3. On Ungers's use of "multimedia town," see the essay "The Dialectic City" in Ungers, *The Dialectic City* (Milan: Skira, 1997).

4. Guy Debord (1931–1994), French theorist, filmmaker, and founding figure of the Situationist International. For a concise biographical account, see Andrew Hussey, *The Game of War: The Life and Death of Guy Debord* (London: Jonathan Cape, 2001).

5. Guy Debord, *The Society of the Spectacle*, trans. Donald Nicholson-Smith (New York: Zone Books, 1994).

6. Quotation, Debord, *The Society of the Spectacle* (Nicholson-Smith trans., Zone Books, 1994), thesis 1.

the urban “spectacle” described by Debord, tailored to short-term visitors and the circuits of capital. In this process, urban “memory” does not simply vanish; it is displaced and thinned from its everyday carriers—long-term residents, micro-economies, neighborhood rituals, paths, and place-names. The city remains saturated with historical symbols, yet for long-term inhabitants, the common memory that orients daily life grows ever thinner: neighborhood networks loosen, intergenerational narratives are interrupted, and public narratives are replaced by marketing discourse. Identities and the sense of belonging are steadily eroded.

Alienation of dwelling. Alongside the erosion of memory, dwelling is de-communitized under the twin drives of marketization and technology. Platform economies and transport innovations convert long-term housing into short-term stock and temporary accommodation; individuals drift between cities like nomadic subjects, becoming effectively rootless. Standardized construction and “efficiency-driven” metrics compress public and semi-public spaces within housing environments, weakening interpersonal ties and alienating neighborly relations. At the same time, “smart” management translates domestic routines into measurable service processes, while convenience increases, many relations of negotiation are outsourced to algorithms and property-management regimes. Residents’ agency over space declines, small adjustments become costly, publicness is diluted, and communities lose their capacity for self-repair. Authentic experiences of dwelling are replaced by a “spectacle” engineered by economic efficiency and technology.

The violence of infrastructure. In the ongoing expansion of urbanization, transport and energy networks are not neutral technical supports but active producers of space. Railways, expressways, elevated highways, power grids, and pipelines have become

preconditions for urban development; yet their linear, fenced boundaries generate poor accessibility, noise, forced detours for non-motorized movement, and environmental pollution. Infrastructure cuts continuous urban and natural fabrics into adjacent yet poorly connected fragments; decisions about which areas are linked—and which are not—are inherently selective. Viewed through the lens of power, infrastructure is strongly selective and exclusionary; while it fragments the city's physical fabric, it also produces alienation and contributes to individual marginalization in residents' everyday lives.

Three Dimensions: Memory, Dwelling and Infrastructure

Memory

Memory is directly bound to the past. As Marcel Proust [7] writes, "The true paradises are the paradises we have lost" [8] . This line not only reminds us that human beings are ultimately creatures of experience; it also tightly links the values we ascribe to what is beautiful and good to what has already passed. Through this act of connection, people acquire a profound sense of their own existence and an inalienable sense of worth.

The emergence of memory is always entangled with place. Memory is not an ornament attached to a site; it is the core content through which a site becomes a place. Nor is place an abstract geometric space; it is a lived field that affords orientation and identification. To dwell is to recognize in one's environment orders that are repeatable, recallable, and transmissible, thereby interiorizing natural and artificial factors as part of one's lived experience. Put differently, without memory, space can only be "used" rather than "genuinely inhabited".

7.Marcel Proust (1871–1922), French novelist and essayist, author of the seven-volume novel *In Search of Lost Time whose central theme is involuntary memory*. A comprehensive biography is Jean-Yves Tadié, *Marcel Proust: A Life*, trans. Euan Cameron (New York: Viking, 2000).

8.Marcel Proust, *In Search of Lost Time*, Vol. 6: *Time Regained*, trans. C. K. Scott Moncrieff and Stephen Hudson, rev. Terence Kilmartin and D. J. Enright (New York: Modern Library, 1993), ch. 3. Quotation: "The true paradises are the paradises that we have lost."

Fig.1 Heddal Stave Church in Notodden, the largest stave church in Norway, built in the 13th century entirely of timber.

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In *Genius Loci* [9], Christian Norberg-Schulz [10] advances a phenomenological account of "place" that encompasses both the concrete phenomena of everyday life—people, trees, street lamps, benches, smells, sunlight—and a nested set of environmental scales, from territory, region, and landscape to settlement, structure, building, and monument. One might think, for example, of a particular sculpture in the historic quarters of Naples at the foot of Mount Vesuvius, or a medieval timber church in a village situated between the gorges of Telemark, Norway. (Fig.1) In this sense, place functions as the vessel that bears memory: within this vessel, the small radius of personal everyday life and the larger radius of collective environments are constantly interwoven and transformed, ultimately assembling concrete places.

Individual memory is assembled from small, concrete things. As the famous madeleine episode in Volume I (*Swann's Way*) of Marcel Proust's In Search of Lost Time recounts, "And once I had recognized the taste of the crumb of madeleine soaked in her decoction of lime-flowers … immediately the old grey house upon the street … rose up like the scenery of a theatre." [11] When the tea-soaked crumb enters the mouth, a switch seems to be thrown: scenes from that time and place surface in meticulous detail. Such

9. Christian Norberg-Schulz, Genius Loci: Towards a Phenomenology of Architecture (New York: Rizzoli, 1980).

10. Christian Norberg-Schulz (1926–2000), Norwegian architect, historian, and theorist; a principal voice in architectural phenomenology and long-time professor at the Oslo School of Architecture. Key works include Intentions in Architecture (Cambridge, MA: MIT Press, 1968) and Genius Loci (New York: Rizzoli, 1980).

11.Quotation, *Swann's Way* (Modern Library, 1992), Part I, "Combray."Marcel Proust, In Search of Lost Time, 7 vols., trans. C. K. Scott Moncrieff, rev. Terence Kilmartin and D. J. Enright (New York: Modern Library, 1992–1993).

recollection is not abstract reminiscence; it is triggered by a concrete sensory experience and arises together with space, time, and mood.

Confronting an ever-changing and fragmented modern Paris, Georges Perec [12] maintained a longing for places that would not shift. In *Species of Spaces and Other Pieces*[13] he writes, "I would like there to exist places that are stable, unmoving, intangible, untouched and almost untouchable, deep-rooted; places that might be points of reference, of departure, of origin." [14] He hoped for a place that serves as fixed coordinates for human positioning — anchors in memory. Perec likewise emphasizes such points of reference in the city: immobile steps, a corner one can touch, a shaft of light seemingly held in place. Through repeated passages in and out, such stable and concrete things enable a person to locate the self in the world. The "carriers" of individual memory are thus often unassuming details and sequences; they are effective not because they are rare but precisely because they are "ordinary", accumulating through daily movement into reliable points of reference and, ultimately, composing an individual history.

Collective memory is the "past" jointly narrated and symbolically constructed by a concrete group. It is not a mere aggregation of individual memories; it requires a transition from " what can be remembered by oneself " to " what can be commonly recognized ", so that the small and concrete cues of individual memory become public and shareable experience. *The Monument against Fascism* (1986) in Hamburg, Germany (Fig.2), was a twelve-meter-tall aluminum column covered with lead, placed in a public square in Harburg. People were invited to scratch their names and thoughts against fascism onto its surface using metal pens. As the column filled with marks, it was slowly lowered into the ground until it disappeared, leaving only a small plaque to show where it once

12. Georges Perec (1936–1982), French novelist and member of the Oulipo group, noted for formal constraints and acute observation of everyday urban life; see David Bellos, *Georges Perec: A Life in Words* (London: Harvill, 1993).

13. Georges Perec, *Species of Spaces and Other Pieces*, trans. John Sturrock (London: Penguin, 1997).

14. Quotation,*Species of Spaces and Other Pieces*,Georges Perec(Sturrock trans., London: Penguin, 1997), section "The Page."

Fig.2 Heddal Stave Church in Notodden, the largest stave church in Norway, built in the 13th century entirely of timber.

stood. Here, remembrance was not shown through a fixed image but through a shared act of writing and touching, in which memory quite literally sank into the public ground. In this process, the power of commemoration lies not in permanence but in transforming the practice of memory into performative actions that many people can repeatedly engage in, thereby integrating remembrance into the everyday life of the city and bringing it into the realm of public use and visibility. As anthropologist Susanne Küchler [15] has observed in *The Art of Forgetting* [16], monumental architecture is not a passive container but a mechanism for the material orchestration of memory: through form, material, path, and tactile inscription, social meanings are continually reaffirmed and renewed within place.

In everyday urban life, a large share of collective memory is sustained not by monuments alone but by symbolic systems. As Robert Venturi [17] argues in *Learning from Las Vegas* [18], people's understanding of the environment relies heavily on recognizable symbolic systems: architectural components imbued with symbolic meaning, the recurrent lintel shapes and colors, and street names aligned with

15. Susanne Küchler, anthropologist of material and visual culture, Professor at University College London; her research examines how forms, images, monuments, and technical practices structure social memory and collective meaning.

16. Susanne Küchler, "The Place of Memory," in *The Art of Forgetting*, ed. Adrian Forty and Susanne Küchler (Oxford and New York: Berg, 1999).

17. Robert Venturi (1925–2018), American architect and theorist; coauthor (with Denise Scott Brown and Steven Izenour) of *Learning from Las Vegas* and author of the seminal *Complexity and Contradiction in Architecture* (New York: Museum of Modern Art, 1966).

local festivals, and these elements render a particular place legible. (Fig.3) Such legibility is not merely a technique of commercial communication; it is an infrastructure for the maintenance of collective memory. When a community's symbolic systems remain stable and discernible, and when meanings and everyday activities calibrate one another, people can orient, differentiate, and coordinate quickly in their comings and goings. Conversely, when place-names are arbitrarily changed, paths are severed, or distinctive signs are over-scenographed or stripped of context, the anchors of recognition are lost and the density of collective memory declines.

Accordingly, in the modern metropolis already shaped by "spectacle", simply fabricating new symbols is no longer sufficient to evoke remembrance. The task is to identify methods suited to specific places and to cultivate and maintain the conditions under which memory can be experienced, narrated, and renewed, so that individual sensory triggers and collective public recognition remain continuously coupled — the key to enabling people to recover a sense of identity and belonging.

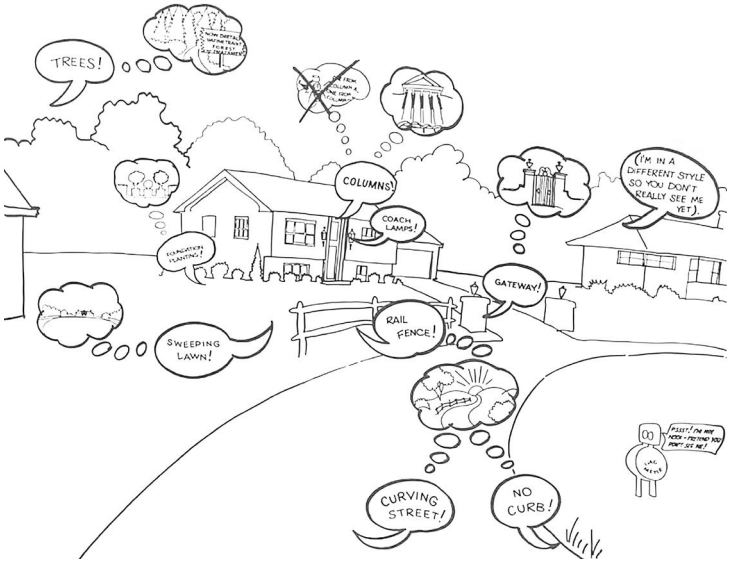


Fig.3 "Precedents of Suburban Symbols," Learning from Levittown studio, Yale, 1970, *Learning from Las Vegas* (1972), Robert Venturi, Denise Scott Brown, and Steven Izenour.

18. Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*, rev. ed. (Cambridge, MA and London: MIT Press, 1977).

Dwelling

"Full of merit, yet poetically, man dwells on this earth." [19] This line from Friedrich Hölderlin's [20] poem *In Lovely Blue* [21] (often cited from "When life is full of endeavor") inspired Martin Heidegger's re-reading of "dwelling." [22] For Heidegger, dwelling is not merely residing at a location; it names the integral relation among earth, sky, divinities, and mortals—an unconcealment of Being itself. Humans do not first exist and then dwell; rather, they exist through dwelling. Hence, dwelling is not only a physical practice — our doing, working, and building in the world, the poem's first hemistich "Voll Verdienst" ("full of merit") — but must also be poetic, bearing the symbolic, creative, and open qualities condensed in the second hemistich "doch dichterisch" ("yet poetically"). Through this conception of dwelling, inhabitants apprehend the truth of being, recover identity and belonging, and accomplish the passage from mere residence to existential dwelling.

Likewise, Gaston Bachelard [23] writes in *The Poetics of Space* [24] : "I should say: the house shelters daydreaming, the house protects the dreamer, the house allows one to dream in peace." [25] The dwelling, then, is not merely a physiological or technical container; it is a site where affects and imagination are housed and where the narratives of the self take shape. An ideal home offers not only physical protection but also a terrain for the expansion of the inner life.

In the twentieth century's wave of industrialization and urbanization, mass housing (MH) became a widely adopted delivery path: its core premise was to use standardized components and rapid construction to support large-scale production, an approach closely aligned with Le Corbusier's Domino logic [26] and the broader project of building industrialization. As Habraken [27] argues in *Support: An Alternative to Mass Housing* [28] , when the housing question is treated as a matter of

19. Quotation, Friedrich Hölderlin, "In Lovely Blue" (In lieblicher Bläue), in *Selected Poems and Fragments*, trans. Michael Hamburger (London: Penguin Classics, 1998).

20. Friedrich Hölderlin (1770–1843), German poet whose late hymns profoundly influenced twentieth-century philosophy and poetics. For a concise biographical account, see the editor's introduction in Hölderlin, Selected Poems and Fragments, trans. Michael Hamburger (London: Penguin Classics, 1998).

21. Hölderlin, "In Lovely Blue." For the English text and critical apparatus, see *Selected Poems and Fragments*, trans. Michael Hamburger (London: Penguin Classics, 1998).

22. Martin Heidegger (1889–1976), German philosopher. On his re-reading of dwelling and the Hölderlin line, see the essay "…Poetically Man Dwells…" in Martin Heidegger, ***Poetry, Language, Thought***, trans. Albert Hofstadter (New York: Harper & Row, 1971). See also "Building Dwelling Thinking" in the same volume for the fourfold (earth, sky, divinities, mortals).

23. Gaston Bachelard (1884–1962), French philosopher of science and imagination; a key figure for twentieth-century reflections on space, intimacy, and poetic image. For a concise critical account, see Cristina Chimisso, *Gaston Bachelard: Critical Introduction* (London and New York: Routledge, 2001).

"production," dwelling is commodified into a consumable finished product, the bond between the dweller and the dwelling is severed, and the city gradually loses its "natural relationship" to human life. In other words, when housing is delivered as a completed object and residents are positioned as passive users, the difficulty lies less in technology than in over-productization that systemically excludes personal agency and expression, eroding identity and belonging.

In response, Habraken proposes the *support–infill* approach — not a return to handcraft, but a decomposition of housing into distinct "levels" that restores the initiative of inhabitants under a clear division of responsibilities. His definition of support is explicit: "A support structure is a construction which allows the provision of dwellings which can be built, altered and taken down, independently of the others." [29] The point is independence and changeability. Support supplies the long-life elements—structural grid, vertical circulation, and primary services—and bears the corresponding professional responsibility; infill is determined by users (room combinations, partition layout, kitchen/bath equipment) as short-cycle elements that can be adapted over time to household and life-course change. Thus long- and short-term, professional and user, each find their proper place: industrialization is not rejected but redeployed to serve renewal and diversity.

Dutch practice offers observable evidence for the efficacy of this approach. *The Uses of Levels* [30] documents a representative type: supports repeat at the scale of span and module, while unit infills differ markedly—producing an ensemble of "the same frame, different dwellings" (Fig.5). More importantly, Habraken summarizes several efficiency arguments for separating infill from the project: infill can be designed as an independent product system, enabling industrialized components at scale; separate installation saves

24. Gaston Bachelard, *The Poetics of Space*, trans. Maria Jolas, foreword by John R. Stilgoe (Boston: Beacon Press, 1994).

25. Quotation, *The Poetics of Space*, Gaston Bachelard(Jolas trans., Beacon Press, 1994), p. 6. (From Chapter 1.)

26. Le Corbusier, *Towards a New Architecture*, trans. Frederick Etchells (London: Architectural Press, 1927), 229.

27. N. John Habraken — Dutch architect and theorist (b. 1928), noted for the theory of supports and for advancing resident participation in housing.

28. Habraken, Support: An Alternative to Mass Housing (London: The Architectural Press, 1972).

29. Quotation,*Support: An Alternative to Mass Housing*,Habraken (London: The Architectural Press, 1972), pp. 59–60.

30. Habraken, N. John. "The Uses of Levels." Pamphlet/paper, 1998; esp. pp. 12–14 ("Efficiency") and figs. 11–12.

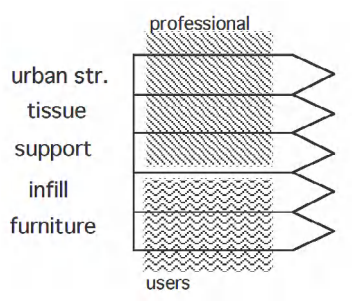


Fig.4. 'Support/Infill' approach diagram showing distribution of professional and user control across five environmental levels: urban structure, tissue, support, infill, and furniture.

substantial on-site labor and overhead; common infill systems are transferable across projects, easing maintenance and upgrades; parallel suppliers foster choice in style and price; and each unit can be incrementally modified during occupation rather than being locked into a once-and-for-all solution. Read alongside the role-allocation diagram (Fig.4), the five levels—urban structure, tissue, support, infill, furniture — map cleanly onto the boundary between professional responsibility and user control, clarifying who sets long-term conditions, who holds short-term adjustment, and how the two interface.

In sum, support–infill is not a stylistic slogan but a method for writing time and participation into housing. It preserves clear structure and public safety while returning the inner life-world to the dweller's control, allowing personal expression to accumulate through everyday alterations. For contemporary cities, this offers a workable technical

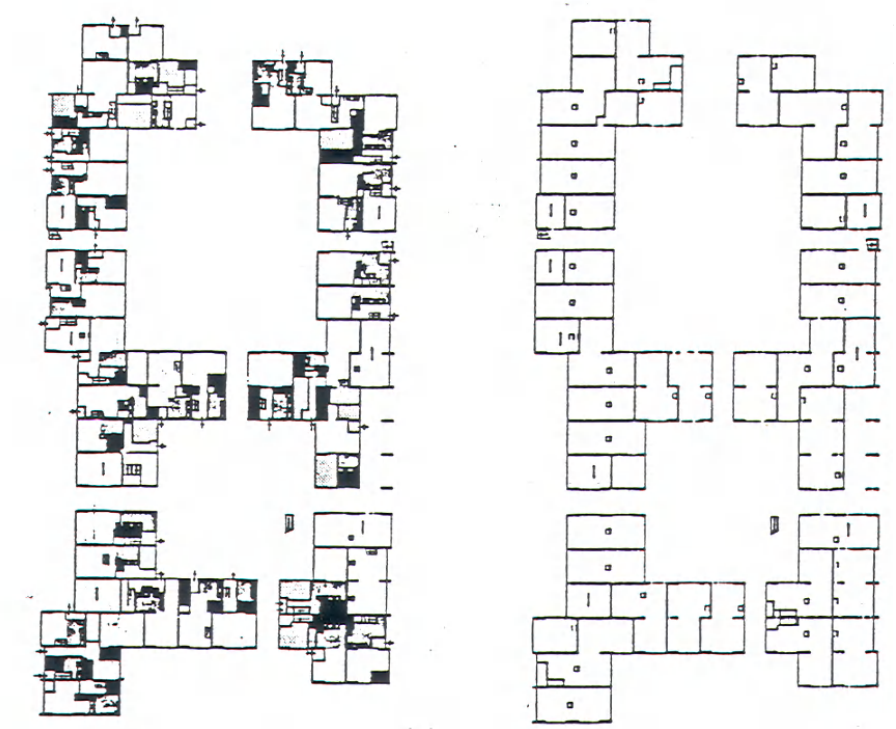


Fig.5. Example of a support project designed by architect Frans van der Werf, illustrating variation in infill plans within a repetitive support structure.

path to balance large-scale provision with individual difference, and a robust institutional lever for rebuilding the relation between dweller and dwelling.

Infrastructure

In the contemporary urban context, "infrastructure" extends beyond the "hardware" of roads, bridges, railways, ports, airports, pipelines, water and wastewater, energy, and protective systems. It also comprises institutional-technical assemblages, such as communication and data networks, logistics systems, fare structures and timetables, dispatching algorithms, as well as property management and security regulations. These elements constitute the base layer of everyday life. From early-morning electricity peaks and water pressure, to peak-hour rail interchanges and bus-priority lanes, to parcel-sorting time windows and platform couriers' rights-of-way, each seemingly neutral corridor, node, and protocol organizes the flows of people, goods, information, and time, thereby shaping the city's accessibility, sequencing, and daily rhythms.

Large-scale coordination in the modern metropolis depends on the convenience and efficiency that infrastructure provides; yet, infrastructure is not a purely technical apparatus. It produces space in abundance — indeed, in many instances it is space. As Henri Lefebvre [31] argues in *The Production of Space* [32], "space is neither a thing nor a container, but a product and a means of production," [33] and power operates through space no less than within formal institutions. Moreover, infrastructure, while ostensibly serving the public, functions as a continual selection mechanism: through routing, hierarchization, and allocation, it determines what is prioritized and what is secondary, whose time is protected and whose waiting is tolerated, which areas merit provision and which are excluded. Seen

31. Henri Lefebvre (1901–1991), French philosopher and sociologist, whose theory of the production of space and the urbanization of society has been foundational for urban studies; see Andy Merrifield, *Henri Lefebvre: A Critical Introduction* (London and New York: Routledge, 2006).

32. Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford and Cambridge, MA: Blackwell, 1991).

33. Quotation, Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford: Blackwell, 1991), p. 85.

in this light, infrastructure is a power-technology of spatial production — it reallocates resources, attention, and risk across the city, stratifies space and time, and presents these outcomes to the public as regimes of rationality.

The urban impacts of infrastructure can be divided into two categories, beginning with the visible. Rail lines, urban expressways, and extensive elevated highway systems cut through the urban fabric; street networks are severed and neighborhoods are isolated; walking and non-motorized travel are forced into detours, undermining everyday continuity. Around these systems, vast amounts of negative public space emerge—under elevated highway greyfields, broad buffer greenbelts along expressways, and derelict strips flanking rail corridors. Nominally open, such spaces are in practice difficult to occupy or use, with security and environmental risks compounded. At the same time, the graded connectivity between infrastructure and the city renders access to urban resources increasingly uneven: inter-neighborhood ties are obstructed, and disparities in service accessibility widen. More severe still, under the sway of technical rationality, linear geometries and construction logics often erode historical continuity and cultural memory: traditional streets and plots are erased, familiar streetscapes and view corridors are broken, and the narratives of old quarters are forgotten in the name of infrastructural progress. The Wuchang Zhonghemen (formerly Qiyimen) area in Wuhan is emblematic: within just two decades, a historic district that had endured for nearly five centuries was consumed by rapidly constructed elevated highways and expressways, while residents' collective memory gave way to abstract assemblages of reinforced concrete. (Fig.6)

The invisible effects operate chiefly at the level of social relations and spatial justice. As Stephen Graham [34] and Simon Marvin [35] argue in

34. Stephen Graham (b. 1965), British urbanist and theorist of cities, infrastructure, and technology; coauthor (with Simon Marvin) of *Splintering Urbanism* (Routledge, 2001).

35. Simon Marvin (b. 1960), British scholar of urban infrastructure and governance; coauthor (with Stephen Graham) of *Splintering Urbanism* (Routledge, 2001).

Fig.6 Urban change around Zhonghe Gate (Historical city gate; black square) in Wuchang District, Wuhan, shown via six Google Earth composites. The progression from one to six black dots marks 2000, 2007, 2009, 2013, 2016, and 2022.

Splintering Urbanism [36] , networked infrastructures expand unevenly, producing selective connectivity that splits the metropolis into zones of privileged access and zones bypassed: favored nodes attract investment, capital, and high-end consumption, while edge areas bear noise, pollution, waiting, and higher time costs. The distribution of services and risks differentiates along gradients of accessibility, geographicizing inequality, and hardening class boundaries. Meanwhile, public activities contract under throughput imperatives, residents' willingness and capacity to engage in "common affairs" decline in tandem, spaces for interpersonal communication become scarce, and the city's social cohesion and publicness are weakened.

Accordingly, infrastructure must be redefined: not merely as an engineering system that "connects two points," but as a public construct capable of producing place. In Heidegger's discussion of the bridge, the bridge not only connects two points; it gathers — inviting lingering, orienting movement, and organizing routines and rituals — thereby making the two sides legible as one place. From this vantage, remaking infrastructure is not a matter of laying a faster line, but of multiplying functions, adding cross-connections, and aligning operational schedules with surrounding urban daily life, so that it becomes a public platform that is inhabitable, legible, and participatory. Once this understanding informs planning and design, infrastructure ceases to be a one-way projection of power and becomes a unity of symbol and method: it points toward the possibility of reconnection, and — through concrete spatial operations — reweaves dispersed fragments into a continuous urban network, thereby repairing ruptures, nurturing publicness, and providing usable everyday settings for urban memory and individual life.

36. Stephen Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London and New York: Routledge, 2001).

From Dimensions to Layers

Spatial Representations of Memory, Dwelling and Infrastructure

The three Dimensions introduced in Section — *Three Dimensions: Memory, Dwelling and Infrastructure* — are not abstract theoretical notions; they materialize in the city through distinctive Spatial Representations. Memory is largely sedimented in historic cores and their street-and-plot fabrics, in monuments, and in toponymic systems. Dwelling, through varying residential models and patterns of expansion, produces life-worlds in new urban tracts that differ from those of the historic core. Infrastructure manifests as corridors and nodes—railways, bridges, expressways, and metro lines—whose edge zones tend to generate distinctive spatial forms and building types. It is precisely these relatively legible Spatial Representations that render the three Dimensions observable and analyzable, and that make cross-city comparison possible through mapping, measurement, and other diagrammatic methods.

The Spatial Representation of Memory is exemplified by the historic centre: it concentrates collective cultural memory and personal histories, bears a symbolic lineage of buildings, and—by sustaining traditional street scales, plot divisions, place-names, festivals, and markets—continually reproduces identity and belonging. The Spatial Representation of Dwelling is expressed primarily in the urban landscapes produced by modern residential expansion; new districts accommodate large populations through novel housing models that not only reshape urban space and street interfaces but also re-order the daily rhythms and social relations of "home–neighbourhood–community," thereby forming new communal and familial identities. The Spatial Representation of Infrastructure consists of railways, bridges, expressways, and their nodes. On the one hand, it reorganizes accessibility and the allocation of resources, revealing the directional

operation of power; on the other, because of its linear disposition, it generates extensive edge conditions with potential public value—for example, railway verge lands, spaces beneath elevated highway, and setback green belts—which may evolve into new public platforms or decline into residual vacant spaces. (Table.1)

Dimemsion	Spatial Representations	Keyword
Memory	Historic Centre	*cultural memory,monuments, Identity, sense of belonging, symbolism, festival event*
Dwelling	Modern Residential Expansion (Mass Housing)	*housing type, street interface, sense of community, home, paticipatory*
Infrasturcture	Railway, Expressway, quay Elevated highway,	*accessibility, communal node, allocation of resources,power, framentation, public space*

Table 1. Dimensions, spatial representations, and keywords for Memory, Dwelling, and Infrastructure.

At a broader scale, these three Dimensions are widely present across cities worldwide; yet their spatial morphologies and landscape expressions vary with differences in historical–cultural context, institutions, technological capacity, and governance logics. Each Dimension operates with its own system and internal rationale while remaining interdependent, overlapping, and competitive with the others, jointly shaping the contemporary city's complex, multilayered forms and narratives. Accordingly, we propose Memory, Dwelling, and Infrastructure as three complementary avenues for reading and comparing cities, using their Spatial Representations as points of entry: map the boundaries, street fabrics, and monumental nodes of historic centres; document housing types and densities, street interfaces, and the usability of communal open spaces in newly expanded residential areas; identify the corridors and nodes of

railways, bridges, and expressways, along with adjacent residual lands and building types, and conduct analyses of accessibility and continuity. Through this work, we establish a renewed understanding of the city grounded in Memory, Dwelling, and Infrastructure — one that departs from the traditional image of a complete, unified entity and instead conceives the city as a heterogeneous, complex, and ever-changing dialectical whole — thereby laying a robust foundation for subsequent analysis and design.

Global City Case Studies

This section adopts the three Dimensions — Memory, Dwelling, and Infrastructure — as a comparative framework, selecting representative subareas in Marseille, Paris, Bari, Beijing, Seoul, and Yokohama (Fig 7), at a common scale, identifying and contrasting their corresponding Spatial Representations.

The Spatial Representation of Memory points to the historic centre: fine-grained streets and plots, mixed uses, and high density, typically situated at the urban core and preserving monuments, toponyms, and a traditional, small-scale everyday network.

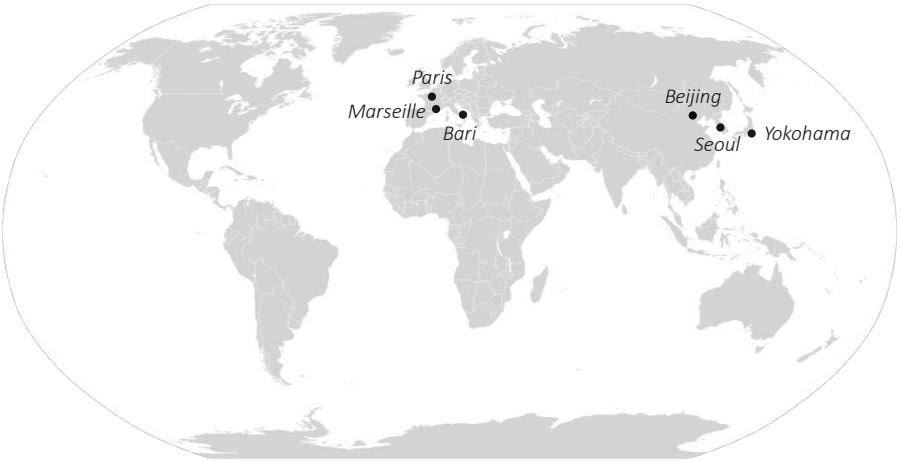


Fig.7 Locations of six case cities—Paris, Marseille, Bari, Beijing, Seoul, and Yokohama—on a world base map.

The Spatial Representation of Dwelling is the modern expansion area, characterised by larger blocks, wider cross-sections, taller and predominantly modern buildings, a looser urban fabric, and communities that rely more heavily on large-scale road systems.

The Spatial Representation of Infrastructure is the most legible—railways, urban expressways, elevated highway, and ports—often positioned at the interface between old and new districts and tending to pull surrounding morphologies toward the larger scales and modern building types characteristic of the new city.

Regionally, European cases commonly exhibit the layered co-existence of three spatial figures: historic grids, post-industrial redevelopments, and infrastructural barriers juxtaposed within short distances, producing persistent tension between continuity and rupture. Asian cases more strongly display temporal unevenness, where slowly accumulated historical growth and rapid, large-scale transformation occur side by side; historic cores are frequently retained as fragments, symbols, or tightly managed enclaves, while new districts manifest the continual outward expansion of modernist, utopian systems into novel sites or portions of the old city.

Tracing boundaries, breaks, and interconnections along these three Dimensions' Spatial Representations allows a clearer reading of urban memory and identity, residential order and everyday paths, and the spatial allocation of power and resources—thus establishing a comparable framework for "reading the city" and enabling a deeper understanding of the complex contemporary urban condition.

Marseille

Fig.8 Three dimensions in Marseille: Historic area / Modern residential expansion area / Infrastructure.

Marseille's Memory is concentrated around the Vieux-Port and the Le Panier quarter on its northern shore. The district preserves a medieval and early-modern fabric: small plots and continuous row fronts, undulating lanes, and a close interweaving of ecclesiastical and civic buildings that together create a dense, walkable environment. The harbour mouth is guarded by the seventeenth-century Fort Saint-Jean, while quays and waterfront squares host markets, festivals, and everyday exchanges, forming the symbolic core of the city's identity. From the nineteenth century onward, the city expanded eastward

and northward from the Old Port. The emerging street system combined grid and radial logics, with wider arterials and enlarged block dimensions. La Canebière extends inland from the Vieux-Port as a principal axis of commerce and public life, while Rue de la République links the Old Port to the La Joliette docklands, stitching together the historic core, the quays, and subsequent redevelopment areas. Post-war reconstruction in the twentieth century introduced larger-scale housing and mixed complexes, producing a predominantly modern residential and service landscape whose daily rhythms diverge markedly from those of the historic centre.

Waterfront Infrastructure is the most legible layer: the Old Port's quays and seawalls, the connections to Gare Saint-Charles and the outer harbour, and the coastal arterials and port installations together form a corridor-and-node framework. For a time, these elements constituted a physical and perceptual line between the historic core and zones of expansion, constraining cross-access and waterfront reachability. Recent interventions have recast this infrastructure as public space and connective tissue. The MuCEM footbridge ties directly to Fort Saint-Jean, and new waterfront squares and continuous promenades open sightlines and shoreline access to pedestrians and slow modes of transportation. In effect, the port and waterfront mobility now provide an accessible, inhabitable, and legible public interface that both "stitches" and "showcases", strengthening the interplay and balance among Memory, Dwelling, and Infrastructure in Marseille's maritime urban condition. (Fig.8)

Paris

Fig.9 Three dimensions in Paris: Historic area / Modern expansion area / Infrastructure.

The Bercy district articulates Paris's historical dimension with clarity. Centered on Bercy Village, it preserves continuous rows of former wine warehouses and vaulted cellars, together with paved alleys and courtyard spaces; fine-grained streets and enduring toponyms jointly sustain local identity. To the north, toward Place de la Nation, unfolds a nineteenth-century street system that combines radial and grid logics. Blocks are compact, and walkability is high, where historical strata and everyday urban life overlap.

Since the 1980s, Bercy's former industrial lands have been

redeveloped in large contiguous tracts into mixed complexes. Parc de Bercy, the Accor Arena, and the Ministère de l'Économie et des Finances emerged as new urban nodes. Offices and housing are interwoven; block scales increased and cross-sections widened, while building massing and architectural language became predominantly modern. This shift produced daily rhythms and forms of community identification distinct from the historic core, with residential space moving from fine-grained lanes toward open-campus settings, radial avenues, and a network of urban squares.

The area's infrastructural framework is formed by dense railway corridors linking Gare de Lyon and Gare de Bercy, and by junctions at the eastern end where the Boulevard Périphérique meets the A4 at Porte de Bercy. Rail embankments, interchanges, and the riverside vehicular system stack up to create a long-standing barrier between the inner city and the waterfront; pedestrian crossings depend on a handful of passages and bridges, limiting access to the waterside edge. Recent interventions have sought to transform the "barrier" into a connector: the Passerelle Simone-de-Beauvoir links the Bibliothèque nationale de France on the Left Bank to Parc de Bercy, while riverside promenades and quay platforms have been opened as public spaces. To some extent, infrastructure now performs a stitching function, even though overall urban continuity remains constrained. (Fig.9)

Bari

Fig.10 Three dimensions in Bari: Historic centre / Modern residential expansion area / Infrastructure.

Bari's urban memory is concentrated in the peninsula-bound Bari Vecchia. The area is characterized by a dense, compact medieval fabric: narrow, winding alleys and finely subdivided plots, with a fortified edge condition along the waterfront. Landmarks such as the Basilica of Saint Nicholas and the Norman–Hohenstaufen Castle anchor religious and civic life, while festivals, toponyms, and street markets layer upon one another to continually reproduce the city's identity and symbolic order.

In the early nineteenth century, under Murat's [37] direction, the city

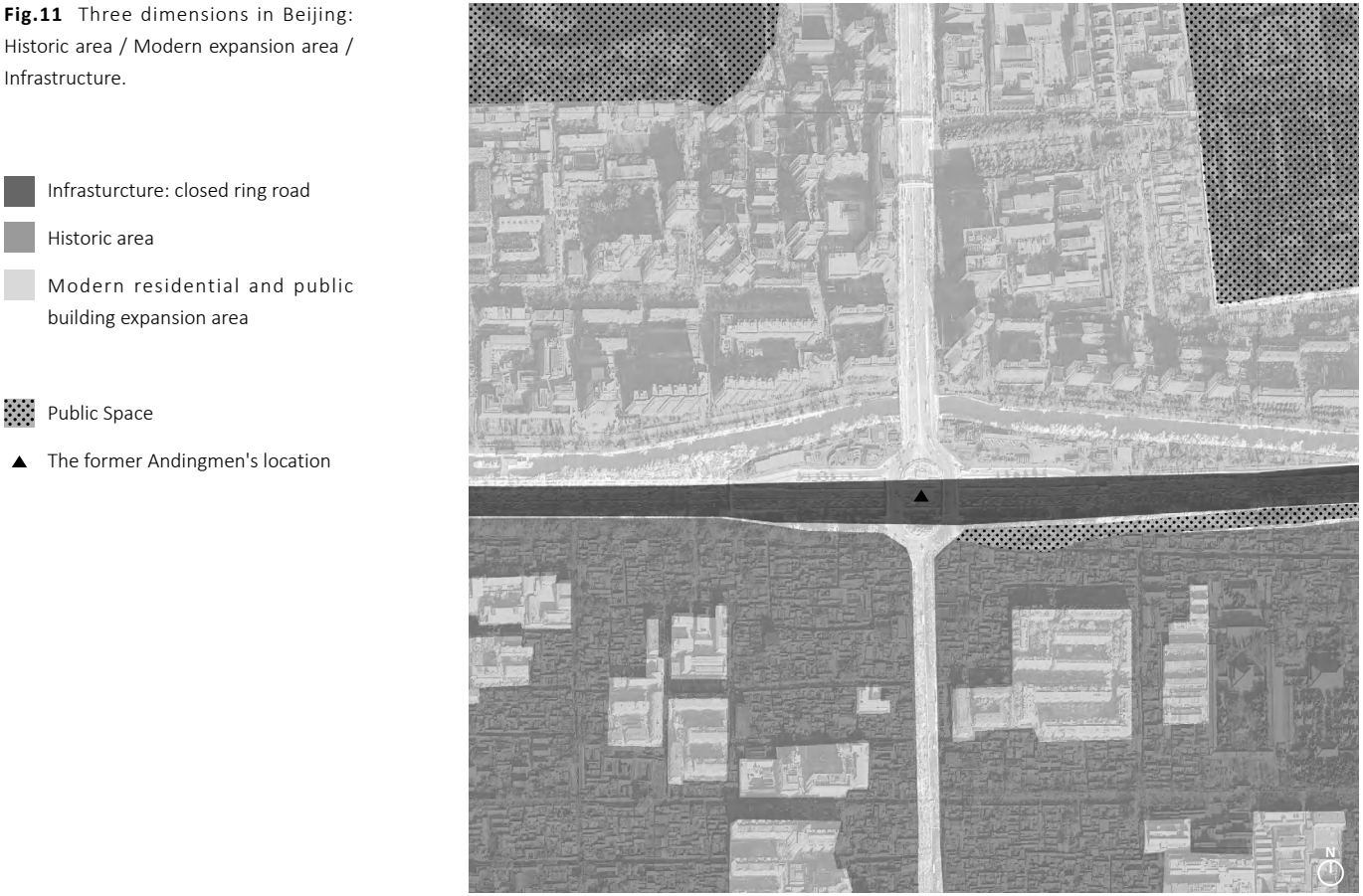
37. Joachim Murat (1767–1815) — Marshal of France under Napoleon and King of Naples (1808–1815); during his reign the administration promoted modernizing reforms and new urban layouts in Apulia, including the founding of Bari's rational "Murattiano" extension outside the old walls. See Andrew Hilliard Atteridge, *Joachim Murat, Marshal of France and King of Naples* (London: Methuen, 1911).

expanded beyond the old walls toward the southeast, producing a modern quarter of rational grids and broad boulevards that embodied Enlightenment ideals of order and legibility. After World War II, new residential districts rapidly emerged south of the railway: block structures became progressively looser and more irregular, plots more fragmented, and the edges of public space less clearly defined. Larger-scale, mixed residential and service complexes came to structure everyday life, standing in sharp contrast to the fine-grained scale of the historic core.

A central rail corridor running across the city constitutes the most consequential piece of infrastructure. It organizes regional passenger and freight flows, yet also acts as a linear barrier, separating the historic core and the nineteenth-century grid to the north from the postwar expansions to the south. Pedestrian crossings are sparse, transverse connections are constrained, and marginal vacant tracts and underused parcels accumulate along the corridor. As a result, three spatial figures co-exist within the same city—a compact medieval core, a regular nineteenth-century expansion, and a dispersed postwar residential field—and the morphological ruptures and social linkages among them are shaped above all by the alignment of infrastructure and by differences in accessibility. (Fig.10)

Beijing

Fig.11 Three dimensions in Beijing: Historic area / Modern expansion area / Infrastructure.



Around Andingmen (Beijing ancient gate) , the traffic alignment of the North Second Ring Road clearly traces the line of the Ming–Qing inner city wall [38]. South of the ring lies Beijing's historical core, where the urban structure is organized by a dense, fine-grained hutong network and siheyuan courtyard houses as basic units. Parcels are small, and the alley fabric remains continuous; toponyms and street names sustain local narratives and everyday memory. Temple compounds, paifang archways, and pocket courtyards together form a walkable, linger-friendly neighbourhood environment, in which

38. "Ming–Qing inner city wall" refers to the defensive walls of Beijing's Inner City as rebuilt and maintained during the Ming (1368–1644) and Qing (1644–1911) dynasties, enclosing the imperial urban core and distinguishing it from the Outer City.

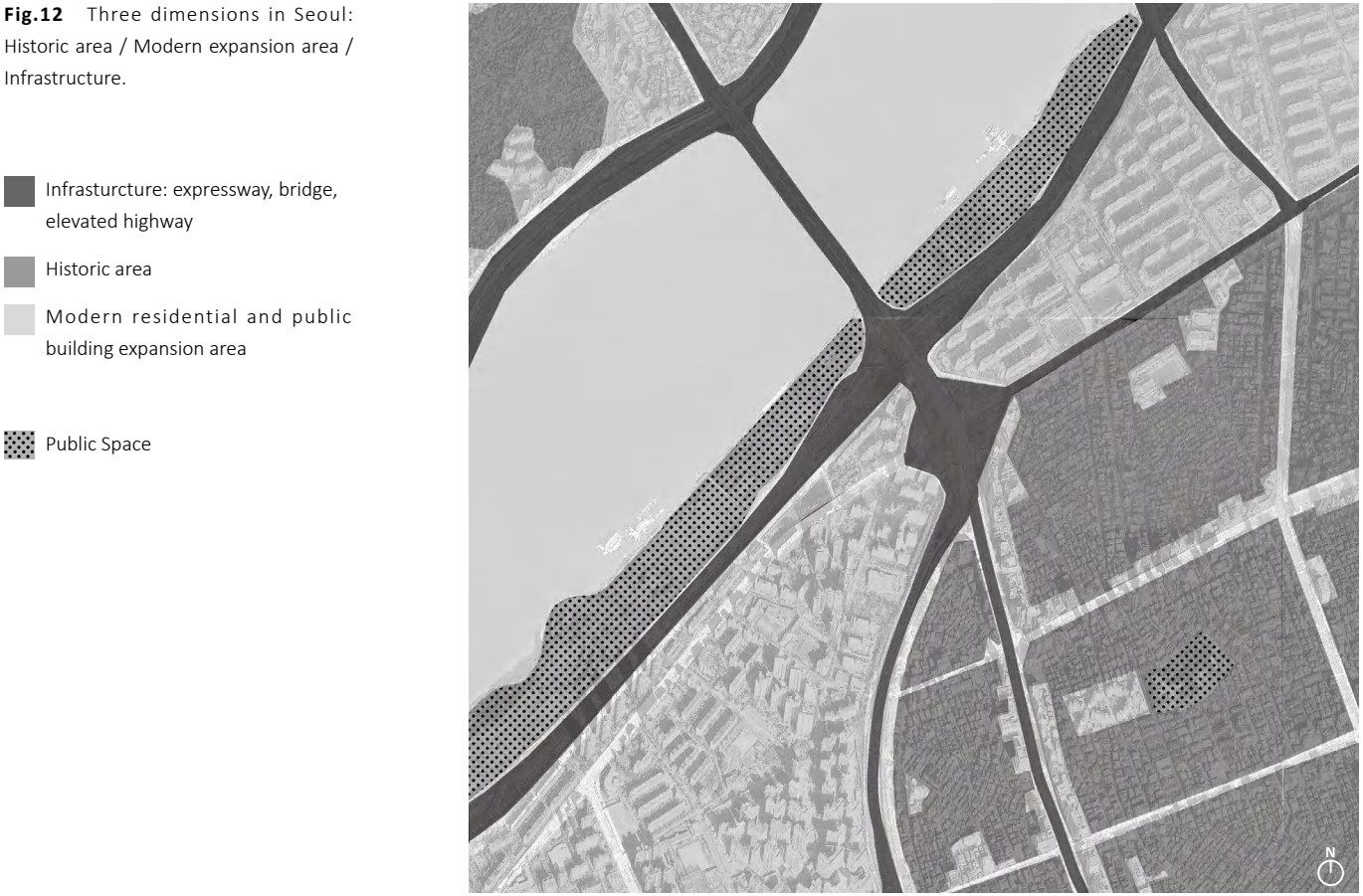
historical meaning is continually activated through legible spatial sequences. Although portions of the old city have been replaced by larger-scale modern buildings—producing a juxtaposition of old and new—the area south of the Second Ring remains, in aggregate, the most representative spatial milieu of Beijing's collective memory.

North of the ring, a different residential configuration emerges. From the 1960s onward, urban expansion advanced on a planned grid, yielding larger block dimensions and wider carriageways. Slab blocks stand alongside high-rise towers; danwei (state-owned enterprises) compounds and gated communities became the primary organizers of everyday life. Schools, markets, and public services cluster at roadway nodes; mobility is more automobile-dependent, and community boundaries are defined largely by road hierarchies and property management regimes. In contrast to the fine-grained alleys of the old city, this residential model privileges functional zoning and efficiency.

As a linear infrastructure inheriting the corridor of the former city wall, the Second Ring Road forms a powerful traffic armature at the Andingmen Bridge interchange. It not only organizes urban flows but also inscribes a firm boundary in both physical and symbolic terms: the historic core to the south and the newer expansions to the north are sharply separated in accessibility and interface continuity; pedestrian crossings rely largely on underpasses and grade-separated interchanges, leaving transverse connections limited. Overall, the juxtaposition of the ring road and the city moat establishes a "traffic corridor" that both divides and, via a few bridges and linear green belts, partially stitches across it—producing a distinct and legible dialogue across time between Memory, Dwelling, and Infrastructure in Beijing. (Fig.11)

Seoul

Fig.12 Three dimensions in Seoul: Historic area / Modern expansion area / Infrastructure.



In the older quarters of Gangnam—such as Nonhyeon-dong and Sinsa — the Memory dimension remains legible. These areas were built up incrementally on small parcels, through accretions and replacements: low-rise villas and multi-household walk-ups stand in close succession; streets are fine-grained; corner shops, schools, and churches are scattered as point-like anchors; most daily needs are reachable on foot. This fine-grained, mixed-use, walkable fabric preserves the everyday memory and local identity of the earliest waves of urbanization on the river's south bank.

By contrast, Seocho-gu—especially Banpo and Jamwon—exhibits a Dwelling pattern shaped since the 1970s–80s by comprehensive planning: large ensembles of high-rise apartments organized as superblocks, set along wide arterials with generous setbacks and internally integrating schools, green space, and neighbourhood retail. The result is a modern residential landscape characterized by clusters of towers and contiguous greens, with relatively uniform street interfaces; community boundaries are defined more by road hierarchy and property-management regimes than by fine-grained streets.

The area's Infrastructure is structured by the Han River waterfront system and riverside expressways, Gangnam-daero and multi-level interchanges, and cross-river links such as the Banpo Bridge. On the one hand, these corridors and nodes efficiently organize cross-river commuting and urban traffic; on the other, they create a continuous vehicular barrier between city and river, so that transverse walking and cycling rely on a handful of bridges and underpasses, weakening street-to-water connections. Recent interventions have sought to repurpose parts of this infrastructure as public space—Banpo Hangang Park, riverside promenades, and related improvements—turning the waterfront edge into an urban interface that is accessible, linger-friendly, and usable. (Fig.12)

Yokohama

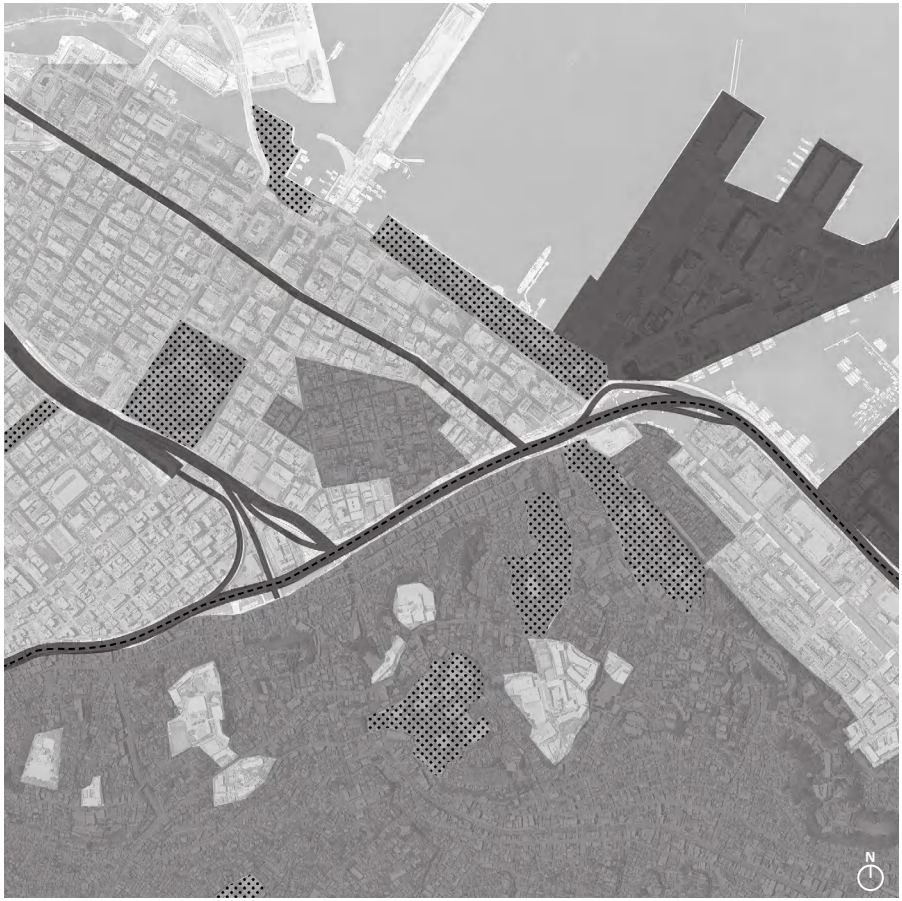


Fig.13 Three dimensions in Seoul: Historic area / Modern expansion area / Infrastructure.

Infrasturcture: expressway, elevated highway, quay

Historic area

Modern residential and public building expansion area

Public Space

K3 Expressway

Yokohama's Memory is concentrated in the districts south of the Shuto Expressway Kanagawa Route 3 (Kariba Line, K3). The area largely retains its prewar urban form: a fine-grained yet irregular fabric of narrow, sinuous lanes and small, continuous plots, with dwellings interwoven with temples, shrines, and small shops to form a pedestrian-scale network of everyday life. Incremental renewal and the persistence of the toponymic system have sustained local identity and quotidian memory at the micro scale.

By contrast, north of K3 — particularly in the Kannai district —

large-scale, government-led reconstruction after the 1923 Great Kantō Earthquake [39] and the 1945 air raids produced a modern expansion zone characterized by rectilinear grids, widened arterials, and larger plots. The rebuilding prioritized safety, fire prevention, and traffic accessibility, introducing office, administrative, and logistics uses alongside modern housing and mixed complexes. The result is a more open, regular, and clearly zoned environment for living and work, in sharp contrast to the fine-grained districts to the south.

A system of port piers, coastal elevated expressways, and connector railways constitutes the infrastructural corridor of central Yokohama. K3 — opened in stages between 1984 and 1990 and elevated for long stretches above the Nakamura River — links waterfront development to inland routes and efficiently organizes freight and commuting; at the same time, it inscribes clear linear boundaries and hierarchies of access between districts. In recent years, portions of this infrastructure have been reworked as public interfaces: Yamashita Park and waterfront promenades stitch together activity spaces along the shore, while the Ōsanbashi International Passenger Terminal and its adjoining plazas provide accessible civic platforms. In sum, three Spatial Representations co-exist within the same territory — the historic districts to the south, the reconstructed expansion to the north, and the intervening port-and-transport corridors — whose overlaps and couplings among Memory, Dwelling, and Infrastructure jointly shape the contemporary landscape of Yokohama's urban core. (Fig.13)

39. The "1923 Great Kantō Earthquake" was a ~M7.9 quake on 1 September 1923 that devastated the Tokyo–Yokohama region and prompted state-led reconstruction with widened firebreak streets and rectilinear grids.

Fig.14 Detail from No. 17. Bari, Monopoli, Martina Franca by Giovanni Antonio Rizzi Zannoni (1736 – 1814). Published by Giuseppe Guerra, Naples, 1820.

Located in Apulia, Polignano a Mare, Monopoli, and Conversano lie in proximity and have long shared a regional network of trade, religion, and defense. As shown on Rizzi Zannoni's regional map (Fig.14) , these settlements had stabilized by the classical–medieval periods, subsequently strengthening walls and gates under Norman and Hohenstaufen rule, and in the modern era, gradually expanding around their historic perimeters. Their locations set divergent trajectories: Polignano a Mare and Monopoli are coastal cities whose historic cores face the sea and harbor basins, whereas Conversano sits inland on higher ground, organized around a castle and cathedral with ring-like outward growth.a more open, regular, and clearly zoned environment for living and work, in sharp contrast to the fine-grained districts to the south.

In terms of Memory, all three historic cores retain fine-grained streets and small plots, with monumental buildings and vestiges

of fortifications bearing local identity. In Polignano a Mare and Monopoli, the old towns cling to sea cliffs or harbor basins; plazas and lanes directly host fishing-related routines, festivals, and markets, tightly coupling historical memory with the waterfront everyday. Conversano's hilltop core is edged by a ring of contiguous squares and green spaces beyond the gates, functioning both as nodes of circulation and as a buffer between past and present. Thus, while each serves as a "memory core," the coastal pair emphasizes a seaward public interface, whereas Conversano relies on ring-shaped public space to maintain accessibility and legibility of the old town.

As for Dwelling, expansion in all three cities has been phased. In Polignano a Mare and Monopoli, the initial phase produced grid-like, relatively small-scale streets and plots around the old core — larger than the medieval fabric yet still walkable — with predominantly low- to mid-rise housing and ground-floor everyday services. A subsequent phase introduced larger, irregular roads and plots, together with taller modern buildings and mixed developments. The difference lies in scale and tempo: Monopoli grew faster and farther, with more extensive and regular grids; Polignano a Mare remains smaller overall, and development south of the railway is still limited, though reserved land and edge conditions suggest possible future enlargement along a path similar to Monopoli's. Consequently, the two coastal cities now juxtapose three urban fabrics — the old town, a grid-based near-periphery, and an outer belt of larger, irregular blocks — whereas Conversano has expanded in ring-like layers around the core, at an intermediate block scale, with the public-space ring more gently mediating between old and new.

From the standpoint of Infrastructure, railways constitute essential mobility systems and urban spaces in all three cases, though their effects differ. In Monopoli and Polignano a Mare, the rail line runs

Fig.15 Three dimensions in Polignano a Mare: Historic centre / Modern residential expansion area / Infrastructure.

Infrasturcture: railway, expressway

Historic centre

Modern residential expansion area (formed in different periods)

Public Space

--- SS16 expressway

Fig.16 Three dimensions in Monopoli: Historic centre / Modern residential expansion area / Infrastructure.

Infrasturcture: railway

Historic centre

Modern residential expansion area (formed in different periods)

Public Space

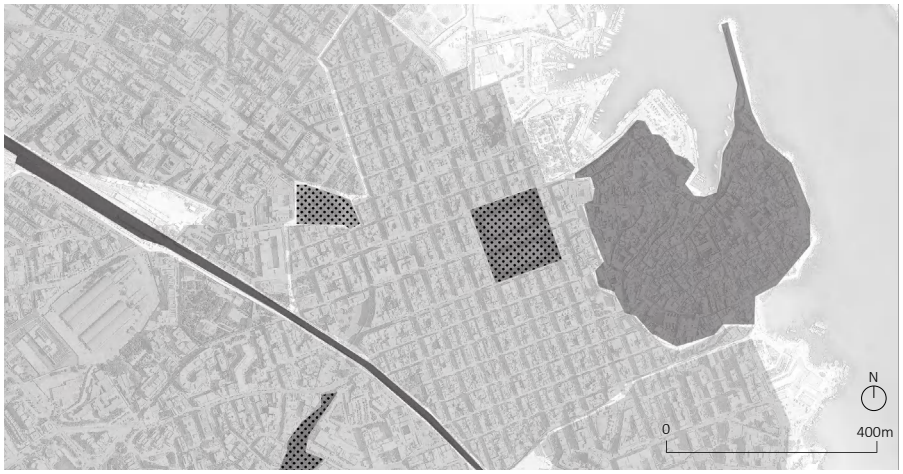


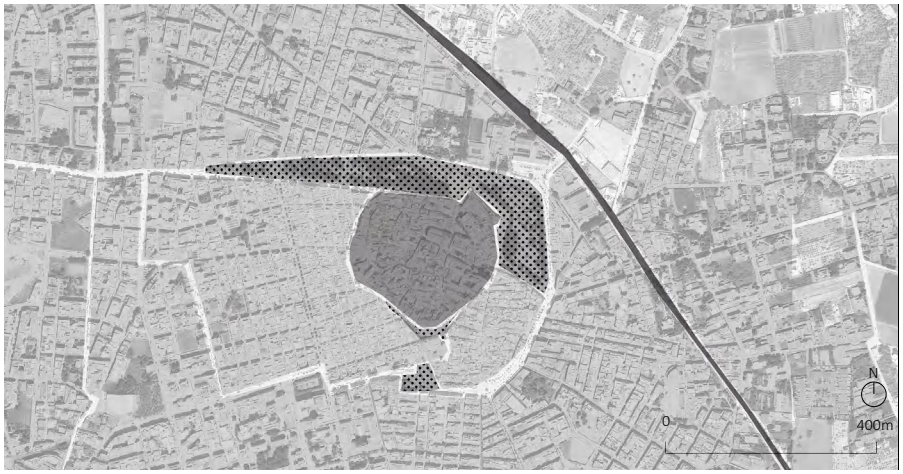
Fig.17 Three dimensions in Conversano: Historic centre / Modern residential expansion area / Infrastructure.

Infrasturcture: railway

Historic centre

Modern residential expansion area (formed in different periods)

Public Space



along the coast on a comparable scale. Because Monopoli's outward growth has been faster, the railway now sits almost at the city's center, forming a linear interface between the old core and peripheral development, with reasonably clear crossing points. Polignano a Mare is more complex: the railway runs in parallel with the SS16 expressway, generating substantial vacant and underutilized tracts between and around the two corridors, further constraining lateral walking and ground-level connectivity; future efforts to restore continuity may thus face greater challenges. By contrast, Conversano's railway skirts the urban edge, producing less disruption to the internal fabric, while its ring of public spaces offers an effective buffer and connection between the historic core and newer districts. In short, linear infrastructure is both a necessary conduit and, when growth judgments fall short, a hardened edge that reallocates urban resources along its length. (Fig.15, Fig.16, Fig.17)

Why move from Dimensions to Layers? The comparison shows that Memory, Dwelling, and Infrastructure occupy distinct spatial distributions, arise from different historical moments, and follow divergent operational tempos; they frequently intersect and overlap yet do not necessarily align. In Monopoli, the railway migrated from the edge toward the interior as the city expanded, becoming an interface that requires stitching. Conversano relies on a broad ring of public spaces to gently connect historical and contemporary realms. Polignano a Mare superimposes two linear systems—the railway and the expressway — producing more pronounced edge vacancies and lateral breaks. Rather than treating the three Dimensions as parts of a single system, it is more precise to conceive them as interrelated, occasionally misaligned layers in time and space: different "layers" are written, stacked, covered, and reused at different moments, jointly constituting the city's actual condition. Adopting a layered

perspective allows us to read spatial distribution, temporal sequence, and causal mechanisms together — and, on that basis, to decide where to stitch, where to reinforce edge conditions, and where to preserve historical interfaces, providing a clear and actionable path for subsequent analysis and design.

City as Layer [40]

Rethinking the City as Layer

Modern cities can no longer be grasped as wholes governed by a single principle; rather, they are composite formations produced by the intersection and superposition of multiple systems, temporalities, and value regimes. As Oswald Mathias Ungers states at the outset of *The Dialectic City*, "Modern cities are complex structures and can no longer be fitted into a single, uniform and pure system." [41] He further argues that "The modern city is dialectical, it is both thesis and antithesis… It is no longer possible to find unified forms or consistent solutions that still incorporate everything in a single system." [42] In other words, what we confront is not a "total city" but a composite metropolis stratified by overlapping systems, rhythms, and values

Under this premise, conceiving the city as "layers" is not a rhetorical flourish but an epistemic necessity: different systems operate with their own logics and temporal frames, intersecting, overlapping, and often misaligning. The centre–periphery relation is no longer a one-way derivation; as Ungers points out, the crucial issue of the contemporary city "is not just the centre but even more the periphery, or rather the interaction between the centre and the periphery." [43] Urban development. Therefore, it is shaped less by a singular central

40. The section heading "City as Layer" alludes to Ungers's strategy of "the city as layer," explicitly set out in the essay "The Dialectic City." See Ungers & Vieths, *The Dialectic City* (Francisca Garvie trans., Skira, 1997), esp. pp. 18–22.

41. Quotation, Oswald Mathias Ungers, *The Dialectic City* (Francisca Garvie trans., Skira, 1997), p. 14.

42. Quotation, Oswald Mathias Ungers, *The Dialectic City* (Francisca Garvie trans., Skira, 1997), pp. 18.

43. Quotation, Oswald Mathias Ungers, "The Dialectic City," in *The Dialectic City* (Garvie trans., Skira, 1997), p. 18.

will radiating outward than by interactions among heterogeneous layers.

The cases in Section 1.3 substantiate this diagnosis. In Paris–Bercy, rail corridors and the ring expressway overlay between historic quarters and contemporary redevelopment, yielding structures that are juxtaposed rather than integrated. In Beijing's Andingmen area, the Second Ring Road retraces the old city wall to produce a new boundary, while hutongs to the south and gridded expansions to the north coexist over long durations, misaligned in time and scale. On Seoul's south bank, riverside expressways, river bridges, and two distinct housing-development logics operate side by side, generating contradictory development tempos. In Apulia, the seaside old towns of Polignano a Mare and Monopoli, an adjacent gridded expansion, and an outer belt of irregular large blocks are juxtaposed, whereas Conversano employs a ring of public spaces to mediate between old and new. Taken together, these globally distributed cases indicate that the city is better understood as an assemblage of layered systems than as a single blueprint capable of totalization.

Within this understanding, a robust urban structure does not require the exclusion of heterogeneity; on the contrary, Ungers insists that structural forms should be "not exclusive but inclusive, varied and as heterogeneous as possible." [44] The aim is not to dissolve contradictions but to render them legible, allowing differences to co-exist within the same city in ways that can be shared and understood. "City as Layer" thus becomes a more candid and effective lens for reading the city: we first acknowledge the real presence of multiple systems, and then examine where they intersect or misalign, and in what sequence they should be connected and coordinated.

44. Quotation, Oswald Mathias Ungers, "The Dialectic City," in *The Dialectic City*, trans. Francisca Garvie (Milan: Skira, 1997), p. 20.

Adopting the Strategy of the City as Layer

When City as Layer moves from a mode of understanding to a mode of strategy, the aim is not to reinvent an all-encompassing, unified system, but to learn to manage layers: to name with precision which layers are operative, assess their priorities and mutual effects, and, on that basis, decide what to preserve, emphasize, attenuate, or recompose. Ungers regards this as a method for translating "chaos" into "structure": treating the city as a complex structure composed of autonomous systemic layers; through the selective intensification and coordination of these layers, achieve a legible order without sacrificing heterogeneity. Unlike comprehensive leveling and unification, this approach substitutes delineation for flattening, uses juxtaposition to generate productive tensions, and makes contradictions operative rather than suppressing them.

At the strategic level, three points are pivotal. First, set goals by layer — for example, use accessibility, equity, and everyday usability as baseline metrics so that the expansion of one layer does not displace the others. Second, shape experiential interfaces where layers meet, enabling crossing, lingering, recognition, and narration, so that a "boundary" functions both as separation and as connection. Third, govern through time: employ phased flexibility and civic participation to allow the city, while retaining diversity, to evolve into a living entity with a clear structure and a grounded sense of place. Accordingly, design and governance cease to be a one-off fixing; they become the continuous orchestration — and calibration — of inter-layer relations.

More importantly, this strategy does not accommodate change at the expense of structure. Following Ungers, this is our methodological baseline: a layered city can remain open-ended, flexible, and resilient — adapting to shifting demands without sacrificing structure. In sum,

we understand the city through layers, explain its operations in the language of layers, and act with a layered strategy; we acknowledge, harness, and manage contradictions — creating structure through stratification and preserving complexity through structure. In this way, research method and design method are unified at the level of strategy.

Polignano a Mare

Urban context

Geographical and Territorial Setting

Polignano a Mare is a small coastal town on the Adriatic Sea, in the southern Italian region of Puglia and within the Province of Bari. It lies about 33 km south of Bari, between the coastal centres of Mola di Bari to the north and Monopoli to the south, while the historic hill town of Conversano is located a few kilometres inland. This position places Polignano at the contact between the coastal strip of the Terra di Bari and its agricultural hinterland, within a network of medium-size settlements that are closely connected by regional infrastructure, as illustrated in the multi-scalar location diagram (Fig. 1) .

The historic centre occupies a limestone promontory about 20–25 m above sea level, cut by ravines and bordered by a dense system of sea caves. Lama Monachile, the narrow valley immediately west of the old town, and Grotta Palazzese, a large cave beneath the southern cliff, are among the most notable formations. The town's white buildings appear to grow directly from the rock, creating a continuous

Fig.1 Location of Polignano a Mare at national, regional and provincial scales (Italy – Puglia – Province of Bari – Municipality of Polignano a Mare). Diagram by the author based on ISTAT administrative boundaries and regional cartography.

Fig.2 *Interior of the Grotta di Palazzo* (Grotta Palazzese) with a banquet scene. Engraving after Claude-Louis Châtelet, "Vuë intérieure de la même Grotte, appellée dans le Pays Grotta di Palazzo," in Jean-Claude Richard de Saint-Non, *Voyage pittoresque ou description des royaumes de Naples et de Sicile*, vol. 3 (Paris: Clousier, 1783).

Fig.3 *Aerial view of the historic centre of Polignano a Mare and the surrounding cliff*. Historical photograph, in *Le Regioni d'Italia: Puglia*, SAST digital collection, "Veduta aerea."

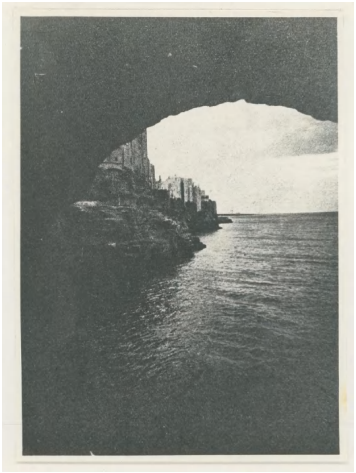


Fig.4 *View of the Polignano cliff and town from inside a coastal cave near Grotta Palazzese*. Historical photograph, in *Le Regioni d'Italia: Puglia*, SAST digital collection, "La scogliera vista dall'interno della Grotta Palazzese."

edge between built fabric and eroded coastline. This particular topography has long shaped the perception of Polignano a Mare: from eighteenth-century drawings to twentieth-century photographs, the town is consistently represented as a compact settlement suspended over the sea, as seen in the historical images reproduced in Figs. 2 – 5.[1] At a broader territorial scale, Polignano is aligned with a sequence of long-distance infrastructures. The Roman Via Traiana passed close to the present town, establishing an early longitudinal axis along the Adriatic coast. In the nineteenth century, the Adriatic Railway linked Bari to Lecce and integrated Polignano into the national rail network; the local station opened in 1865. During the twentieth century, the Strada Statale 16 "Adriatica" reinforced this corridor as a major vehicular route. These infrastructures—ancient road, railway and modern highway—have progressively guided the inland expansion of the town, which now stretches from the cliff towards the railway and the SS16. Their combined influence on the built fabric becomes

Fig.5 *Grotta Palazzese with terrace and balustrade on the cliff*. Historical photograph, in *Le Regioni d'Italia: Puglia* (Rome: Istituto Poligrafico dello Stato, mid-20th century), digital copy from Soprintendenza Archivistica e Bibliografica della Puglia, SAST collection, "Grotta Palazzese."

1. Filippo Franco Favale, *Le grotte di Polignano* (Manduria: Federazione Speleologica Pugliese, 1994); "Centro storico portuale, difensivo – Polignano a Mare," *Catalogo generale dei beni culturali*, Ministero della Cultura, accessed 13 November 2025.

particularly evident in the three-phase urban evolution diagrams (Figs. 6–8).[2]

Historical Background: A Concise Timeline

Although the origins of settlement in the area go back to pre-Roman times, most accounts describe Polignano a Mare as developing around a small port and road-station along the Adriatic route between Bari and Brindisi. Archaeological finds beneath the present historic centre indicate continuous occupation from the Hellenistic and Roman periods, when the promontory offered both a landing place and a defensible position, forming the earliest segment in the historical timeline (Fig. 9). [3]

2. Thomas Ashby, "The Via Traiana," *Journal of Roman Studies 6* (1916): 1–32; "Polignano a Mare Railway Station," Wikipedia, last modified 2024; "Strada statale 16 Adriatica," Wikipedia, last modified 2025.

3. Simonetta Menchelli, Katia Mannino and Maria Teresa Giannotta, "Polignano a Mare," in *Bibliografia topografica della colonizzazione greca in Italia e nelle isole tirreniche*, no. 14 (1996), 115–27; Carlo Cazzato, "Guida di Polignano a Mare," Comune di Polignano a Mare, 2015.

Fig.6 Phase I of urban evolution: historic cliff-top nucleus of Polignano a Mare before c. 1900. Urban form diagram by the author based on archival maps *Phase I of urban evolution: historic cliff-top nucleus of Polignano a Mare before c. 1900.* Urban form diagram by the author based on archival maps.

Fig.7 Phase II of urban evolution: first inland expansion before 1975, forming a regular grid around Via Pompeo Sarnelli and the railway corridor. Urban form diagram by the author based on archival maps and Viesti (1981).

Fig.8 Phase III of urban evolution: post-1975 peripheral growth along the SS16 expressway and local road junctions. Urban form diagram by the author based on planning documents and aerial imagery.

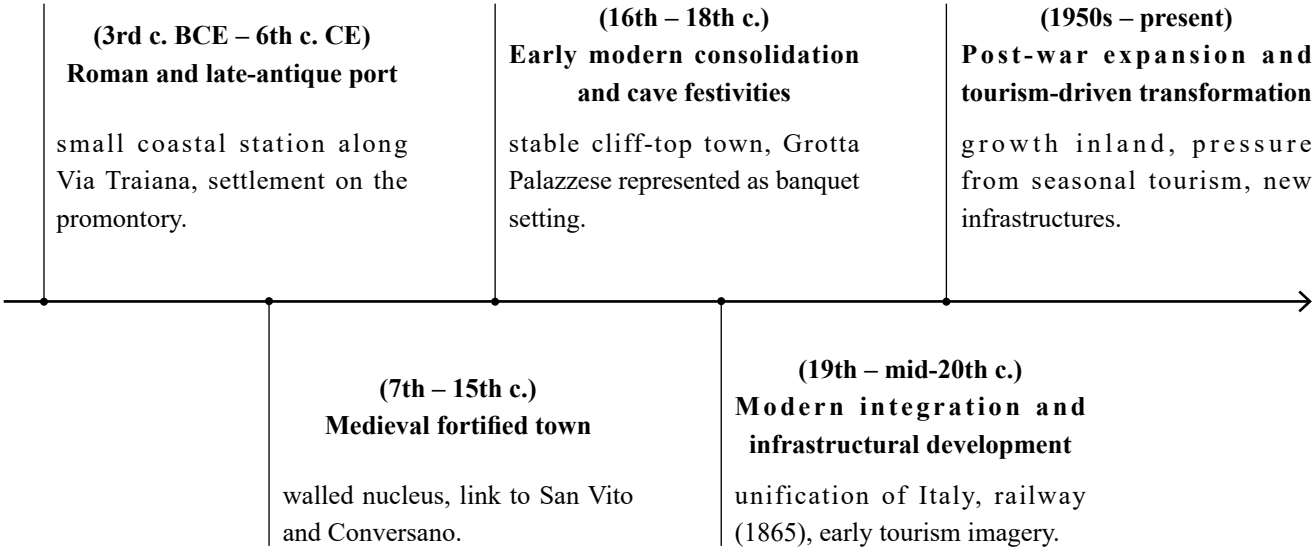


Fig.9 Timeline of the main historical phases in the development of Polignano a Mare, from the Roman settlement to the contemporary tourism-driven town. Diagram by the author based on archaeological and historical sources (Menchelli et al. 1996; Cazzato 2015; Saint-Non 1783; Touring Club Italiano 1937; Viesti 1981).

In the Middle Ages, under Byzantine, Norman and Angevin rule, Polignano became a fortified coastal town, enclosed by walls and towers and closely linked to nearby religious and feudal centres such as the Abbey of San Vito and Conversano. The early modern period saw the consolidation of this walled nucleus and the transformation of the caves into scenographic spaces for aristocratic events, as illustrated by the eighteenth-century representation of Grotta Palazzese in Saint-Non's *Voyage pittoresque* (Fig.9). [4]

From the nineteenth century onwards, infrastructural integration and new forms of mobility gradually altered the town's scale and economy. The railway enabled faster movement of agricultural products, seafood and people, while illustrated guides and regional monographs fixed the image of Polignano as a picturesque cliff-top town, captured in early photographs such as the aerial view and the sea-facing vistas (Figs. 3 – 5). After the Second World War, the combination of road accessibility, mass tourism and the growing appeal of the Adriatic coast generated increasing seasonal flows of

4. Jean-Claude Richard de Saint-Non, *Voyage pittoresque ou description des royaumes de Naples et de Sicile*, vol. 3 (Paris: Clousier, 1783).

visitors, adding pressure on the small historic centre and prompting new residential construction inland—the later segments of the historical timeline (Fig. 9). [5]

Phases of Urban Expansion and Morphological Transformation

The historical processes outlined above are clearly inscribed in the spatial structure of Polignano a Mare. On the basis of archival maps and fieldwork, three main phases of urban expansion can be distinguished. These phases are represented in a continuous sequence of diagrams (Figs. 6–8), which use the same base map and graphic code so that the growth of the town can be read at a glance, and are cross-referenced with detailed archival plans of the historic centre (Figs. 10–11).

Phase I – Historic cliff-top nucleus (before c. 1900).

The first phase corresponds to the compact historic centre located on the rocky promontory. The built fabric is dense and irregular, constrained by the line of the ancient walls and the ravines at Lama Monachile and on the southern edge. The archival plan *Ipotesi dell'evoluzione storica* from a thesis at the Politecnico di Torino distinguishes an "original nucleus," later infill, religious buildings and civil architecture, confirming that growth occurred mainly through internal densification rather than outward expansion (Fig. 10) .[6]

Phase II – First inland expansion before 1975.

The second phase is characterised by the formation of a regular grid immediately inland from the historic centre. New blocks align with the railway corridor and with Via Pompeo Sarnelli, which becomes the main axis linking the cliff-top town to emerging residential districts. The 1:2000 plan in the Politecnico archive already shows

Fig.10 *Historic centre of Polignano a Mare: hypothesis of historical evolution.* Archival drawing from Studio sul Centro Storico di Polignano a Mare, tesi di laurea by Gian Pio Zuccotti (supervisor), Politecnico di Torino, Facoltà di Architettura, 1967. Biblioteca Centrale di Architettura, Politecnico di Torino. Sheet titled *"Ipotesi dell'evoluzione storica"*, scale 1:500.

5. Touring Club Italiano, *Puglia, Lucania, Calabria*, vol. 8 (Milan: Bertieri, 1937); G. Viesti, *Polignano a Mare, centro storico e zona B – studi preliminari alla redazione dei nuovi strumenti urbanistici* (Polignano a Mare, 1981); Visit Puglia, "Visit Polignano a Mare: The Complete Guide."

6. *Studio sul Centro Storico di Polignano a Mare*, tesi di laurea in Architettura, Politecnico di Torino, Biblioteca Centrale di Architettura, undated.

Fig.11 *Urban plan of Polignano a Mare.* Archival drawing from Studio sul Centro Storico di Polignano a Mare, tesi di laurea by Gian Pio Zuccotti (supervisor), Politecnico di Torino, Facoltà di Architettura, 1967. Biblioteca Centrale di Architettura, Politecnico di Torino. General plan titled *"Il centro storico"*, scale 1:2000.

this grid largely built up, with public facilities and housing occupying what had previously been agricultural plots (Fig. 11). Local planning studies prepared around 1980 for the new *Piano Regolatore* refer to this compact zone as "zona B" [7], distinct from both the historic centre and the more recent peripheral areas, and this configuration is schematically represented in the Phase II diagram (Fig. 7).

Phase III – Post-1975 peripheral growth along infrastructure.

The third phase consists of more dispersed expansions realised from the mid-1970s onwards. New residential neighbourhoods and commercial strips extend further south and west, often following the junctions of the SS16 expressway and local roads. The grain becomes coarser, with larger plots and less continuous street fronts, while the railway line increasingly acts as a physical and psychological boundary between consolidated urban fabric and peripheral areas. These developments reflect broader patterns of suburbanisation along the Apulian coast and respond to both demographic growth and the

7. G. Viesti, *Polignano a Mare, centro storico e zona B – studi preliminari alla redazione dei nuovi strumenti urbanistici* (Polignano a Mare, 1981).

seasonal demand generated by tourism, as captured in the Phase III diagram (Fig. 8).[8]

Terrirorial Analysis

Urban Morphology and Land-Use Structure

The urban morphology of Polignano a Mare reveals a layered territorial structure shaped by successive historical phases and differentiated land-use patterns. The historic centre, located directly on the limestone cliffs, is characterised by a dense, irregular fabric with compact stone buildings arranged along narrow pedestrian alleys. This morphology reflects the pre-modern defensive logic of a fortified coastal settlement and its adaptation to the promontory's geomorphology. Beyond the historical nucleus, the first inland expansion introduced a more regular grid, with mixed-use blocks aligned along Via Pompeo Sarnelli, which gradually became the city's main commercial spine. Further south, the contemporary extensions display lower-density residential clusters, large-plot public services, and transport-related facilities near the railway corridor and the SS16. These peripheral districts reflect the functional zoning principles of the late twentieth century, separating residential areas from industrial and infrastructural strips while increasing urban reliance on motorised connectivity (Fig.12).[9]

8. "L/S Polignano a Mare (IT)," Europan 18 site brief, 2025; "Strada statale 16 Adriatica," Wikipedia.

9. ISPRA, *Consumo di Suolo in Italia 2023* (Rome: Istituto Superiore per la Protezione e la Ricerca Ambientale, 2023).

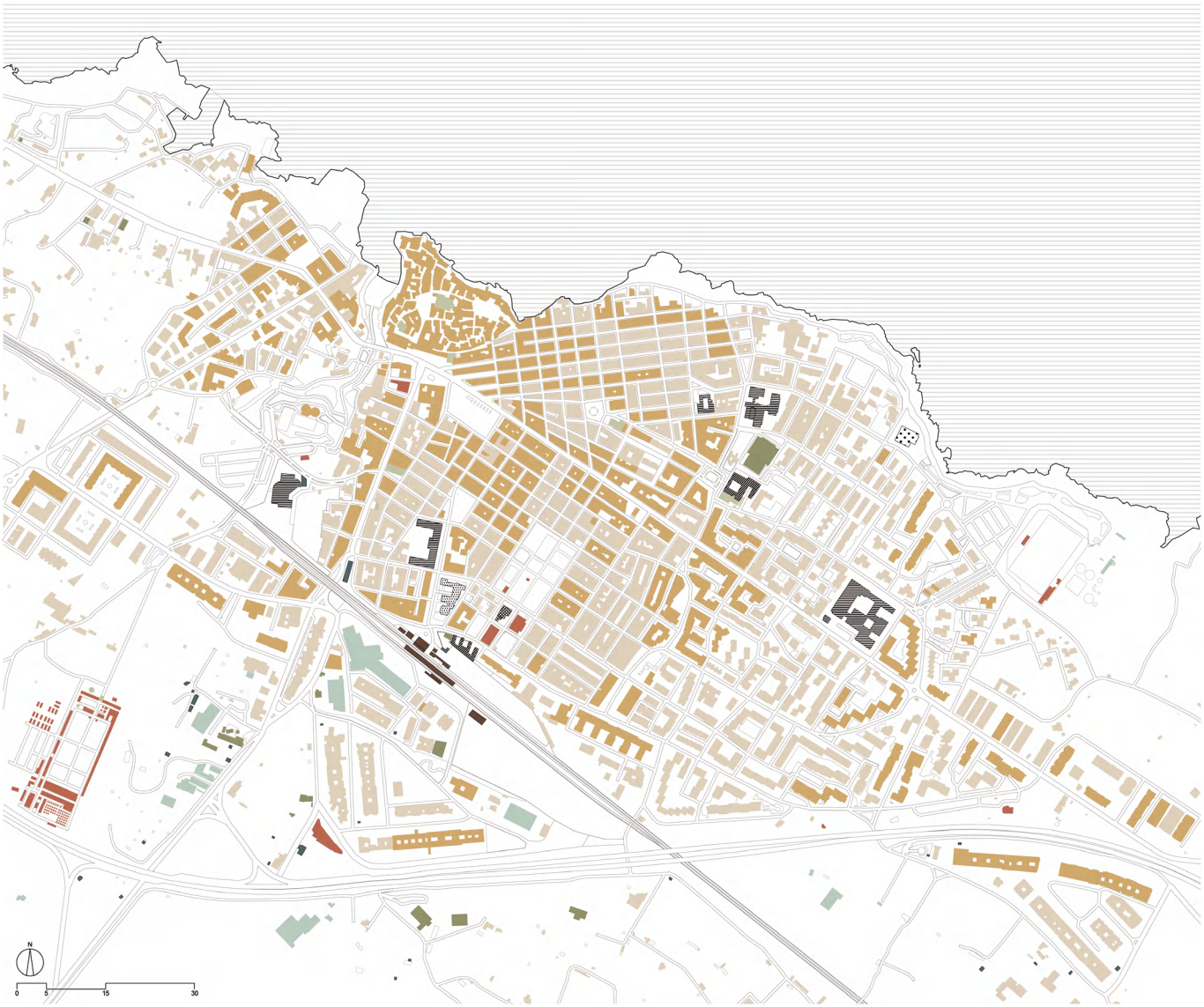


Fig.12 Building-type analysis of Polignano a Mare. Diagram by the author. Based on cadastral form, on-site surveys, and OpenStreetMap base data.

Public Space System and Open-Space Typologies

The public-space structure of Polignano a Mare is defined by a sequence of coastal, urban, and peripheral open-space typologies. Along the cliff edge, the seafront belvederes, terraces, and small piazze form a continuous linear public interface between the city and the Adriatic Sea, supporting pedestrian mobility and seasonal tourism. Within the inland grid, public spaces appear as dispersed nodes—neighbourhood piazze, pocket parks, and sports facilities—embedded in the residential fabric. These small-scale open spaces compensate for the overall scarcity of large urban parks within the city. In contrast, the southern periphery contains more extensive green areas, school grounds, and landscaped spaces created through post-war urban development. This differentiated system illustrates how topography, historical morphology, and functional zoning collectively shape the form and distribution of public space across the municipality (Fig.13).[10]

10. M. F. Favia, "Paesaggi costieri della Puglia: morfologie urbane e spazi pubblici," *Territorio 89* (2019): 78–89.

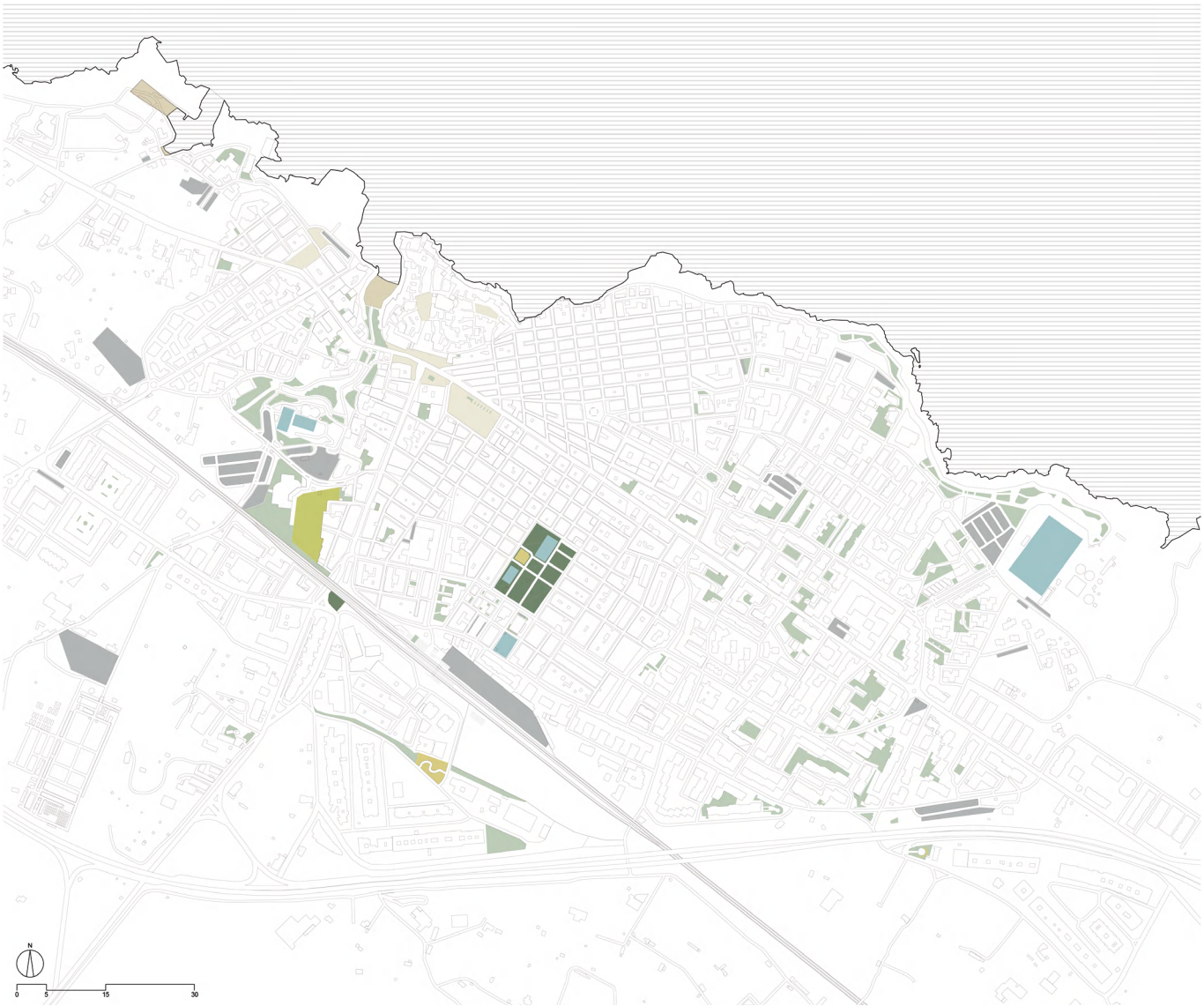


Fig.13 Public-space typology map of Polignano a Mare. Diagram by the author. Based on field observation, municipal open-space inventory, and OpenStreetMap.

Transportation Network and Territorial Connectivity

Polignano a Mare's territorial connectivity is structured by two primary infrastructural axes: the Adriatic Railway and the SS16 expressway. The railway, opened in 1865 as part of the regional Adriatic line, established the first high-capacity longitudinal connection along Puglia's coast, linking Polignano to Bari, Brindisi, and Lecce. Although initially a technical infrastructure, it progressively became a spatial boundary within the urban fabric, separating the historic and central districts from the later southern expansions. The SS16, constructed in 1928 and subsequently modernised, performs a complementary regional role as the main vehicular corridor along the Adriatic seaboard. Within the city, a hierarchical street system articulates the relationship between these two infrastructures and the internal grid: the historic core retains an organic pedestrian network, the early expansion follows a regular grid with a clear east–west orientation, while the peripheral districts are characterised by curvilinear streets, cul-de-sacs, and car-oriented intersections. Together, these elements produce a fragmented yet functionally interdependent urban mobility system shaped by historical layering and infrastructural modernisation (Fig.14).[11]

The analyses of land use, public space, and infrastructure reveal a territorial structure defined by three interrelated logics: the persistence of the cliff-top historic core, the planned grid of the early expansion, and the functional zoning of the contemporary periphery. These layers are bound together—and at times separated—by the railway and the SS16 corridor, which together constitute the main territorial armature of the city. Understanding these spatial logics is essential for interpreting Polignano a Mare's contemporary urban condition and for positioning the subsequent analysis of urban layers within a broader territorial framework.

11. "Adriatic Railway," Wikipedia, accessed 13 November 2025; "Strada statale 16 Adriatica," Wikipedia, accessed 13 November 2025.

Fig.14 Transport-and-road-network analysis of Polignano a Mare. Diagram by the author. Based on OpenStreetMap, on-site road surveys, and railway alignment tracing.

Diary

Day 1 — July 15, 2025: First Encounter with the City

We arrived in Polignano a Mare under a bright July sky, stepping out of the station with the intention of letting the city unfold through walking. As soon as we moved toward the southern side of the railway, the air became noticeably stiller. The streets were quiet, almost suspended, with few people in sight. The irregular layout and scattered buildings created a sense of looseness, an urban fabric that felt more residential, slower, and introverted.

Crossing back to the northern side, the transition was immediate and almost startling. Noise, movement, and human presence intensified around us. The grid-based streets opened clear lines of sight, and the urban rhythm quickened. Walking along Viale delle Rimembranze (Fig.15), the main axis connecting the station to the historic center, we felt a refreshing coolness under the continuous row of trees. The shade, combined with the soft breeze descending from the higher southern ground, created a surprisingly comfortable microclimate for a midsummer afternoon.

Entering the historic center (Fig.16), perched dramatically on the cliff (Fig.17), we were suddenly immersed in dense crowds and lively sounds. Narrow alleys pulsed with movement, visitors squeezing past each other, conversations echoing between stone walls, and sudden bursts of light where the passages opened onto small piazzas. The panoramic terraces were packed, each person searching for a view of the Adriatic.

At Lama Monachile (Fig.18), the beach was overflowing with activity: swimmers, families, cliff jumpers. The contrast between the chaotic liveliness of the coast and the compact medieval fabric was striking.

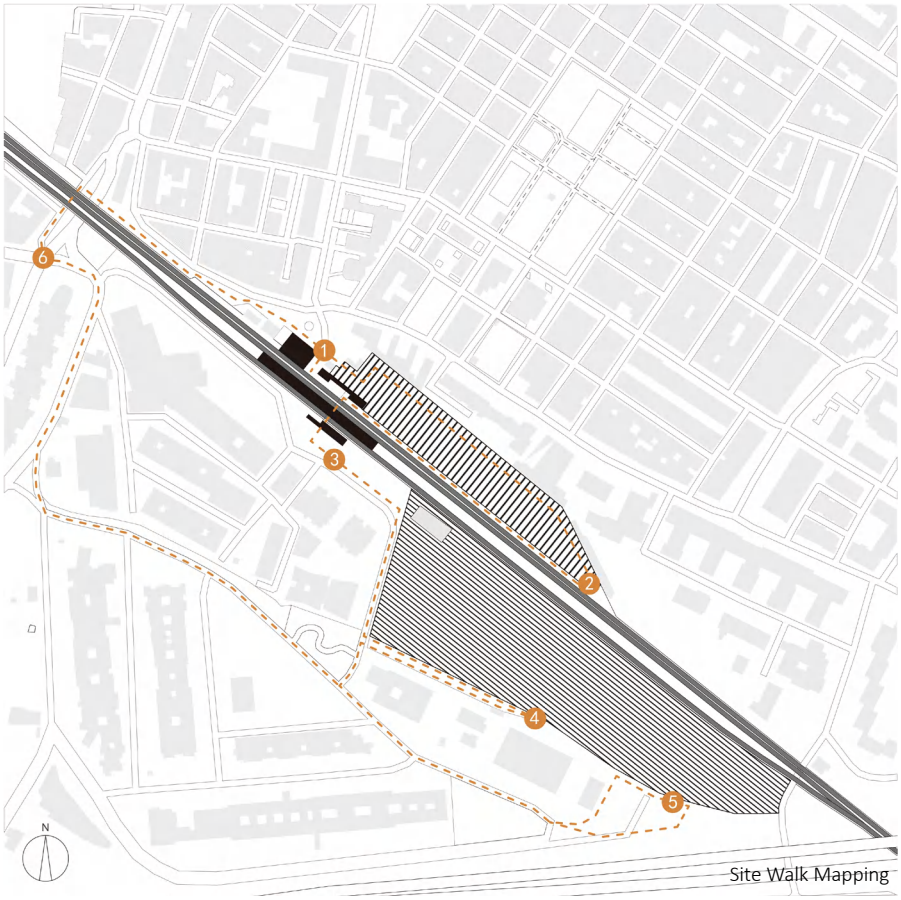
Fig.15 Viale delle Rimembranze

Fig.16 Historic center

Fig.17 Cliff

Fig.18 Lama Monachile

Day 2 — July 16, 2025: Along the Railway, Between Two Vacant Terrains



The second day began with mild air but harsh sunlight, the kind that makes every exposed surface feel hotter than the temperature suggests. We decided to focus entirely on the area around the train station and along both sides of the railway, trying to understand how the two large vacant terrains relate to the city and how they feel when experienced on foot.

Starting at the train station (node 1, Fig.19a/19b), we noticed construction work underway on the east side, where a new bicycle

Fig.19a

Fig.19b

Fig.20a

Fig.20b

parking shelter was being built. From here, we headed east and stepped into the rectangular open space on the north side of the tracks. Today it functions only as a parking lot, but the moment we entered, we felt the heat intensify, there were no trees, no shade, no wind-buffering structures. The ground was uneven, patches of loose gravel stirred up dust with each step, and the space lacked any form of public life. At the far eastern end (node 2, Fig.20a/20b), the emptiness became even more apparent. It felt like a leftover fragment rather than part of a living city.

We turned back along the platform edge, then crossed to the southern

Fig.21a

Fig.21b

Fig.22a

Fig.22b

side through the narrow underground passage. Emerging on the other end, we found ourselves again in a parking area (node 3, Fig.21a/21b), this time surrounded by aging industrial buildings. The atmosphere was nearly silent except for the occasional mechanical hum in the distance. Few people passed through, reinforcing the sense of isolation.

Continuing east, we reached the largest vacant terrain on the south side of the tracks, a sunken, expansive field filled with abandoned rail lines and rusted carriages. Because the topography slopes downward from south to north, the entire site felt like it sat “inside” the land,

Fig.23a

Fig.23b

Fig.24a

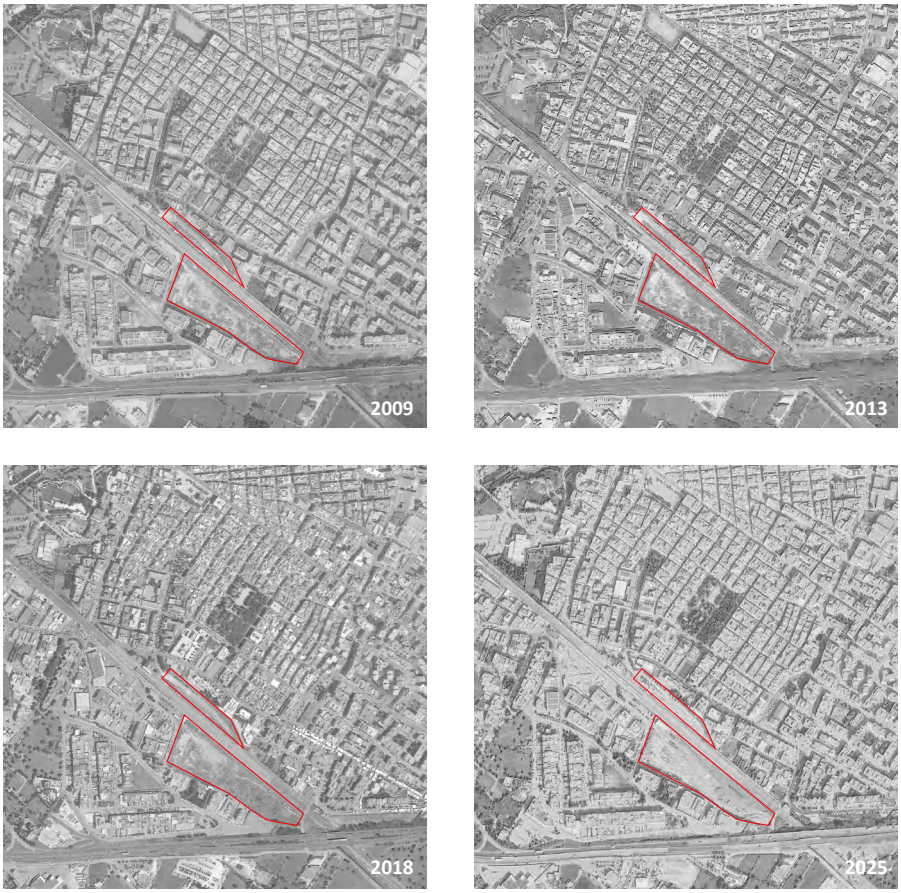
Fig.24b

almost sheltered yet exposed. At node 4 (Fig.22a/22b), a dead-end street overlooked the whole area. Standing there, we imagined the street extending further, its continuation could reconnect the fragmented edges and reactivate the land.

Further east near node 5 (Fig.23a/23b), another open area appeared. There were no parked cars, almost no people, just the constant roar of the SS16 expressway overhead. Despite the noise, we felt that this space held potential, if connected to the larger vacant zone, it could form a continuous public landscape.

Finally, heading west, we reached one of the few crossings linking

Fig.25 Google Earth's historical imagery in Polignano a Mare



the two sides of the railway: an under-bridge passage at node 6 (Fig.24a/24b). The space was chaotic, traffic movements overlapped, the geometry of the roads was confusing, and the echoing sound of vehicles made walking uncomfortable.

Back at our workspace, we reviewed Google Earth's historical imagery (Fig.25) and discovered that these two major vacant lands had remained unchanged for nearly two decades, idle, fragmented, and suspended between abandonment and possibility.

This walk made us more aware of the railway's dual role: a physical boundary, and at the same time, the center of a vast latent landscape waiting for reinterpretation.

Day 3 — July 17, 2025: Through Neighborhoods, Parks, and the Northern Grid

The heat intensified on our third day, and although the air felt dry, the sun pressed heavily on our shoulders. As usual, we began at the train station and headed north. Very quickly, we reached a small seafood market, where the smell of the sea mixed with fresh produce. On its west side, a quiet, almost hidden square opened up. We imagined that this space could someday connect meaningfully to the vacant land along the railway's northern edge.

Just beyond the square stood a compact residential cluster composed

Fig.26a

Fig.26b

Fig.27a

Fig.27b

of four small buildings arranged loosely around shared open spaces (node 1, Fig.25a/25b). The irregular layout created intimate corners, shaded passages, and pockets of semi-public life, a gentle contrast to the more rigid grid further north.

We moved on toward the Parco Giochi Pinocchio (node 2, Fig.26a/26b), where dense trees offered welcome relief from the heat. Inside, gardens, sports courts, and children's play areas overlapped in a lively mix of activities, making the park one of the most socially vibrant nodes we had encountered so far.

Continuing through the grid, we reached Via Pompeo Sarnelli (node 3,

Fig.28a

Fig.28b

Fig.29a

Fig.29b

Fig.27a/27b), a major east–west artery. Traffic grew heavier, and the street life intensified. The geometry of the grid also revealed glimpses of the sea, narrow corridors of blue framed between tall façades.

As we followed the slope northward, the scent of salt air became stronger. At node 4 (Fig.28a/28b), a cliffside viewpoint opened abruptly, offering a dramatic view of the stone buildings rising in layers above the rocks.

Turning southwest, we reached Piazza Aldo Moro (node 5, Fig.29a/29b), a calmer urban pause where cafés spilled onto the plaza. A few blocks farther, Piazzetta di Padre Pio (node 6, Fig.30a/30

Fig.30a

Fig.30b

Fig.31a

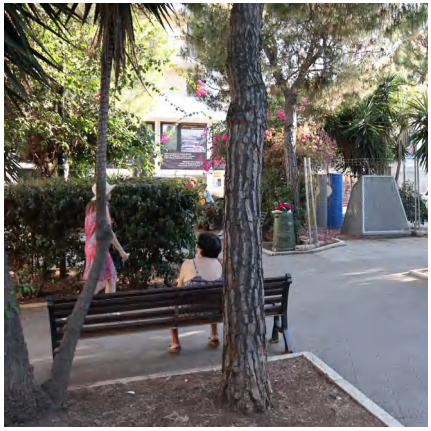


Fig.31b

b) provided an even more intimate setting, sculptures, flowers, and residents resting peacefully in the shade.

We ended the day by descending along the tree-lined Viale delle Rimembranze, returning slowly to the station as the heat finally began to fade.

Day 4 — July 17, 2025: Inside the historic centre, Between Stone, Shadows, and Sea

We enterd the historic center from the eastern edge, we felt an immediate and almost visceral shift: the regularity of the surrounding grid dissolved, giving way to a labyrinth of narrow, winding alleys framed by tightly packed three-storey stone buildings. Even before arriving at any major square, the density of people, the overlapping footsteps, and the interplay of shadows announced that we had stepped into a different spatial world.

Our first stop was Piazza Dei Serafini (node 1, Fig.32a/32b), a

Fig.32a

Fig.32b

Fig.33a

Fig.33b

compact square shaped by stepped seating, long benches, and a few scattered café tables. Its intimate scale invited people to pause, talk, and shelter in the shade. The surrounding façades, small in width but tall in vertical proportion, created an almost room-like enclosure. We found ourselves slowing down, observing the textures of stone, the narrow balconies, and the constant flow of residents and visitors threading through the space.

Continuing westward through twisting alleys, we reached Piazza Vittorio Emanuele II (node 3, Fig.33a/33b), the historic centre's central stage. The space felt expansive compared to the surrounding

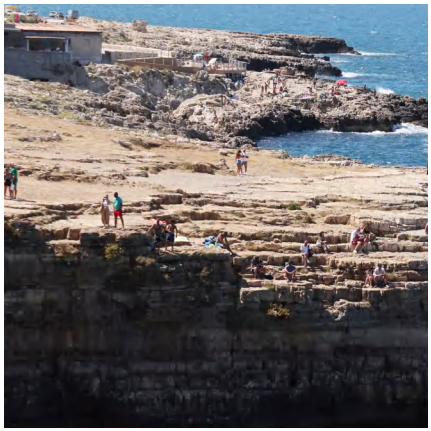


Fig.34a

Fig.34b

Fig.35a

Fig.35b

streets, yet crowded enough to feel intensely alive. Café terraces spilled outward, creating a circle of activity around the square. On the eastern side stood the Church of Saint Mary of the Assumption, its weighty stone presence grounding the space with a sense of permanence and rituality.

A short alley to the north opened dramatically onto a cliffside viewpoint (node 2, Fig.34a/34b). Here, the sound of the sea rose up from below, and the city's signature landscape unfolded: rugged cliffs, stratified rocks, and the sheltered inlet of Lama Monachile. The contrast between the tight medieval fabric and the sudden openness

Fig.36a

Fig.36b

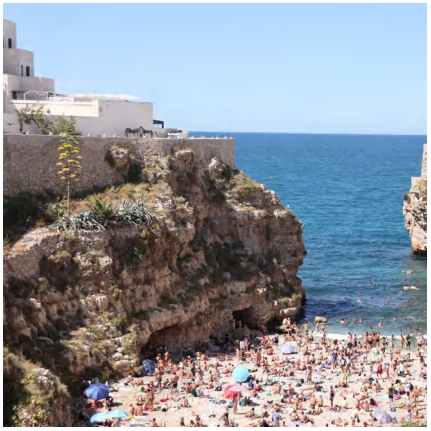


Fig.37a

Fig.37b

of the horizon was striking.

Moving south, we reached the southern gate (node 4, Fig.35a/35b), marked by a ceremonial stone arch. Rows of trees and shaded benches made it one of the most comfortable resting spots in the historic centre, with people taking refuge from the sun.

Finally, after crossing the stone arch bridge (node 5, Fig.36a/36b), a perfect balcony over the gorge, we descended toward Lama Monachile beach (node 6, Fig.37a/37b), where swimmers, sunbathers, and cliff-jumpers animated the dramatic coastal setting that has become iconic each summer.

Day 5 — July 17, 2025: Reading the Architectural Language of Polignano a Mare

The sky was clear again today, the dry Puglian air carrying that familiar Mediterranean sharpness. We spent the whole day walking slowly through the city, trying to understand its architectural rhythm by comparing the histroric centre, the northern grid, and the southern irregular district.

The histroric centre felt tight and intimate, with 2–3-storey stone houses squeezed along narrow lanes (Fig.38a/38b). North of the railway, buildings grew slightly taller and more regular, fitting the

Fig.38a

Fig.38b

Fig.39

Fig.40

grid (Fig.39). South of the tracks, everything opened up, looser blocks, newer apartments, and a sense of distance from tradition (Fig.40).

In the histroric centre, we touched limestone walls worn smooth by time (Fig41). North of the tracks, stone mixed with plaster and bits of brick (Fig42). But the south felt entirely different, concrete, tiles, and aluminum, cool to the touch, industrial, and far from the warmth of older materials (Fig43).

The histroric centre glowed in whitewashed tones, catching the sun and throwing strong shadows. The northern grid shifted to peach, light yellow, and gentle earth colors. Farther south, everything turned pale and muted, white, gray, beige—clean but almost too uniform under the bright sky.

Histroric centre openings were tiny—arched doors, wooden shutters, carved frames (Fig44). In the north, we found a mix: some traditional wood, some fresh PVC replacements (Fig45). But the south embraced standardization, big glass panels, aluminum frames, sharp lines with little ornament (Fig46).

Walking through these three zones in a single day made the city's layers tangible. Polignano a Mare revealed itself not only through streets and views, but through textures, shadows, and the quiet stories carried by its facades.

Fig.41

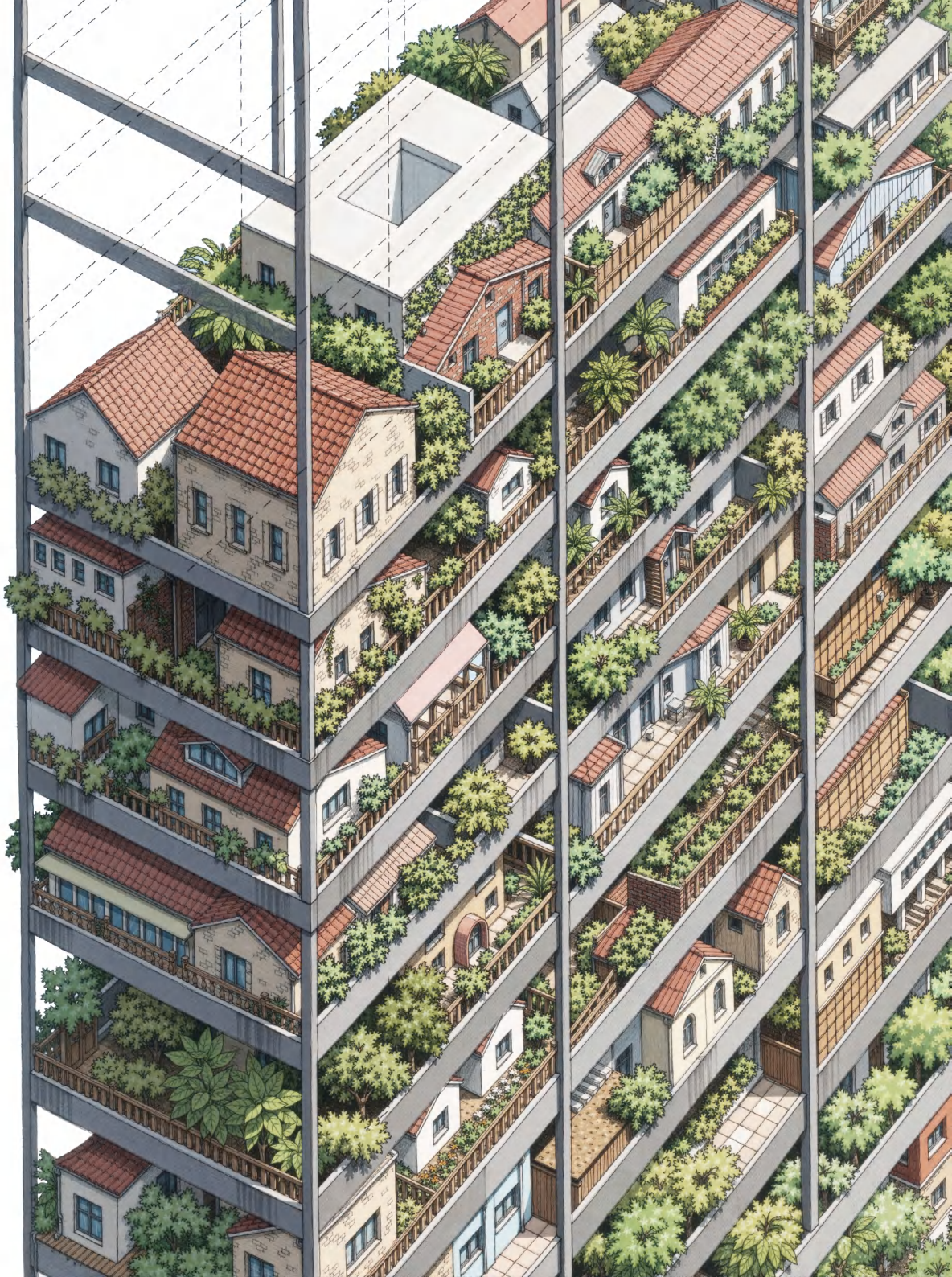
Fig.42

Fig.43

Fig.44

Fig.45

Fig.46



Reference

Urban-scale References

Context of urban-scale references

The three selected urban-scale references demonstrate how contemporary cities can transform infrastructural landscapes into active and socially meaningful environments. Although each operates within a different territorial setting, they collectively show how mobility systems, residual lands, and historical structures can be reorganized into layered public realms.

The Polcevera Park in Genoa reveals how a post-industrial valley shaped by rail lines and highways can be reimagined as an ecological and civic system, where infrastructure supports new forms of collective life. The Sydney Fish Market illustrates how a metropolitan node can integrate transport networks, waterfront edges, and everyday uses, creating a complex environment where work, leisure, and local identity intersect. The Paris ring-road transformation shows how infrastructural barriers can be softened through landscape continuity, reconnecting fragmented neighbourhoods into a coherent fabric.

Together, these cases demonstrate how memory, dwelling, and infrastructure can overlap at the city scale. Most importantly, they offer strategic insight for Polignano a Mare: revealing how infrastructural edges may become opportunities for connection, how public space can emerge from neglected land, and how a layered understanding of the city can guide both analysis and design.

1. The Polcevera Park and the Red Circle (Genoa), Stefano Boeri Architetti

Fig.1 Aerial view of the Polcevera Valley before the project, showing the infrastructural corridor of railways, highways, and industrial grounds. Source: *Stefano Boeri Architetti, Il Parco del Polcevera e il Cerchio Rosso,* 2019.

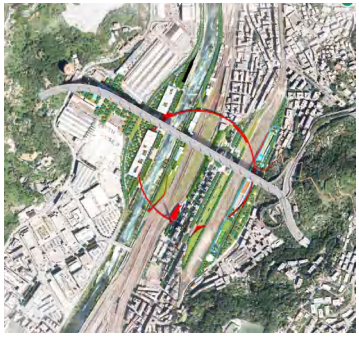


Fig.2 Concept diagram of the Red Circle, proposed as a pedestrian and cycling link reconnecting both sides of the Polcevera Valley. Source: *Stefano Boeri Architetti,* 2019.

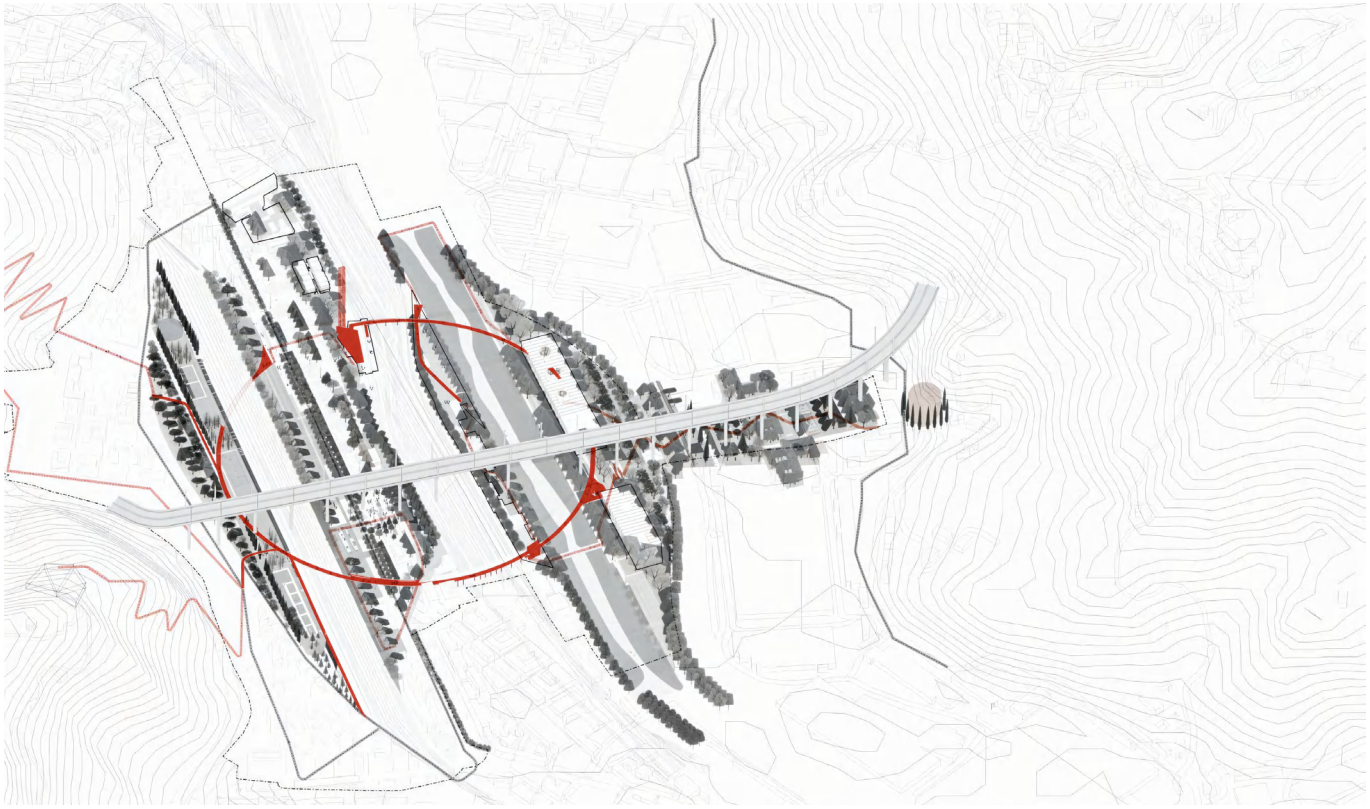
The Polcevera Park and the Red Circle is Stefano Boeri Architetti's proposal for regenerating the Polcevera Valley after the collapse of the Morandi Bridge. Rather than treating the area as an infrastructural void, the project reframes it as an urban landscape where mobility, ecology, memory, and daily life can coexist. Its central element, the Red Circle, is conceived as a large-scale pedestrian and cycling ring that bridges fragmented districts and symbolically embraces the site of the tragedy. It functions not only as a connector but also as a memorial, linking past events with the city's future development. [1]

From the perspective of memory, the project incorporates commemorative landscapes and botanical zones that reinterpret the trauma of the site as a shared civic narrative. In terms of dwelling, the proposal introduces new public spaces, community gardens, and mixed-use areas that transform previous infrastructural edges into settings for everyday social life. Regarding infrastructure, the design reorganizes the complex layers of rail lines, highways, and industrial grounds, turning them into a structural framework for ecological corridors and pedestrian mobility.

Seen through the lens of "City as Layer", the project operates by overlapping ecological, infrastructural, social, and historical layers rather than prioritizing a single urban logic. This layered approach resonates strongly with the thesis methodology, demonstrating how cities shaped by fragmentation can be reconnected through multi-scalar interventions that acknowledge complexity rather than erase it. (Fig.1,Fig.2,Fig.3)

1. *Stefano Boeri Architetti, Il Parco del Polcevera e il Cerchio Rosso, Competition Book, 2019.*

Fig.3 Axonometric masterplan illustrating the Red Circle and the system of botanical park, paths, and mixed-use interventions. Source: *Stefano Boeri Architetti,* 2019.



2. Sydney Fish Market(Sydney), 3XN

The New Sydney Fish Market by 3XN is conceived as a major civic and infrastructural project along Sydney's Blackwattle Bay. The proposal transforms a previously industrial waterfront—characterized by fragmented access, isolated operational zones, and limited public life—into a continuous and inclusive urban landscape. Instead of treating the market as a standalone building, the project positions it as an active mediator between city, water, and community. A defining aspect of the project is its ability to preserve and reinterpret the historical identity of Sydney's working harbour.

The design maintains visibility of fishing operations, loading activities, and waterfront rituals, ensuring that the cultural memory of the traditional fish market remains legible in a contemporary architectural form. This relationship between past and present is further supported by the open, porous structure that recalls the spatial atmosphere of older public markets, where commerce, movement, and social exchange are interwoven.[2]

Equally important is the project's sensitivity to everyday inhabitation. The elevated timber promenade, generous public terraces, shaded seating platforms, and access to water-level spaces create a setting where multiple communities—local residents, workers, visitors, and wholesale customers—can occupy the site simultaneously. This multi-user coexistence is central to the market's spatial logic, framing it as a place of informal dwelling in the urban sense: a site for routine encounters, leisurely activities, and collective presence along the waterfront. This quality is highlighted in the project's diagrams showing overlapping spheres of user movement and influence (Fig.5).

The infrastructural dimension of the project extends beyond circulation improvements. The market becomes a hinge within the city's wider mobility system, connected to light rail, ferry

2. 3XN. *New Sydney Fish Market – Stage 1 Concept Proposal Design Report*. Infrastructure NSW, 2017.

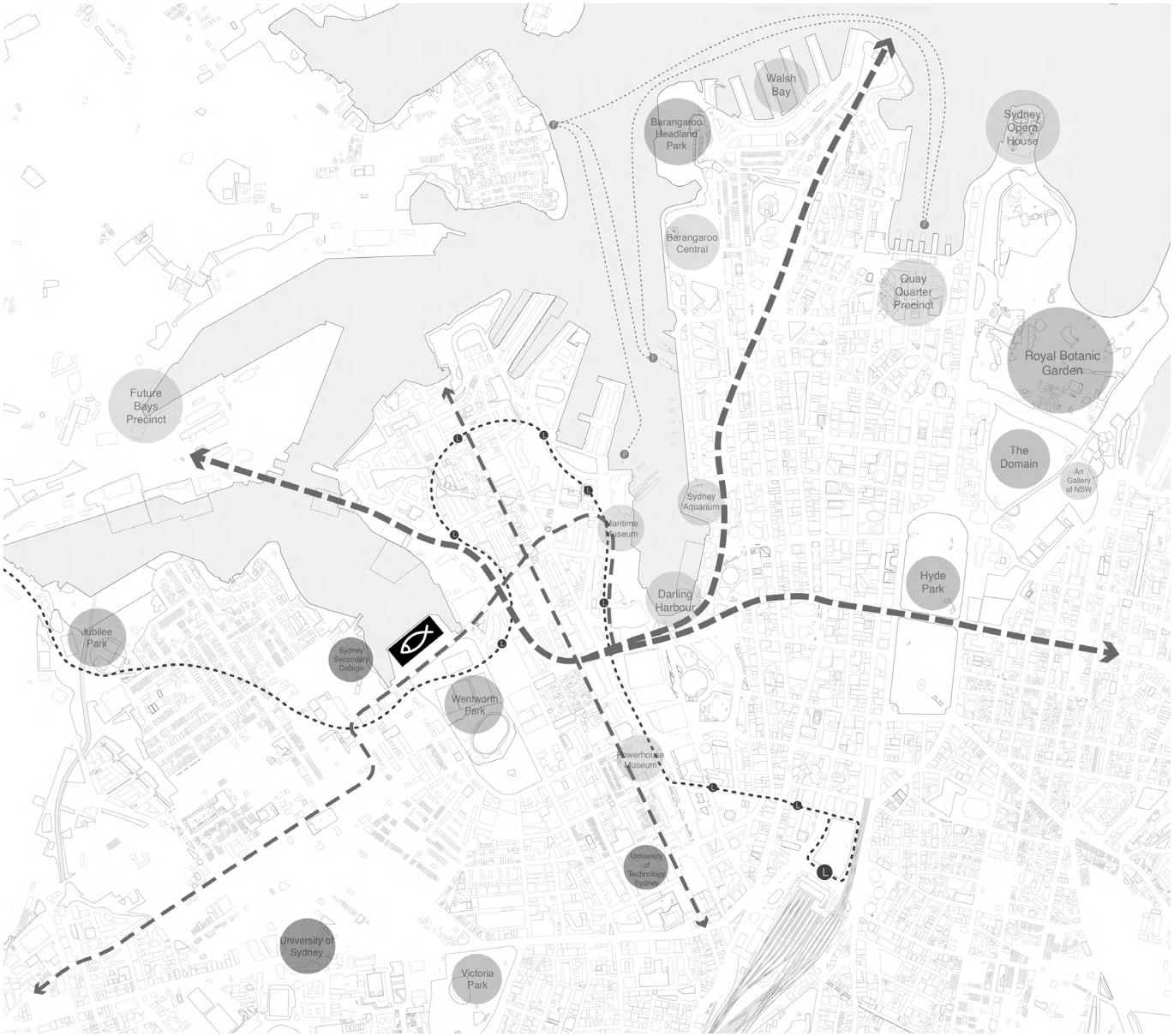


Fig.4 Urban connectivity diagram of the New Sydney Fish Market, showing links to cultural, institutional and green public spaces. Redrawn by the author based on 3XN, *Stage 1 Concept Proposal Design Report.*

routes, pedestrian paths, and key cultural destinations across the harbour (Fig.4). By integrating public mobility, logistics, and waterfront ecology into a single spatial framework, the design transforms an infrastructural edge into a connective urban interface.

When interpreted through the lens of “City as Layer,” the New Sydney Fish Market reveals a complex yet coherent layering of ecological renewal, cultural continuity, public life, and infrastructural performance. Rather than prioritizing one dimension over another, the project demonstrates how large-scale public developments can work across temporal, spatial, and social layers simultaneously. This layered condition allows the market to function not only as a destination, but as a catalytic structure capable of reorganizing and enriching the surrounding urban territory.

Fig.5 User-group relational diagram illustrating spatial reach of different communities around the Fish Market. Redrawn by the author based on 3XN, *Stage 1 Concept Proposal Design Report*.

3. Paris Ring Road Case Study — Anna Marly Garden

The Anna Marly Garden, designed by the landscape atelier Arpentère, is a significant example of how the Boulevard Périphérique—Paris's most emblematic infrastructural boundary—can be transformed through layered spatial design. The project covers approximately 13,000 m², including 6,000 m² located directly above the motorway on a concrete slab. As Arpentère describes, the design "reclaims more than 6,000 m² of surface above the périphérique through a planted deck supported by a multilayer soil system." [3]

Rather than concealing the infrastructure, the project builds upon it, turning an inhospitable edge condition into a public realm that reconnects Paris with its suburbs. The garden incorporates moorland-inspired vegetation adapted to dry soils, a drainage and substrate system suited for lightweight decks, and a sequence of public spaces including play areas, gardens, and informal gathering spots. This composition establishes a new layer of urban life directly atop a previously divisive mobility corridor. (Fig.6)

The project also reframes the historical and cultural identity of the ring road. Long understood as a spatial and social boundary separating Paris from its banlieues, the Périphérique is reimagined as a structural base that can support contemporary forms of civic use. In this sense, the intervention works with urban memory not by referencing monumental history, but by transforming a symbol of separation into a platform for shared public life.

The design encourages new modes of urban dwelling in the broad sense—daily activities, leisure, social encounters, and the rhythms of collective use. Benches, shaded edges, gardens, and open lawns all offer opportunities for slow, inhabitable experiences on top of an otherwise fast and noisy piece of infrastructure.

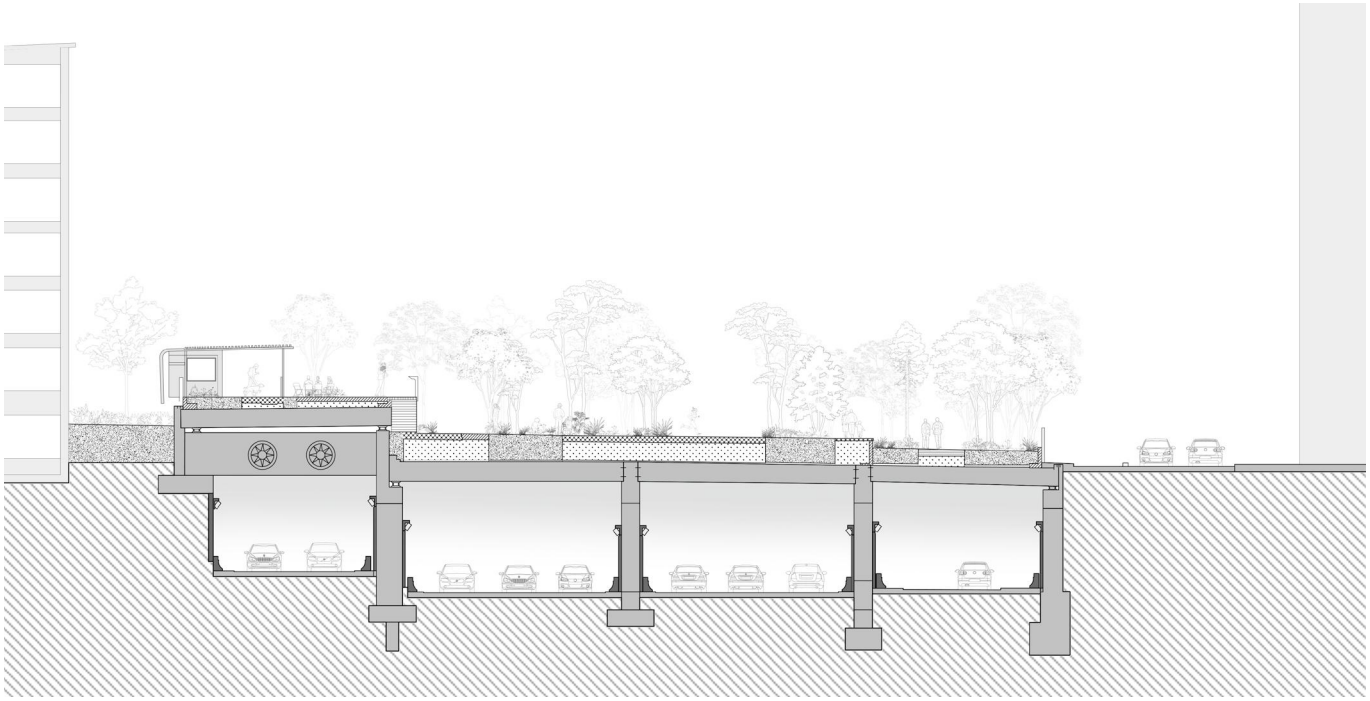
Finally, the infrastructural layer remains present yet re-coded. The

3. Arpentère, "Anna Marly Garden," *Landezine*, accessed 15 February 2026, https://landezine.com/anna-marly-garden-by-arpentere/

motorway continues to operate below, but its meaning in the urban system is shifted: it becomes one layer among many rather than a dominant boundary. Through this approach, the garden demonstrates how infrastructural landscapes can be reintegrated into the wider city through vertical layering rather than horizontal expansion.

Seen through the lens of “City as Layer,” the Anna Marly Garden illustrates how ecological, social, and infrastructural layers can converge without erasure. It offers a transferable strategy for cities seeking to transform inherited infrastructural barriers into inhabitable, connective, and ecologically meaningful urban spaces.

Fig.6 Section of the Anna Marly Garden showing the structural deck over the Boulevard Périphérique and the layered landscape above. Redrawn by the author based on Arpentère project documentation.



Architectural-scale References

Context of Architecture-scale references

The architectural-scale references explored in this chapter focus on projects in which dwelling is understood not as a static architectural product but as a temporal, adaptive process shaped by inhabitants, social practices, and long-term transformation. Unlike the urban-scale cases that address collective systems and territorial structures, these architectural precedents operate at the scale of the home, the cluster, and the micro-community—where memory and dwelling become deeply intertwined through everyday use, incremental change, and lived experience.

Across the three selected cases, dwelling is treated as an open framework rather than a predefined form. Frei Otto's Eco-house experiments propose light, flexible structures capable of accommodating shifting domestic patterns, seasonal variation, and future reconfiguration. Here, dwelling emerges as a negotiation between environmental performance and human agency, revealing how adaptable spatial systems can host multiple layers of life over time. The house becomes a structure that anticipates change rather than resisting it.

PREVI Lima radicalizes this idea by embedding growth directly into the project's DNA. Instead of completed units, families received structural "support systems" designed to evolve according to their needs, economic possibilities, and cultural habits. Over decades, the neighborhood transformed into a living record of individual trajectories and collective aspirations. Memory here is neither monumental nor curated; it is produced through inhabitation itself. PREVI demonstrates how domestic environments accumulate meaning through use, becoming layered archives of social and material history.

Colletta di Castelbianco extends the reflection to historical contexts, showing how restoration and contemporary dwelling can coexist through careful negotiation with pre-existing spatial logics. De Carlo's approach preserves the village's relational patterns—routes, thresholds, internal passages—while enabling new forms of digital-age inhabitation. Rather than treating history as fixed, the project reactivates latent spatial memories, allowing old and new layers to cohabit within the same architectural fabric.

Together, these cases show how architectural-scale design can give form to temporal, cultural, and social layers that define dwelling. They reveal environments where memory is continuously produced and reinterpreted, and where flexibility, continuity, and inhabitation intertwine. Positioned within the broader framework of "City as Layer," these precedents offer methodological insight into designing for coexistence across time—supporting spaces that evolve, accumulate meaning, and remain open to future transformation.

1. Eco-house(Berlin), Frei Otto

Frei Otto's Eco-house experiments in Berlin redefined housing as an adaptive and participatory environment rather than a finished architectural product. Developed through lightweight structures and open modular frameworks, the project enabled residents to expand, modify, or reorganize their living spaces over time. In this sense, the Eco-house frames dwelling as a continual process shaped by everyday needs, social rhythms, and personal expression.

Memory within the Eco-house emerges not through historical reference but through lived accumulation. As users build, alter, and maintain their units, the architecture records traces of occupation and adaptation. This produces a form of everyday memory, embedded in the incremental growth of the dwelling rather than in fixed monumental form.

The project strongly resonates with the logic of "City as Layer." Its structural frame functions as a stable infrastructural layer, while the inhabitable modules operate as a flexible dwelling layer capable of absorbing change. Shared gardens, circulation

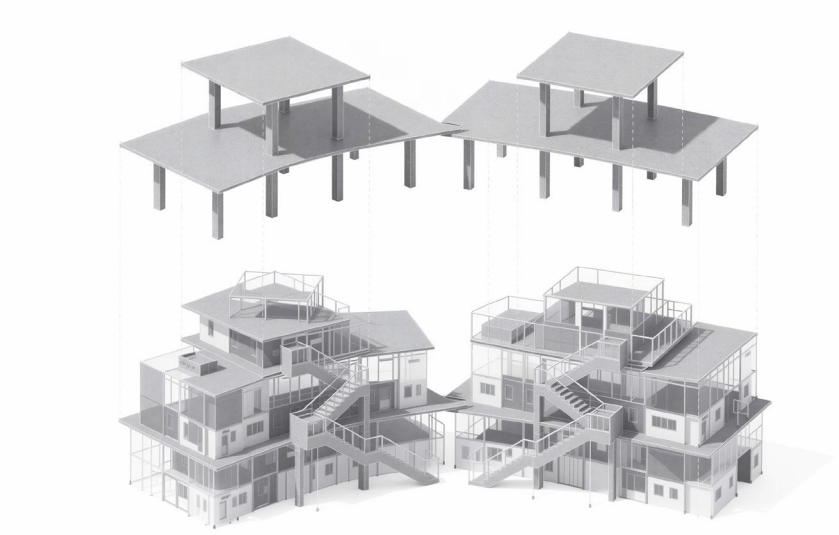


Fig.7 Exploded structural axonometric of the Eco-house, Berlin. Redrawn by the author based on historical documentation of Frei Otto's experimental housing research (1960s–1970s).

paths, and collective decision-making introduce a social layer that supports forms of community life. These overlapping layers demonstrate how architecture can accommodate temporal complexity and user agency without losing coherence.

As a reference for Polignano a Mare, the Eco-house suggests how new development can remain open-ended, allowing residents to co-produce their environment while embedding memory through daily inhabitation. Its layered organization and adaptable logic provide a model for reconciling permanence and change within contemporary urban living. (Fig.7,Fig.8)

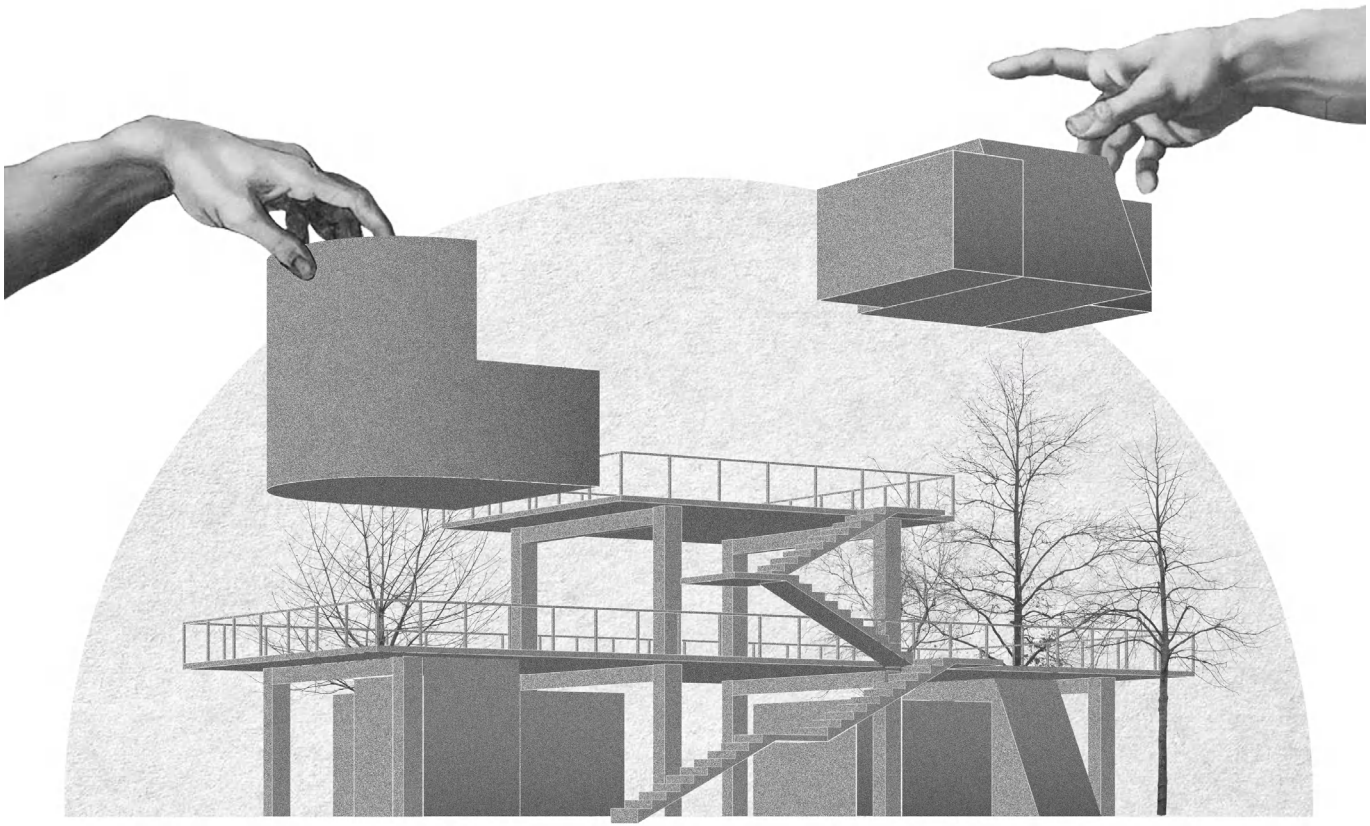


Fig.8 Conceptual diagram interpreting modular living units and spatial adaptability. Author's drawing, inspired by Frei Otto's principles of lightweight structures and user-generated dwelling patterns.

2. PREVI Lima (Lima)

Kiyonori Kikutake, Kisho Kurokawa, Fumihiko Maki (Japan)*; *James Stirling (United Kingdom); Esquerra, Sáenz, Samper, Urdaneta (Venezuela); Atelier 5 (Switzerland); Atelier 5, second team (Switzerland); Aldo van Eyck (Netherlands); Toivo Korhonen (Finland); Knud Svenssons (Denmark); Crousse, Páez, Pérez-León (Peru); Christopher Alexander (United States / United Kingdom); Miro-Quesada, Núñez, Williams (Peru); Llanos, Mazzarri (Peru); Montagne Morales (Peru); Charles Correa (India).

PREVI Lima, conceived in the late 1960s as an experimental housing project by the Peruvian government and the United Nations, tested how low-rise, high-density neighborhoods could grow through user participation. Instead of delivering finished houses, the project offered structural "frameworks" that families could gradually complete and modify, positioning dwelling as an evolving practice shaped by everyday decisions.

Over the decades, the neighborhood became a living archive of incremental additions and family-specific transformations. These

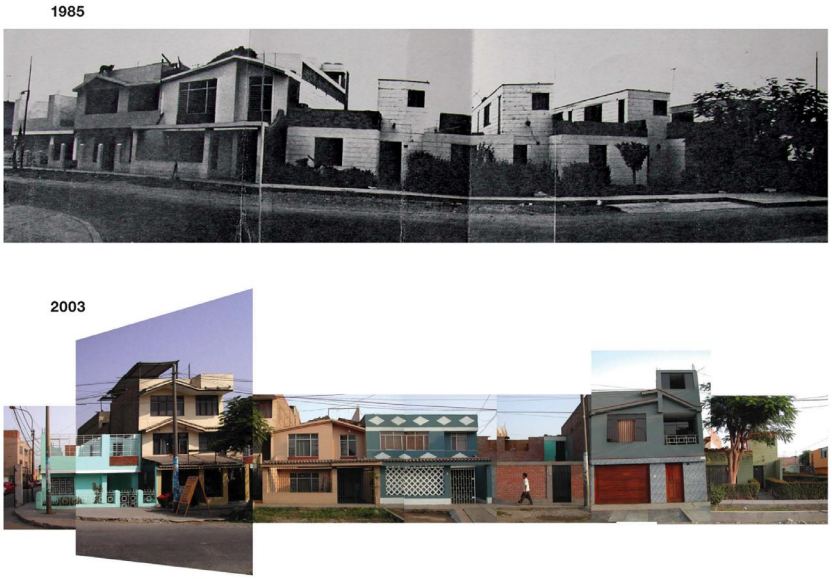


Fig.9 Housing group by Kikutake, Maki and Kurokawa in 1985 and 2003. Source: *Time Builds! The Experimental Housing Project (PREVI), Lima: Genesis and Outcome* (GG, 2008).

accumulated changes show how memory emerges not only through heritage or monuments but also through the daily inscription of life onto the built environment. PREVI's fabric records individual and collective aspirations—an urban memory produced through inhabitation.

Infrastructure played a quieter but essential role: the initial modules, circulation geometry, and shared courtyards provided a stable foundation that supported continuous adaptation without collapsing into disorder. This interplay between fixed structure and open-ended growth anticipates the logic of "City as Layer," where temporal, social, and material strata overlap to form a coherent yet dynamic environment.

As a reference, PREVI demonstrates how flexible frameworks can empower communities, how dwelling gains meaning through time, and how cities may evolve through layered processes rather than top-down imposition. Its long-term transformations offer insight into designing for coexistence, resilience, and the productive tension between permanence and change. （Fig 9-11）

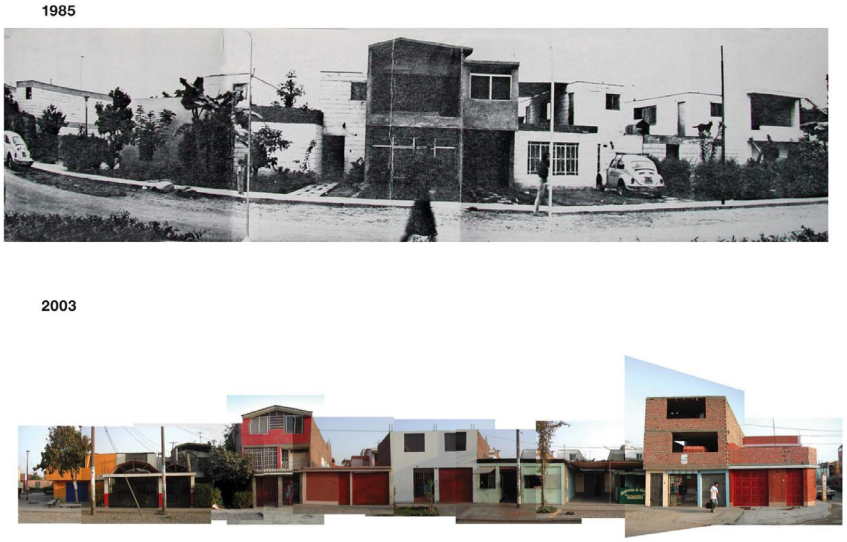
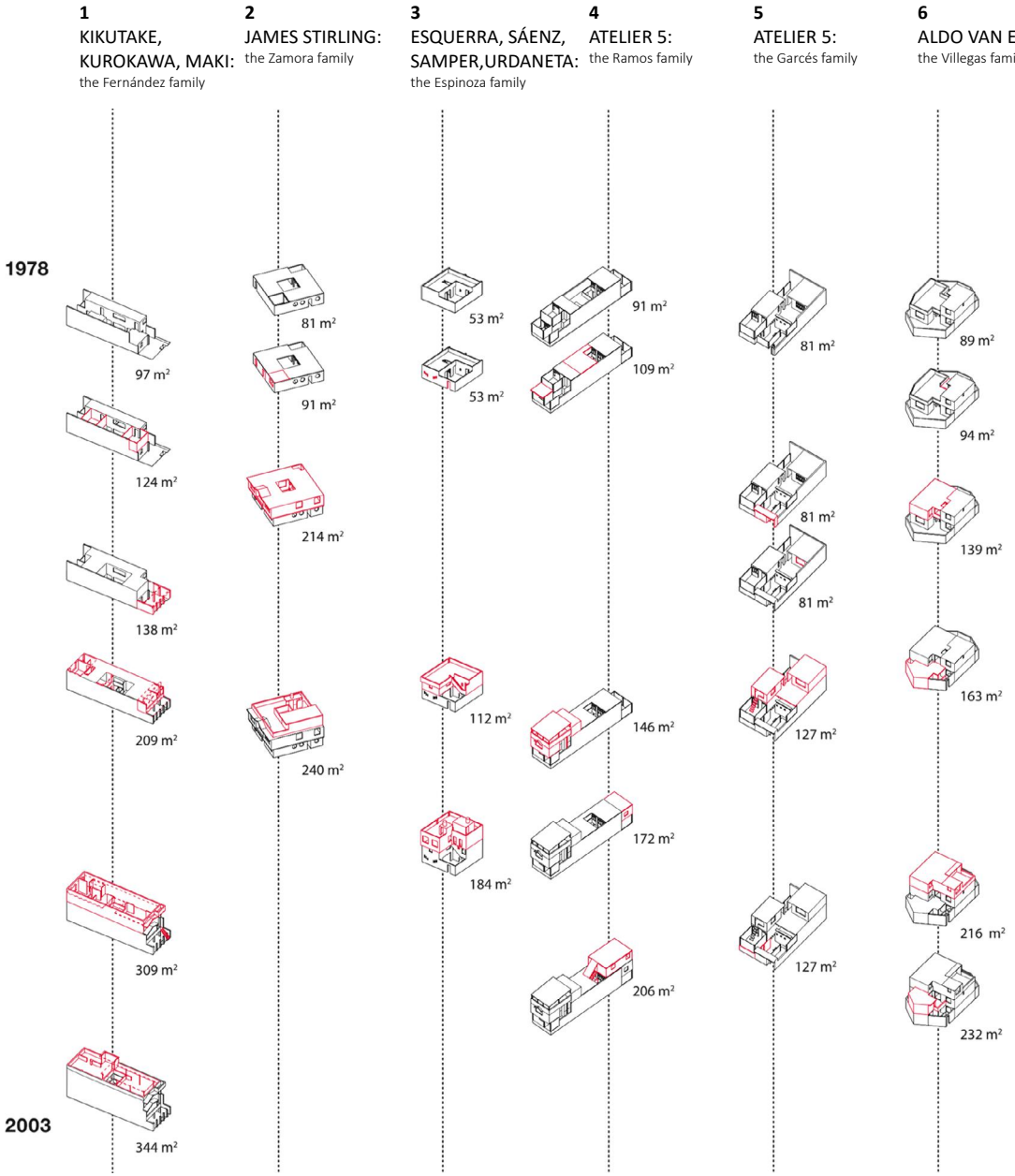


Fig.10 Another PREVI housing group showing transformations between 1985 and 2003. Source: *Time Builds!* (GG, 2008).

Fig.11 Comparison of selected PREVI housing types in 1978 and 2003, illustrating incremental growth. Redrawn by the author based on diagrams in *Time Builds!* (GG, 2008).



7
TOIVO KORHONEN:
the La Rosa family

8
KNUD SVEMSSONS:
the Mendoza family

9
CROUSSE, PÁEZ, PÉREZ-LEÓN:
the Cárcamo family

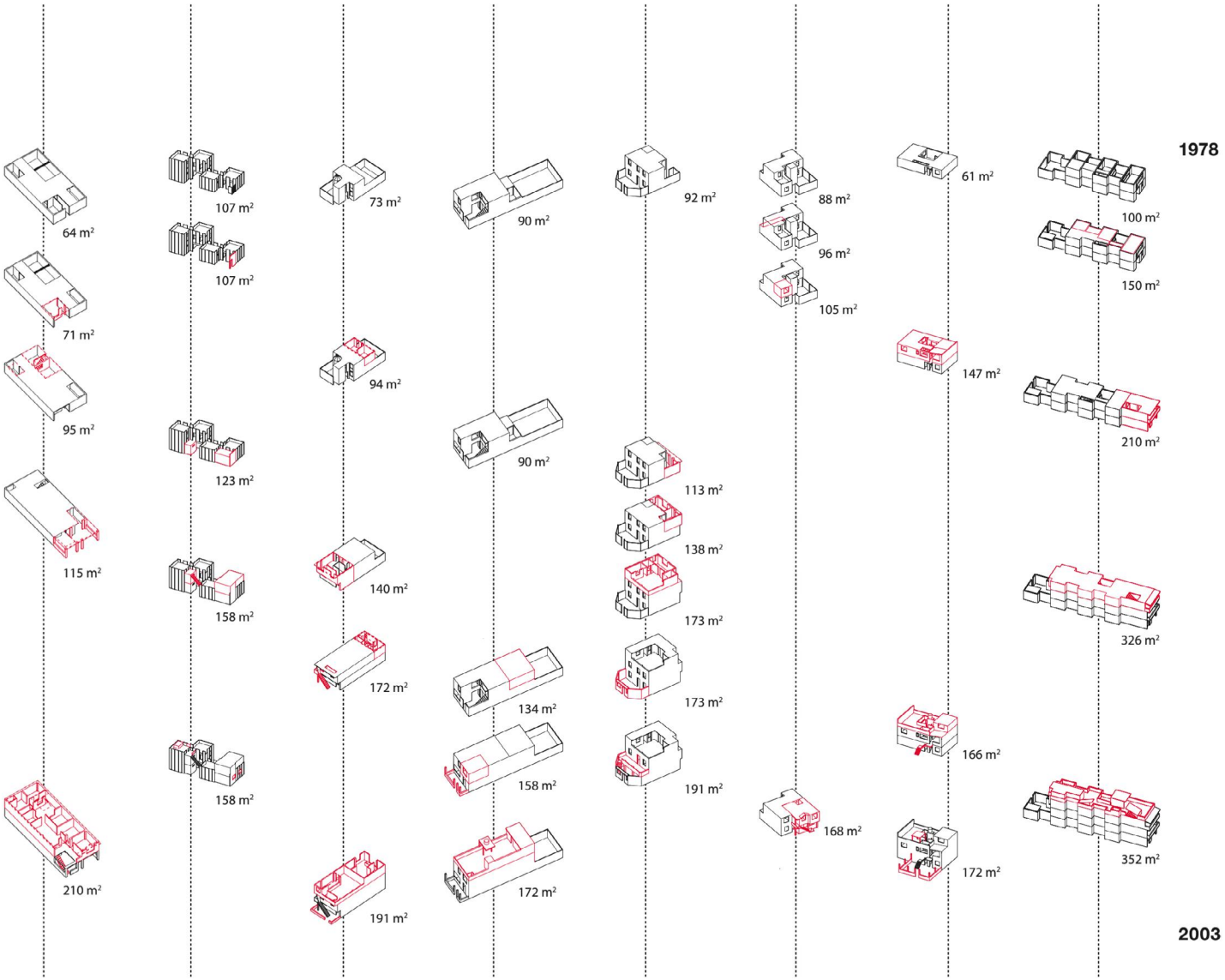
10
CHRISTOPHER ALEXANDER:
Señora Teresa's family

11
MIRO-QUESADA, NÚÑEZ, WILLIAMS:
the Frías family

12
LLANOS MAZZARRI:
the Linares family

13
MONTAGNE MORALES:
the Arnao family

14
CHARLES CORREA:
the Castro family



3. Colletta di Castelbianco(Colletta), Giancarlo De Carlo

Colletta di Castelbianco, a medieval hilltop village in Liguria abandoned for nearly two centuries, became the subject of Giancarlo De Carlo's long-term rehabilitation project in the late 20th century. Rather than treating the settlement as a static heritage object, De Carlo approached it as a living fabric whose architectural intelligence was embedded in its material, spatial, and social history. His reading of the village began with its fabric: a continuous weave of vaulted rooms, narrow passages, terraces, and roof platforms where built and open space share similar scales and enclosure qualities. As De Carlo notes, "you move out of the built space into the open space, and it is the same," emphasizing a spatial continuity that resists rigid hierarchies.[4]

This continuity supported a distinctive form of dwelling shaped by centuries of agrarian life. The vaulted rooms—rarely exceeding four meters—were constructed from small stones collected while clearing land for olive terraces. Their dimensions and interlocking arrangements resulted not from architectural drawings but from incremental adaptation, seasonal needs, and communal intelligence. Roofs served simultaneously as workplaces, drying platforms, and external rooms. Ground floors sheltered animals. These accumulated patterns formed a memory system: a built record of relationships between landscape, livelihood, and domestic ritual.

De Carlo's core insight was that this "crustacean" architecture—compact, interdependent, and multiply jointed—was in fact far more flexible than the modernist vertebrate model of skeleton-plus-skin. The village's adaptability lay not in detachable components but in its capacity for reconfiguration through countless micro-adjustments.[5] This logic guided the restoration strategy: instead of imposing new spatial orders, De Carlo sought the "genetic code" of

4. "You move out of the built space into the open space, and it is the same." — De Carlo, p.4.

5. Discussion of "crustacean form" and adaptability — De Carlo, pp.4–5

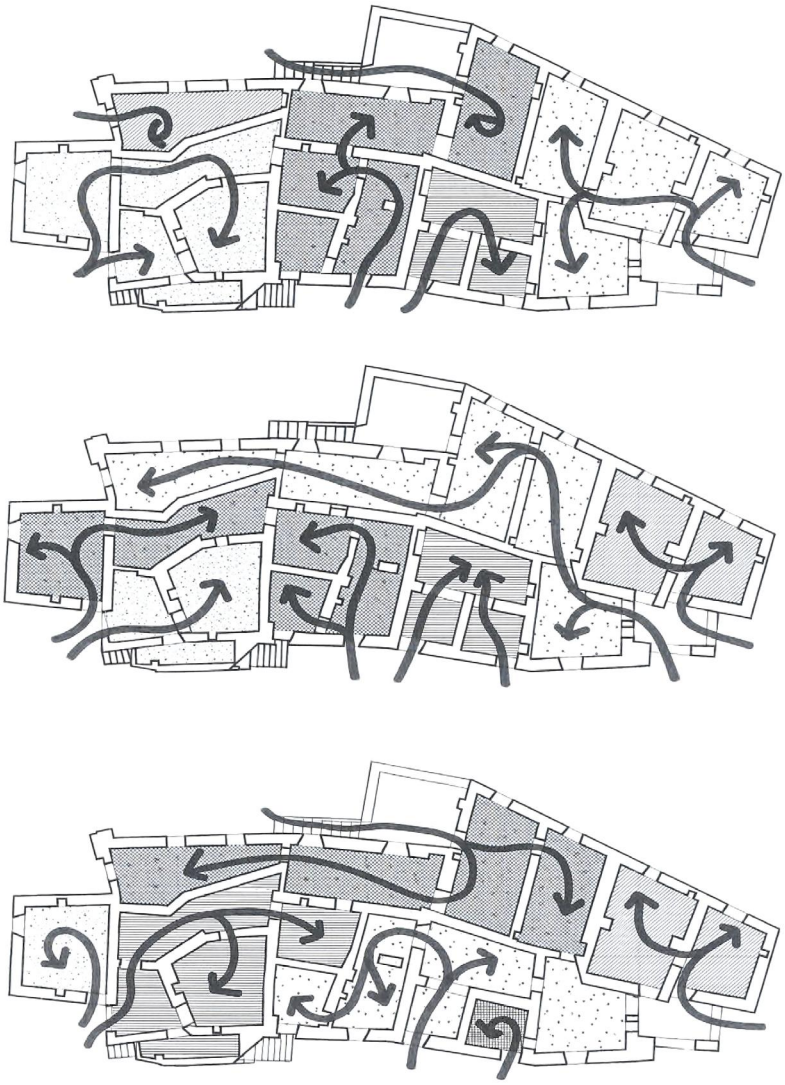


Fig.12 Three alternative connection patterns within the restored dwellings of Colletta di Castelbianco. Image reproduced from Giancarlo De Carlo, *Colletta di Castelbianco, Places Journal* 16(2), 2004.

the place, discovered through drawings, sections, and the study of window proportions, stair geometries, and void–solid relationships. Interventions were permitted only when they aligned with these internal rules—whether adding windows for contemporary light requirements or connecting units for new forms of inhabitation. (Fig12- 13)

Infrastructure was rethought as a concealed but enabling layer. Modern systems—heating, lighting, digital networks—were inserted unobtrusively, supporting the village's new inhabitants, including De Carlo's "white eagles": individuals seeking retreat while remaining digitally connected. This infrastructural layer allowed the historic dwelling fabric to persist while accommodating contemporary ways of living.

As a reference for this thesis, Colletta offers a model of layered urbanism at the architectural scale: memory embedded in inherited morphology; dwelling as adaptive, negotiated inhabitation; and infrastructure as a discreet mediator between past and present. Its restoration demonstrates how sensitive, code-based interventions can sustain both continuity and transformation within fragile historical environments.

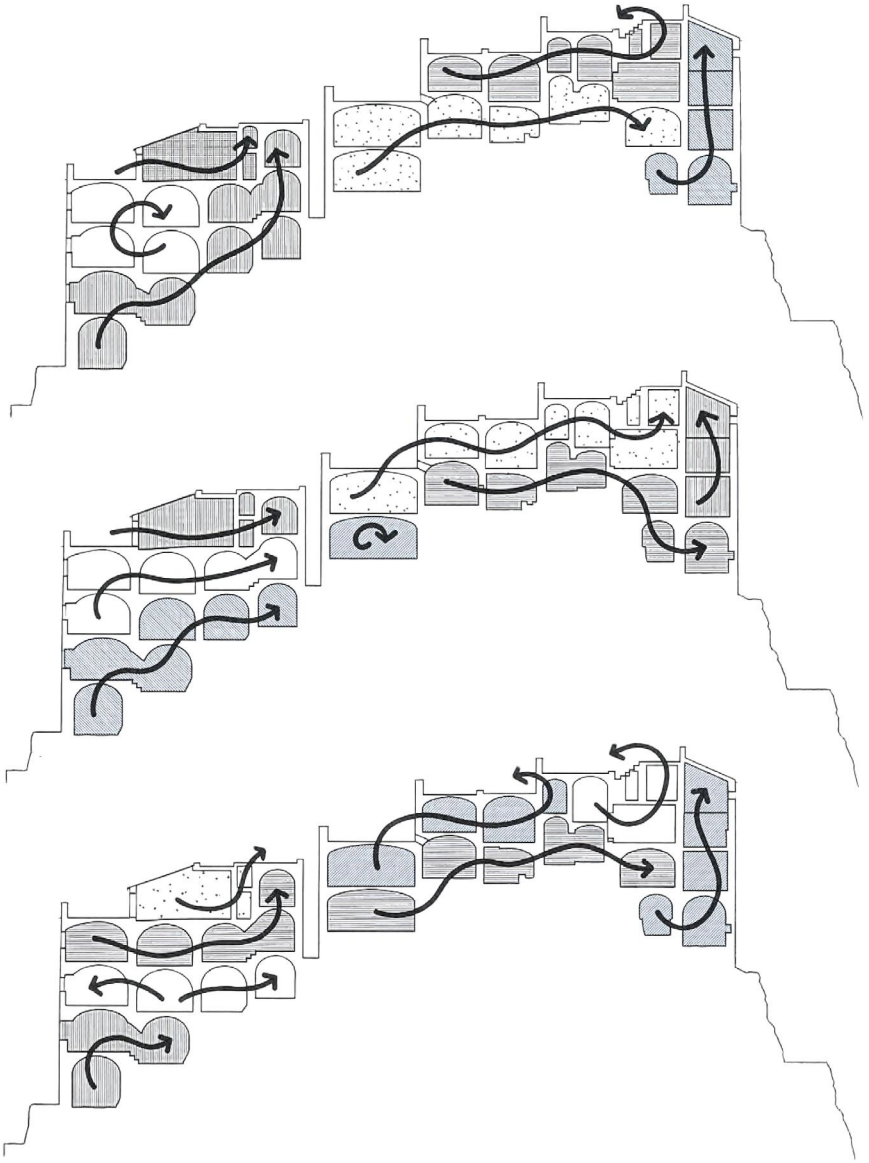


Fig.13 Sectional studies illustrating spatial continuity and multi-directional circulation within the village fabric. Image reproduced from Giancarlo De Carlo, *Colletta di Castelbianco, Places Journal* 16(2), 2004.

Proposal

Site Reading

The site of the project is strategically placed along the railway corridor of Polignano a Mare, at the contact point between the compact urban grid and the infrastructural edge. In the citywide map (Fig. 1), the two plots appear as a narrow strip on the north side of the tracks, directly behind the station, and a larger triangular area to the south, pressed between the railway and the SS16 expressway. Seen in existing aerial view of the site, these voids sit only a short walk from the historic centre, yet they remain disconnected from its spatial and social intensity.

The northern plot currently functions as an informal parking area. The surface is mostly unpaved, dusty, and exposed, with minimal planting and no facilities. Despite its centrality next to the station, it acts more as a buffer to railway operations than as part of the public realm. Its east–west geometry parallels the tracks but does not invite movement toward the town; instead, it reinforces the perception of the railway as a back edge rather than a civic threshold.

The southern plot is larger and more deeply separated from the urban fabric by a height difference of around seven metres. Historically associated with railway logistics, it now contains fragments of sidings, residual vegetation, and abandoned rolling stock, and it is listed by FS Sistemi Urbani as an area no longer functional for railway operations and available for future urban regeneration.[1] The combined effect of the tracks and the SS16 produces a triangular dead-end condition on the eastern side, where noise and traffic discourage

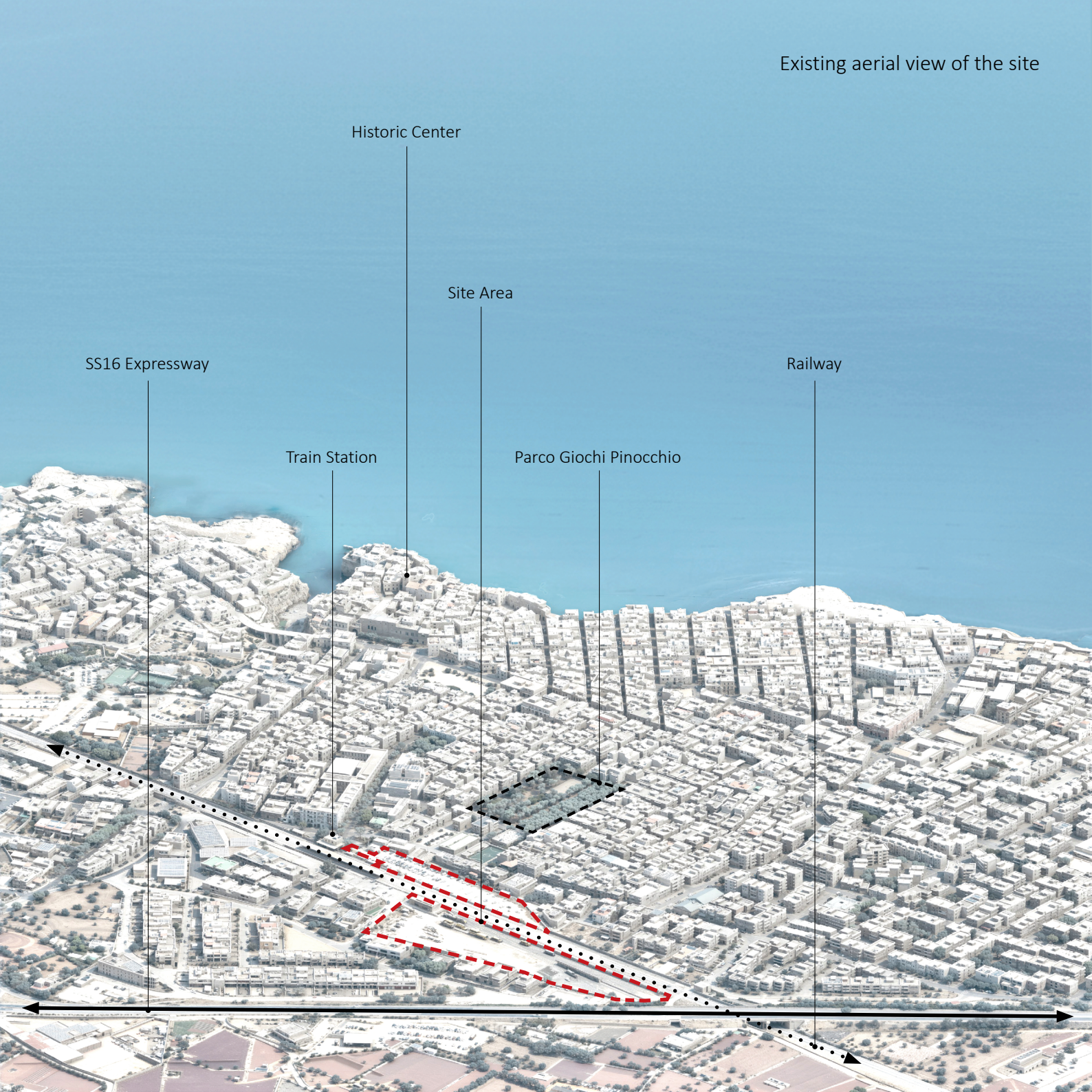
1. Europan Europe, "*Polignano a Mare* (IT) – Site," Europan 18, accessed November 2025.

Fig.1 Site location of the project areas within Polignano a Mare, highlighting the two plots along the railway corridor.

everyday use. In morphological terms, this is a typical infrastructural leftover: central in position yet peripheral in experience.

Around these voids, however, the city is dense and active. The station square, the residential grid, Parco Giochi Pinocchio, and the historic centre each carry distinct forms of dwelling and memory. Read together they exemplify the logic of "City as Layer": infrastructure, everyday inhabitation, and historical traces overlap but do not yet communicate. The task of the following layered analysis is to interpret these differences and to prepare a design that reconnects them, turning the railway lands from residual gaps into an integral part of Polignano a Mare's contemporary urban structure.

Existing aerial view of the site



Urban Community Vitality

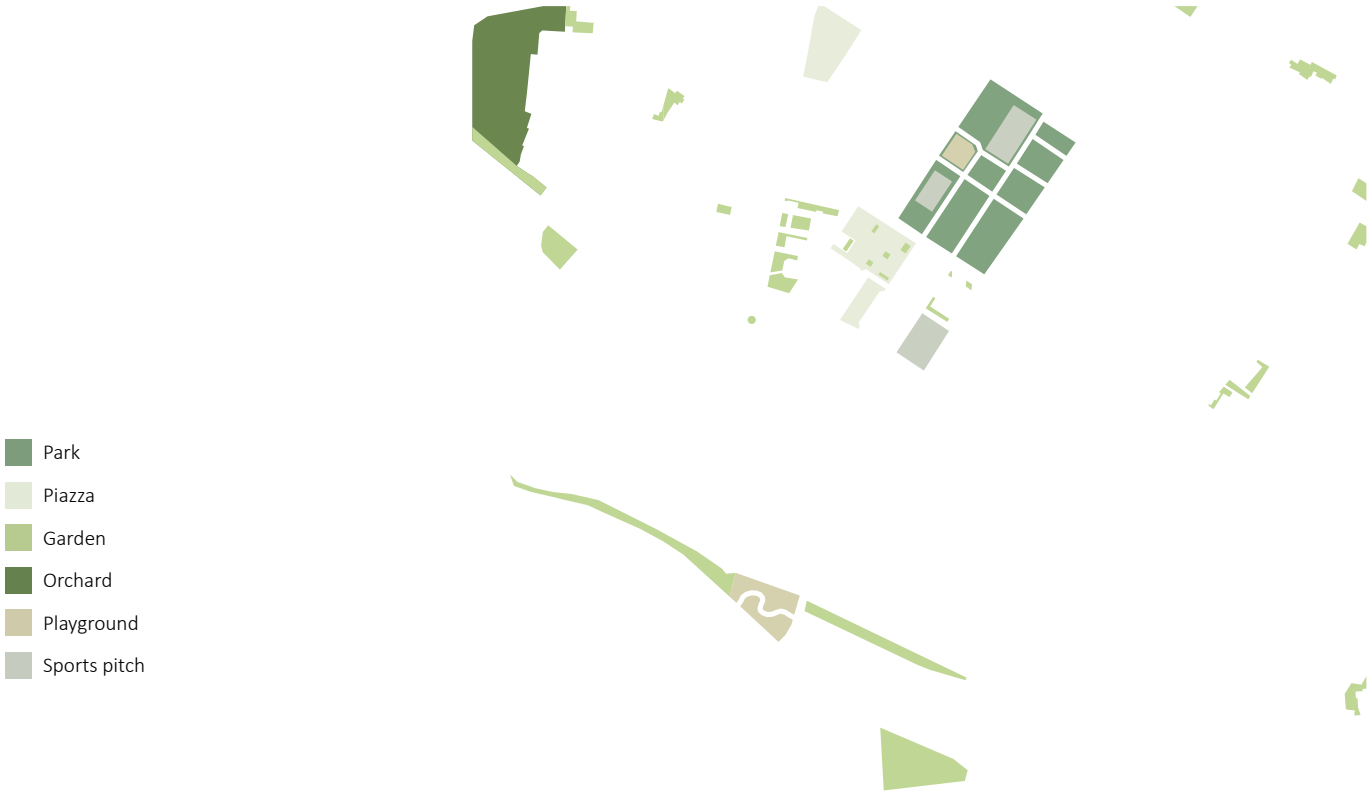
This diagram frames urban vitality as a distinct city layer, emerging from overlapping residential, commercial, and public-service uses that shape everyday movement patterns and collective social intensity.

Mobility Network & Access Points

This diagram reveals mobility as a spatial layer, where rail lines, crossings, paths, and the train station structure movement intensity and expose the site's fragmented yet connective urban thresholds.

Open Space Distribution

This diagram frames open space as an ecological-social layer, revealing dispersed parks, piazzas, and gardens whose uneven distribution shapes everyday rhythms and exposes gaps in the city's public-life continuum.

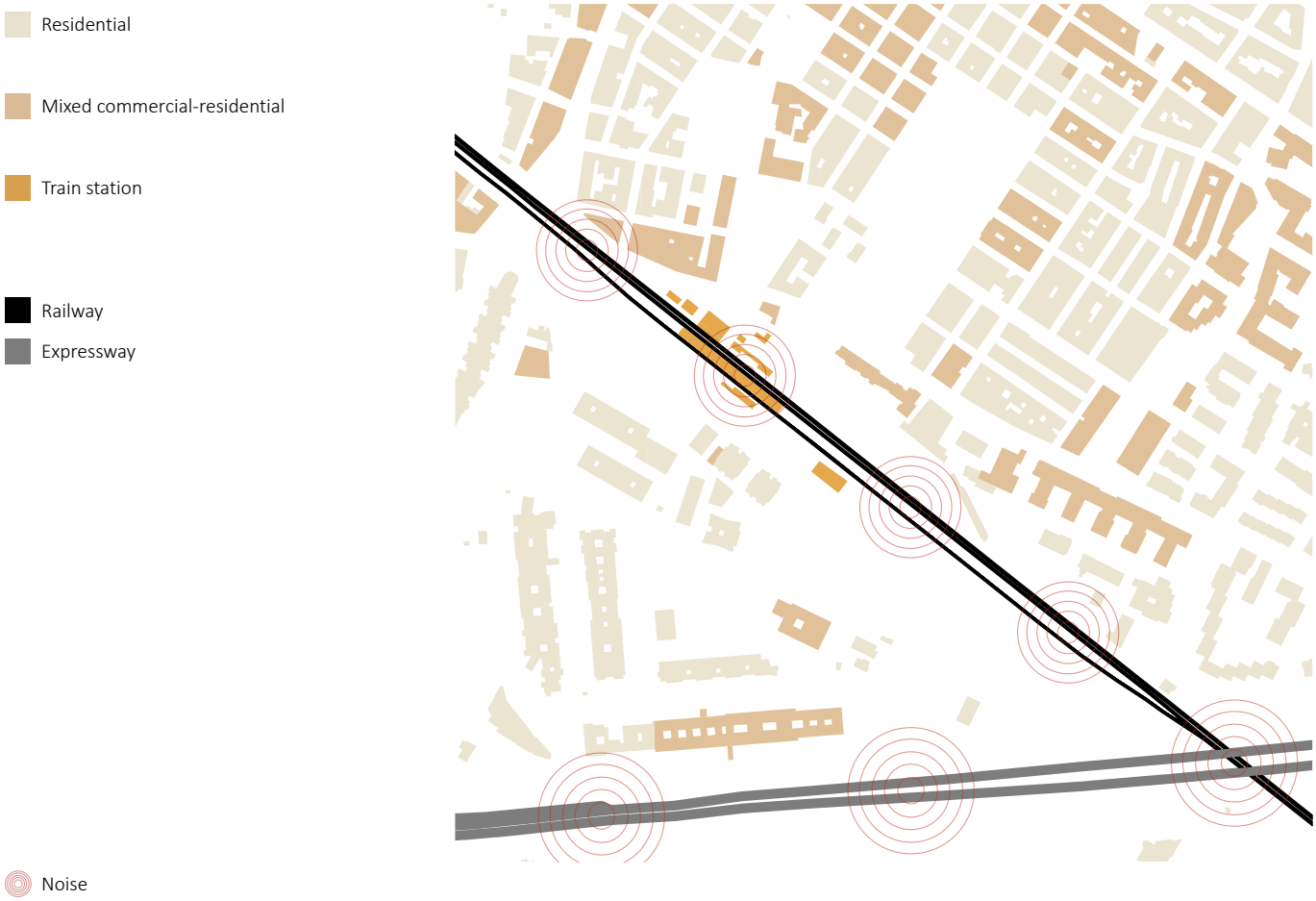


Parking Distribution

This diagram highlights parking as a functional layer, showing concentrated railway-edge lots and scattered on-street spaces that expose uneven accessibility and reinforce existing infrastructural divides.

Noise Impact

This layer visualises the acoustic pressures generated by railway and expressway infrastructures, revealing how persistent noise gradients shape uneven living conditions across adjacent residential fabrics.



Superimposition

The superimposed layers reveal a city shaped by overlapping tensions—systems that conflict, align, and coexist—producing a condition that is at once independent, interdependent, heterogeneous, and bound by mutual constraints.

- Industrial
- Residential
- Public services
- Mixed commercial-residential
- Busy area
- Train station
- Path
- Street
- Railway
- Expressway
- Cross point
- Park
- Piazza
- Garden
- Orchard
- Playground
- Sports pitch
- Free parking
- Paid parking
- Bus stop
- Cycle parking
- Railway-edge leftover land
- Noise

Historical Connection

Between the site and the historic centre, multiple overlapping layers—land uses, circulation, public spaces, and infrastructural edges—expose a complex and often contradictory urban continuum, where spatial discontinuities coexist with deep historical orientations shaping future reconnection.

The six propositions
The Introduced Background

The analytical work developed in the previous section shows that Polignano a Mare cannot be understood through a single explanatory logic; instead, it appears as a composite terrain where multiple and often contradictory layers coexist. The six diagrams titled Urban Community Vitality, Mobility Network and Access Points, Open Space Distribution, Parking Distribution, Noise Impact, and Historical Connection reveal spatial conditions that overlap, collide, or reinforce one another across the city.

Within the methodological frame of *City as Layer,* these diagrams become more than descriptive tools; they operate as analytical strata that uncover underlying dynamics shaping the urban fabric. Each layer highlights a distinct dimension, from social activity to accessibility, environmental comfort, and historical orientation, offering a structured way to read Polignano's fragmented coherence.

The transition from diagrams to propositions marks a crucial moment in the research. The six propositions, namely Community Making, Urban Continuity, Public Realm, Traffic Reintegration, Quiet Liveability, and Historical Memory, translate these layered readings into evaluation criteria. Rather than prescribing solutions, they establish a shared framework through which different design scenarios can be measured, compared, and critically positioned.

As evaluation criteria, these propositions guide the proposal for the Polignano a Mare site, ensuring that design choices respond to the city's layered identity while addressing its structural tensions. They form a conceptual bridge between analysis and project, enabling the design to negotiate coexistence, reinforce continuity, and activate meaningful transformation.

Urban Community Vitality

Evaluation Criteria

Urban Community Vitality → *Community Making*

The mapping of everyday activities reveals dispersed yet resilient social rhythms. Transformed into the proposition of Community Making, this layer becomes a call to design environments that enable encounter, support collective routines, and cultivate new forms of shared urban life.

Mobility Network & Access Points

Mobility Network & Access Points → *Urban Continuity*

The mobility layer exposes fractures and thresholds produced by rail and road infrastructures. Transformed into Urban Continuity, it calls for design strategies that reconnect interrupted paths, re-stitch urban fabrics, and restore seamless movement across previously disconnected territories.

Open Space Distribution

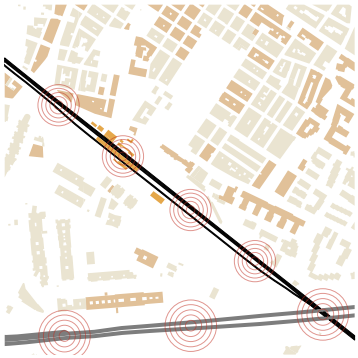
Open Space Distribution → *Public Realm*

The distribution of parks, piazzas, and informal grounds reveals disparities in accessibility and use. As a proposition, Public Realm calls for rebalancing these open-space layers to cultivate inclusive, continuous, and socially expressive environments across the urban fabric.

Parking Distribution

Parking Distribution → Traffic Re-integration

Fragmented parking patterns reveal structural inefficiencies and reinforce peripheral congestion. As a proposition, Traffic Re-integration seeks to reorganize these dispersive elements into a coherent mobility system, improving flow, reducing conflicts, and restoring functional balance across the urban corridor.



Noise Impact

Noise Impact → Quiet Liveability

The dispersion of acoustic disturbance exposes the fragility of everyday comfort along infrastructural edges. Quiet Liveability reframes this condition as a design imperative, mitigating noise through spatial buffering and programmatic calibration to restore environmental dignity and support sustained, habitable urban life.

Historical Connection

Historical Connection → Historical Memory

The layered sequence between the site and the historic city reveals how spatial form, circulation, and everyday rituals sediment over time. Historical Memory reframes these strata as an active palimpsest — coexisting layers of meaning, orientation, and identity — guiding design toward continuity built not through imitation, but through the careful reactivation of inherited urban traces.

Public Realm

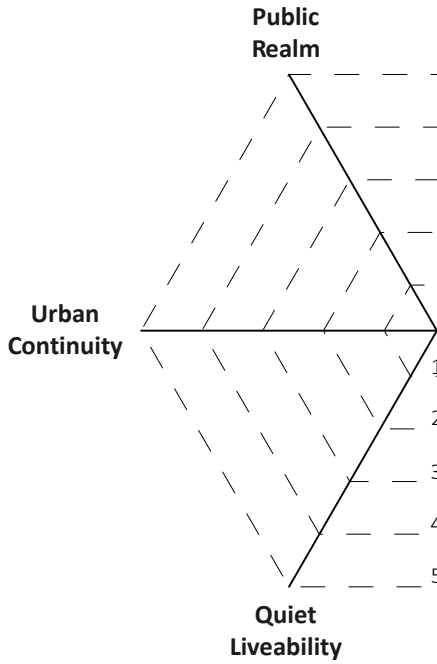
1. No public space is available or existing spaces are unused and functionally empty.
2. Some green or hardscape areas exist but are small, mono-functional, and poorly integrated.
3. Basic public spaces are provided with some seating, greenery or pedestrian uses.
4. A well-structured system of public space is present, supporting diverse social and recreational uses.
5. Public space is continuous, inclusive, vibrant, and strongly connected to the built environment.

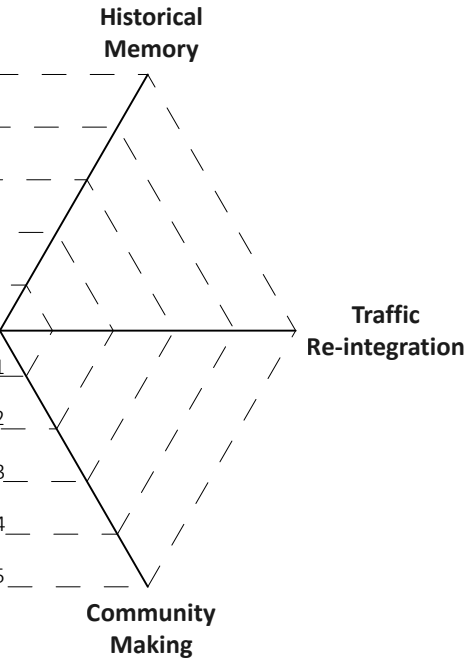
Urban Continuity

1. The railway completely severs the urban fabric; no crossing points exist; the spatial disconnection is total.
2. A minimal number of crossings exist, but they are weak in function or poorly located; the two sides remain isolated.
3. Several physical crossings are present; some functional complementarity exists, but spatial balance is limited.
4. A connected system of crossings is established; railway edges are softened through design; spatial integration is high.
5. The railway is fully integrated into the urban structure and no longer acts as a barrier.

Quiet Liveability

1. Most residential buildings are directly exposed to major noise sources (e.g., railway, highways).
2. Many dwellings are near noisy areas with minimal mitigation strategies.
3. Some residential areas are impacted, but quieter zones also exist.
4. Most living areas are distant from noise sources or buffered through design.
5. The entire living environment is quiet, well-protected, and offers a high standard of acoustic comfort.





Historical Memory

1. No historical elements are preserved or expressed; no relation to local heritage.
2. Isolated historical elements are passively preserved, but disconnected from the spatial system.
3. Some spatial or structural traces of history remain visible or partially acknowledged.
4. Historical features are actively integrated into the urban or architectural design.
5. Historical layers are clearly understood and reactivated across spatial structure, function, and materials, creating a strong sense of place.

Traffic Re-integration

1. Parking is scattered and insufficient; traffic conflicts; pedestrian paths disconnected.
2. Parking uses leftover land; station traffic chaotic; walking unsafe.
3. Flows are partly separated; key areas lack structure; integration remains weak.
4. Parking is consolidated; circulation is clear; pedestrian network mostly continuous.
5. Multimodal flows are integrated; station area is orderly; walking is prioritized.

Community Making

1. Space is fragmented and mono-functional, lacking any sense of enclosure or community life.
2. Some areas are partially enclosed, but public life is minimal and unstructured.
3. Shared spaces exist and support basic interaction among residents.
4. Spatial layout fosters diverse community uses and encourages informal social life.
5. Strongly defined public-private gradients and high-quality shared spaces promote a vivid, inclusive, and safe community life.

	Memory	Dwelling	Infrastructure
Public Realm	√√√	√√	√
Urban Continuity	√	√√	√√√
Quiet Liveability	-	√√√	√√√
Historical Memory	√√√	√√	√
Traffic Re-integration	-	√√√	√√√
Community Making	√√	√√√	√

Note: √ = weak correlation, √√ = moderate, √√√ = strong, – = no correlation

Table1. Correlation matrix between the six propositions and the three dimensions (Memory, Dwelling, Infrastructure), indicating varying intensities of conceptual alignment and their roles within the evaluative framework.

The six propositions distilled in this chapter emerge from a systematic translation of the site-reading diagrams into conceptual layers that articulate how Polignano a Mare operates as a stratified urban environment. Each diagram—ranging from community vitality, mobility, open space, parking, noise, and historical structure—captures a discrete spatial logic, yet their superimposition reveals a condition of simultaneity: layers that overlap, contradict, reinforce, or neutralize one another. It is precisely this layered complexity that necessitated the step toward abstraction. By reframing each empirical layer as a proposition, the thesis shifts from descriptive analysis to a normative orientation capable of guiding design.

The six propositions — Community Making, Urban Continuity, Public Realm, Traffic Re-integration, Quiet Liveability, and Historical Memory—thus function as conceptual condensations of the observed spatial conditions. They articulate not only what the site is, but also what it requires: social cohesion, infrastructural permeability, civic openness, modal balance, acoustic comfort, and temporal anchoring. Their interrelations are neither symmetrical nor equivalent. As *Table 1* shows, each proposition intersects with

the three layers — Memory, Dwelling, Infrastructure — with different intensities, ranging from weak to strong correlations. This uneven alignment is significant: it demonstrates that the dimensions operate as analytical lenses rather than categorical containers, and that each proposition mediates between them in a distinct way.

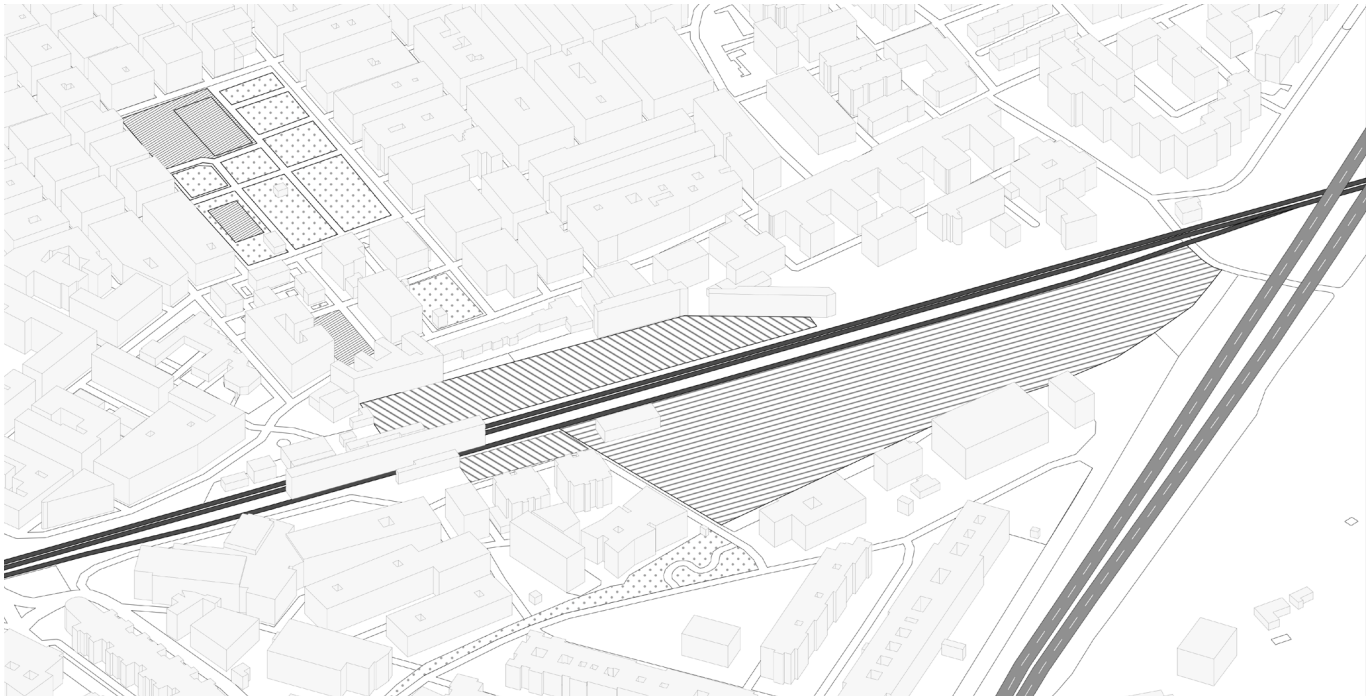
From this mapping, a coherent evaluative framework emerges. The propositions serve as criteria through which the projective transformation of the site can be assessed—not as isolated goals but as interdependent vectors shaping urban quality. The evaluation hexagon visualizes these vectors collectively, enabling the comparison of existing conditions and future scenarios within a single graphic language. Through this structure, the thesis establishes a methodological bridge: from layered analysis to propositional reasoning, and from propositional reasoning to an operative metric capable of informing the design strategies developed in the subsequent proposal chapter.

Scenario

Scenario 0

Scenario 0 captures a condition in which the two railway-side plots function more as infrastructural leftover than as active parts of the city. The Axonometric View makes this immediately visible: the northern plot is reduced to an informal, unpaved parking surface with little spatial quality, while the southern area lies sunken, fragmented, and acoustically exposed, shaped more by abandoned rail elements and the SS16 corridor than by any form of civic intention. These characteristics explain the weak performance of several propositions. For example, Urban Continuity remains extremely low because the railway and expressway create a double barrier that interrupts movement and prevents any meaningful relationship between north and south. Likewise, Quiet Liveability is compromised by constant infrastructural noise and the absence of buffering elements. The

Scenario 0 — Axonometric View



Evaluation Diagram for Scenario 0

Scores:

Public Realm: 2

Urban Continuity: 1

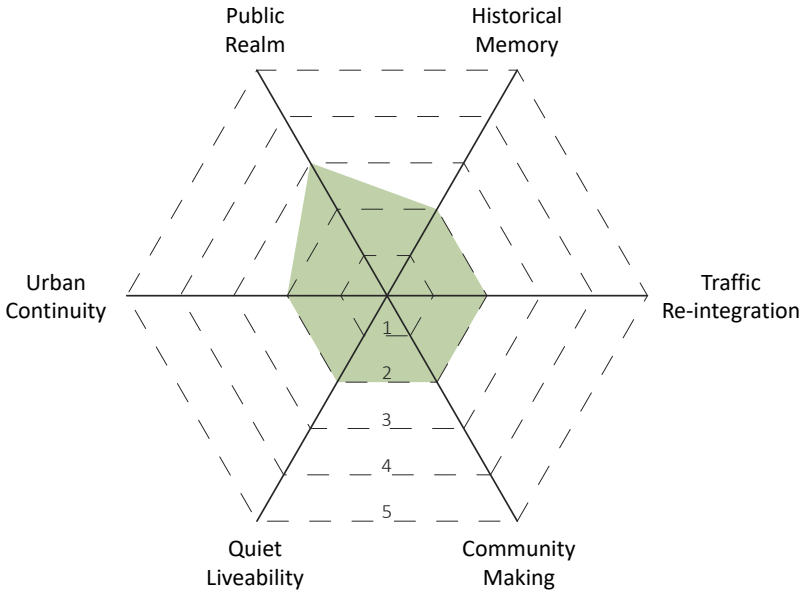
Quiet Liveability: 1

Historical Memory: 2

Traffic Re-integration: 1

Community Making: 2

Total Score: 9 / 30



lack of structured open spaces or programmatic depth similarly limits both Public Realm and Community Making, as neither plot supports the rhythms of everyday life visible elsewhere in the city.

Historical orientation is faintly present through proximity to the historic city, yet Historical Memory remains weak because the spatial chain that would translate heritage into the site is effectively broken.

Overall, the evaluation diagram reflects these weaknesses: the irregular, collapsed polygon reveals an unbalanced urban condition with minimal capacity for continuity, community, or comfort. With a total score of 9 out of 30, Scenario 0 establishes a baseline defined by fragmentation and underperformance, against which all subsequent scenarios must demonstrate meaningful improvement.

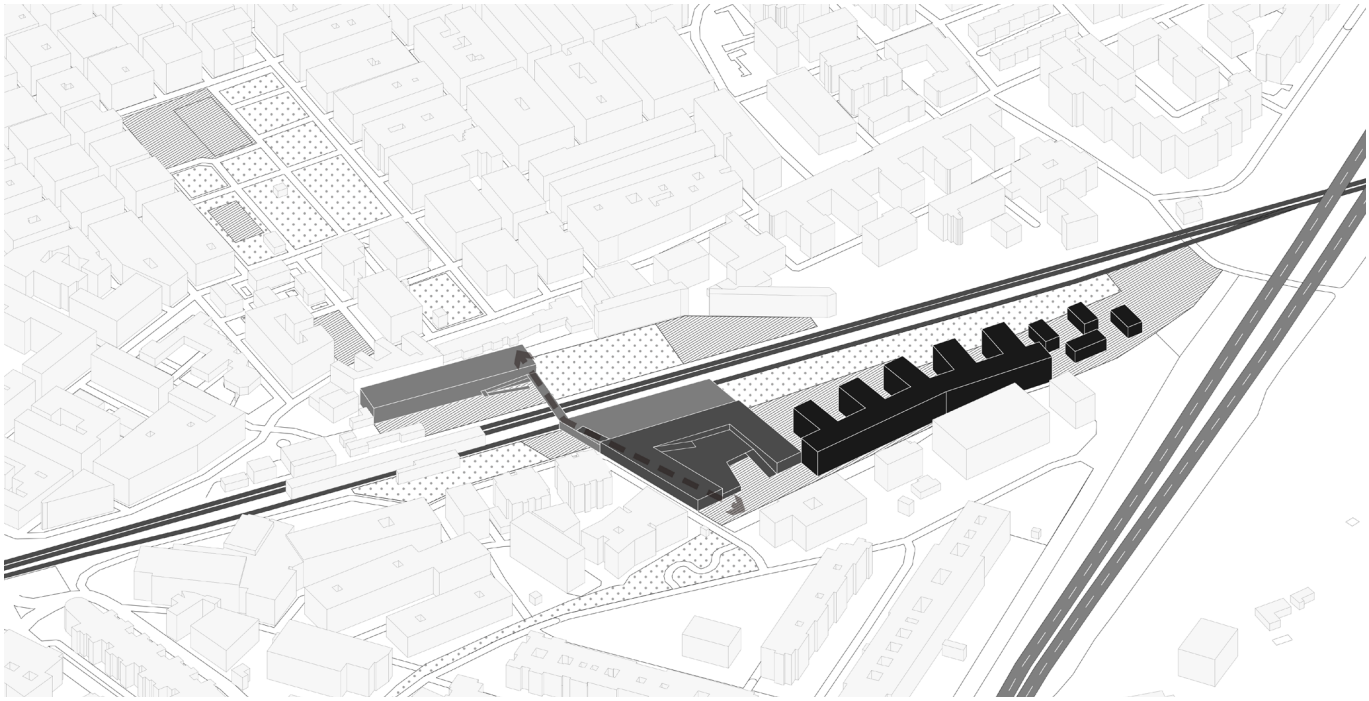
Scenario 1

Scenario 1 introduces a first level of transformation along the railway corridor, where new built volumes begin to organise the fragmented terrain. Although the infrastructural barriers remain, the added architectural massing creates clearer edges, more defined courtyards, and a preliminary spatial order. These adjustments slightly reduce the sense of vacancy that characterises the existing condition.

In the axonometric view, the southern strip is partially reactivated through continuous frontage and new programmatic anchors. This produces a modest improvement in public realm, where walkable surfaces and semi-structured outdoor areas start to appear. However, these spaces remain physically constrained by the railway and the expressway, limiting their civic depth.

Urban continuity also increases only marginally. While certain paths are clarified, the intervention does not yet overcome the fundamental

Scenario 1 — Axonometric View



Evaluation Diagram for Scenario 1

Scores:

Public Realm: 4

Urban Continuity: 3

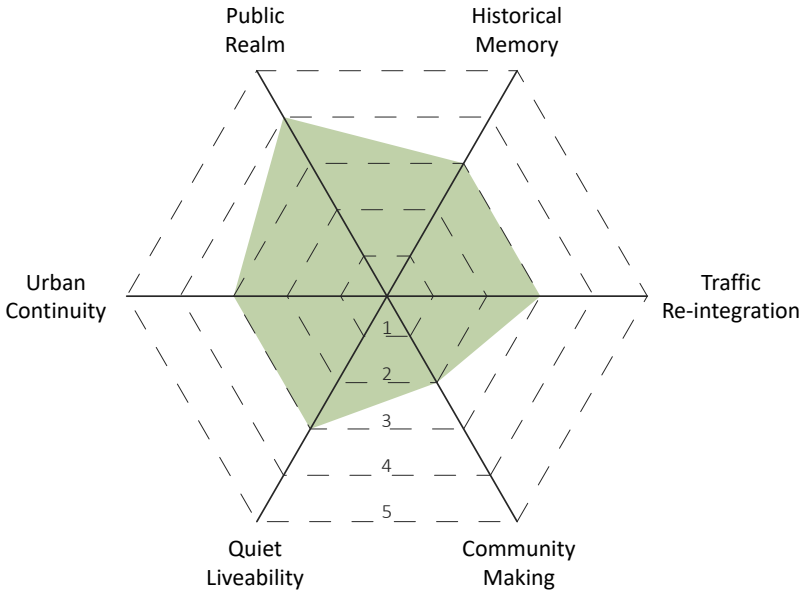
Quiet Liveability: 1

Historical Memory: 3

Traffic Re-integration: 2

Community Making: 2

Total Score: 14 / 30



difficulty of north–south permeability. Noise exposure remains largely unchanged, which is reflected in the lower score for Quiet Liveability.

A more notable improvement appears in Historical Memory: by aligning new built forms toward the historic city, Scenario 1 begins to re-establish an orientational relationship with Polignano's older layers. Community Making similarly shows a modest rise, as new shared pockets offer early potential for interaction.

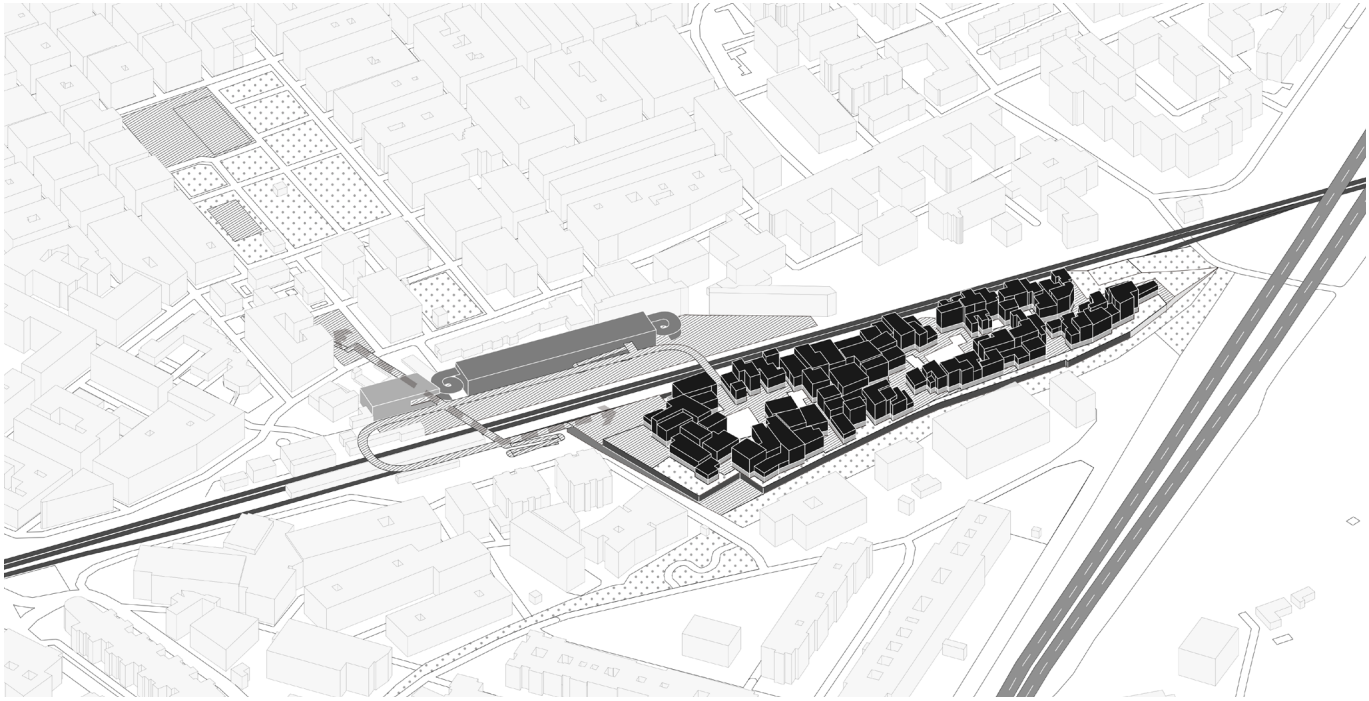
Overall, the evaluation diagram registers a total of 14/30, indicating that Scenario 1 performs better than the existing condition but still lacks structural integration, acoustic comfort, and a strong civic interface.

Scenario 2

Scenario 2 proposes a more integrated and historically anchored development strategy, in which the new urban fabric is reorganised into a continuous, fine-grained pattern closely aligned with the morphology of Polignano a Mare's historic city. The Axonometric View demonstrates a compact, interconnected system of blocks and passages, replacing the previously fragmented bar-like structures with smaller, articulated forms that echo the rhythm, scale, and spatial porosity of the northern historic district. Through this reconfiguration, the site begins to operate not as a peripheral leftover, but as an extension of the city's long-standing spatial logic.

This shift significantly strengthens historical memory, which reaches one of the highest scores in the evaluation. The design no longer relies on isolated architectural gestures; instead, it restores continuity between temporal layers by adopting a morphology

Scenario 2 — Axonometric View



Evaluation Diagram for Scenario 2

Scores:

Public Realm: 4

Urban Continuity: 4

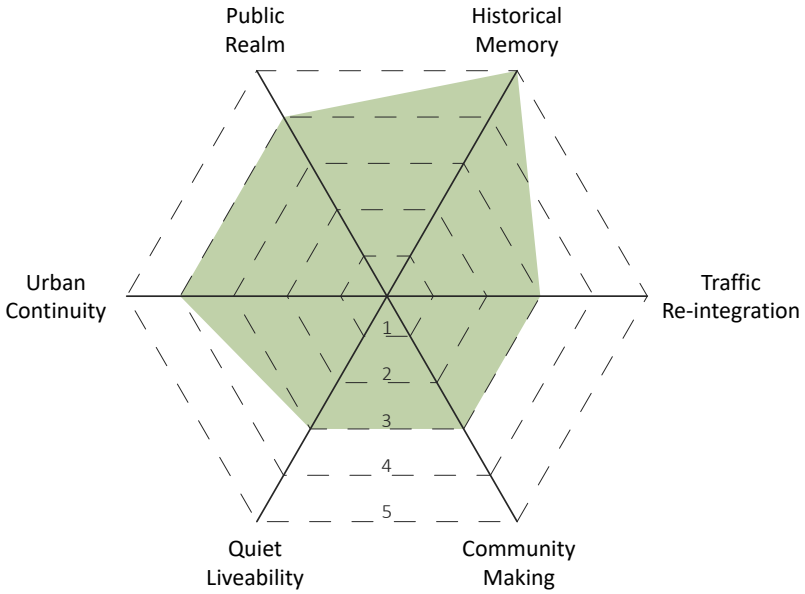
Quiet Liveability: 3

Historical Memory: 5

Traffic Re-integration: 3

Community Making: 3

Total Score: 22 / 30



that resonates with established patterns of enclosure, street width, and spatial grain. Public Realm and Urban Continuity also show improved performance, as the fine-grained layout naturally produces a series of connected courtyards, passages, and semi-public spaces that soften the railway edge and reduce spatial isolation. These shared interfaces promote a stronger sense of everyday urbanity and support more diverse forms of social occupation.

Quiet Liveability remains moderate due to persistent infrastructural noise, although the compact block structure offers better buffering. Community Making also increases as spatial intimacy and permeability encourage informal social interaction, even if a fully articulated civic system is not yet present.

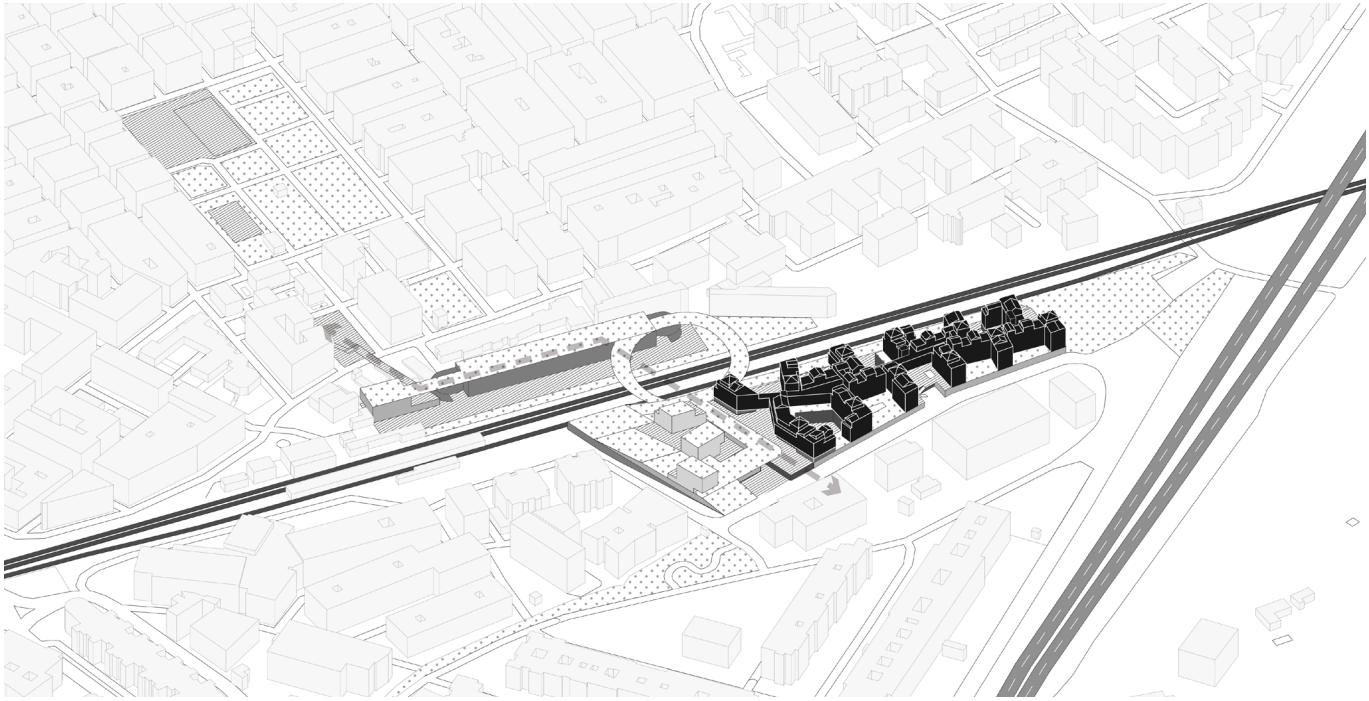
Overall, Scenario 2 achieves 22/30, presenting a more coherent, place-sensitive condition that strengthens identity and continuity while cautiously negotiating infrastructural constraints.

Scenario 3

Scenario 3 represents the most advanced and integrated configuration among the tested conditions and forms the conceptual basis for the final proposal. The defining move is the transformation of the linear pedestrian bridge into a circular connective device that mediates between different ground levels, creating a spatial hinge that anchors multiple functions simultaneously. This circular form does not merely solve height differences; it becomes an active urban interface where circulation, public life, and programmatic exchange converge.

Across the site, density is reorganized into a network of multi-level, mixed-use buildings that work collectively rather than individually. The architectural massing expresses a layered logic: lower levels accommodate public and semi-public uses, mid-levels host communal programs, and upper levels introduce residential volumes with varied typologies. This stratification ensures constant interaction

Scenario 3 — Axonometric View



Evaluation Diagram for Scenario 3

Scores:

Public Realm: 5

Urban Continuity: 5

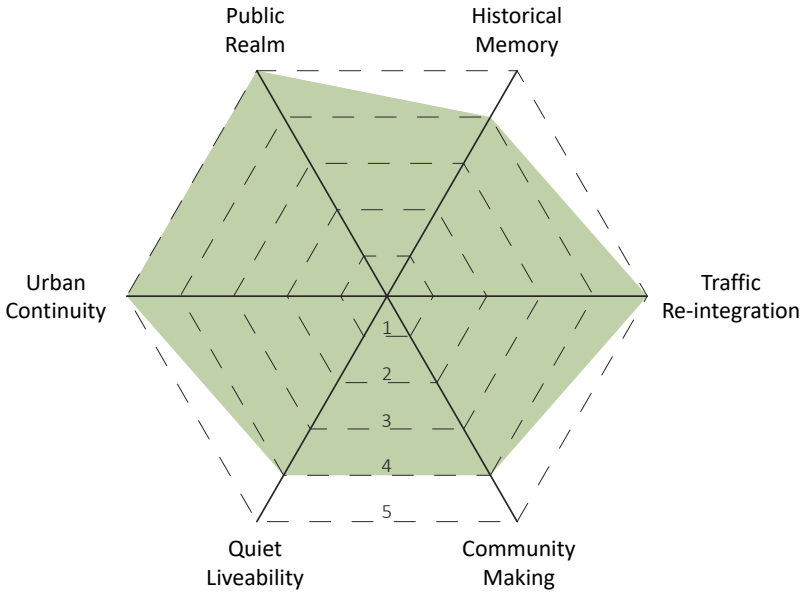
Quiet Liveability: 4

Historical Memory: 4

Traffic Re-integration: 5

Community Making:4

Total Score: 24 / 30



between movement, dwelling, and collective life. The southern area, once a passive buffer, is reactivated through continuous open spaces, pedestrian paths, and noise-mitigating green infrastructure.

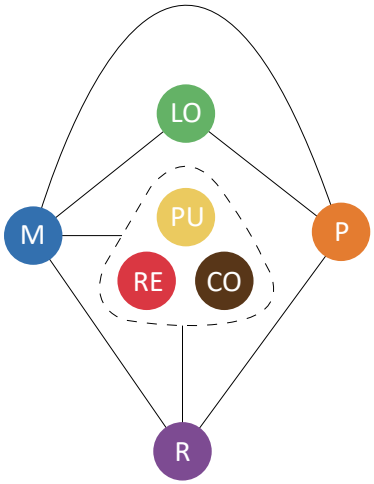
The evaluation diagram reflects this expanded integration. Public Realm, Urban Continuity, and Traffic Re-integration achieve high values due to the strengthened spatial network and the circular bridge's connective capacity. Quiet Liveability improves through the introduction of buffering landscapes, while Historical Memory rises as new viewpoints and spatial thresholds re-establish orientation toward the historic city.

Scenario 3 therefore reaches a total score of 24 out of 30, producing the broadest and most balanced polygon among all scenarios. The configuration demonstrates a coherent synthesis of spatial continuity, mixed-use intensity, and communal programming, confirming its role as the closest precursor to the final proposal.

Project

Concept

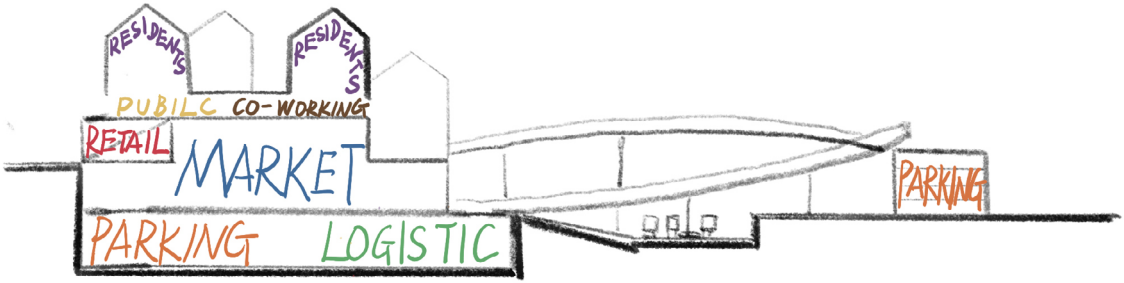
This project develops Scenario 3 into a more detailed proposal that responds directly to the six propositions. The concept organizes PU, RE, CO, M, LO, R, and P into a multi-layered architectural structure that reinforces continuity between the historic core and the previously fragmented area. The spiral bridge reinterprets the railway infrastructure, reconnecting the train station with the new district and improving movement across the site. Through the Program–Function Framework, the Program–User Matrix, and the Programmatic Concept Plan, the project establishes an integrated environment where public space, retail, co-working, market, logistic, residential community, and parking operate together. The result strengthens the relationship between dwelling, infrastructure, and memory.



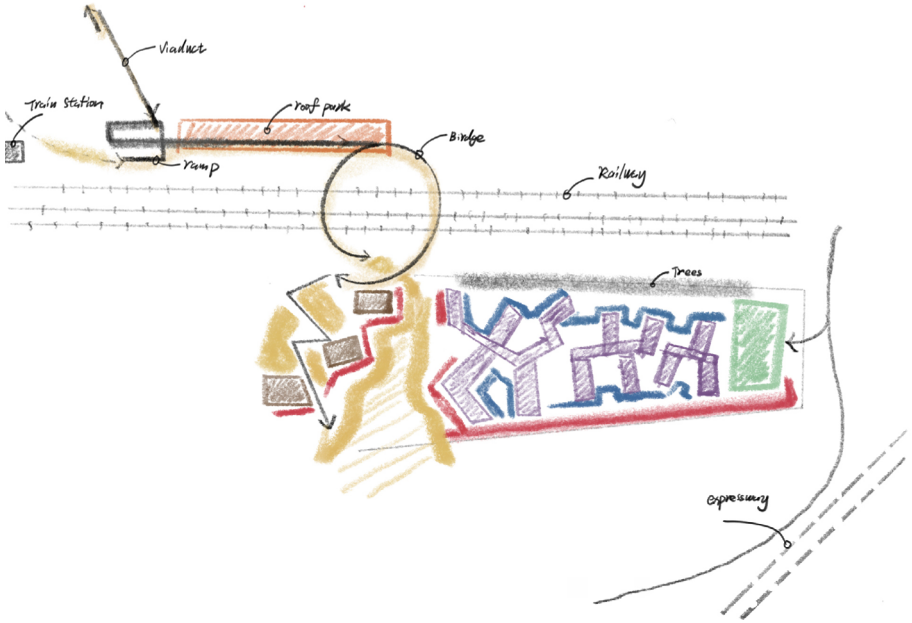
PU Public Space (park, plaza, service facility,etc)
RE Retail(cafe,restaurant,store)
CO Co-Working Space
M Market (seafood,fruit,vegetable,etc)
LO Logistic
R Residential Community
P Parking

· *Program–Function Framework*

· *Program–User Matrix*

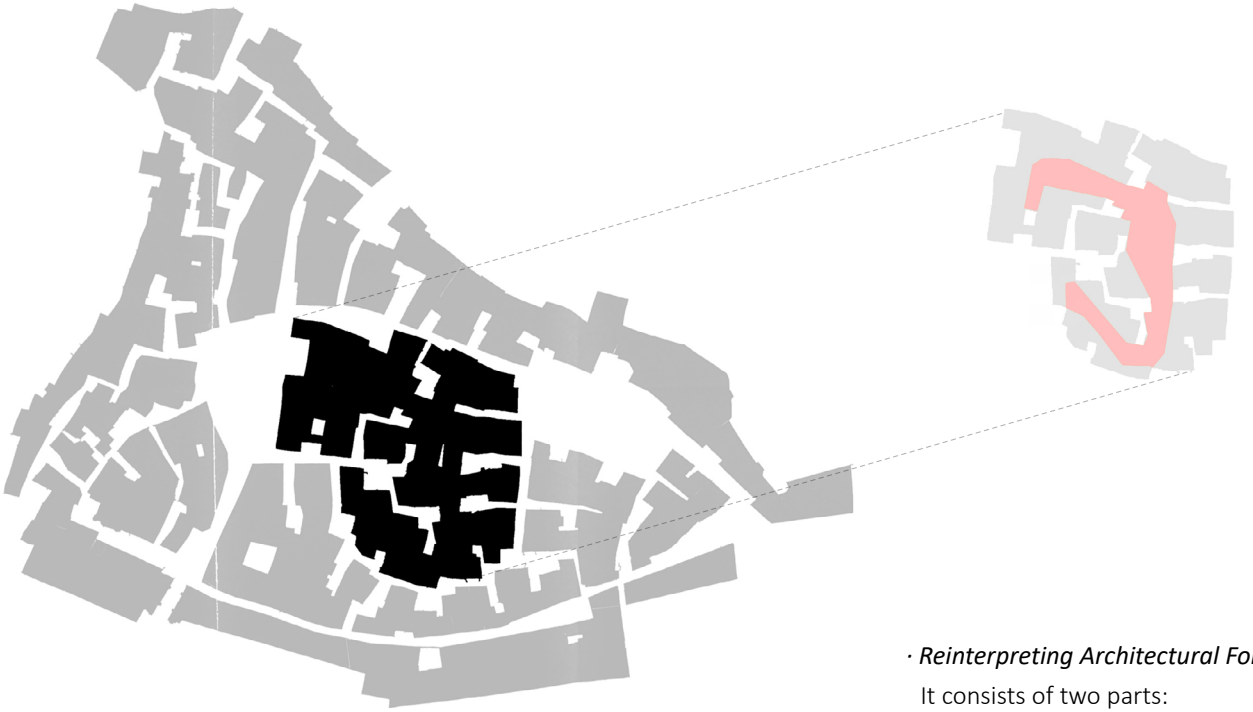


· *Programmatic Concept Section*



· *Programmatic Concept Plan*

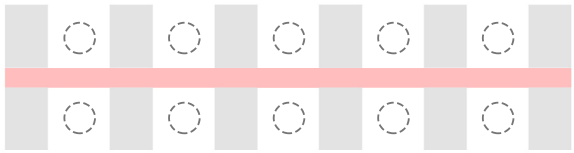
Historical Symbol Abstraction



·*Historic City Fabric*

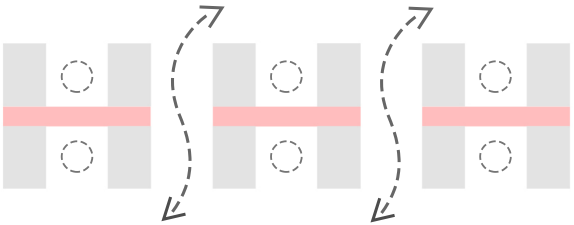
· *Reinterpreting Architectural Form*

It consists of two parts:
a continuous “spine” and a set of branching “wings.”



· *Spacial Logic*

A “spine” serves as the main circulation.
The “wings” accommodate residential units.
A series of courtyards unfolds between them.



· *Reconfigured Circulation*

Breaking the "spine" creates transversal corridors
Improving cross-connections and strengthening spatial communication between the two sides.

This set of diagrams articulates how historical memory can be abstracted into a contemporary architectural strategy rather than replicated as stylistic imitation. The compact medieval fabric of Polignano's historic core — characterised by irregular blocks, layered thresholds, and an intimate sequence of courtyards — provides not a formal template, but a spatial logic. By distilling this logic into the idea of a "spine" and branching "wings," the project identifies a structural grammar capable of supporting new forms of dwelling and collective life.

In line with the "City as Layer" framework, this approach treats the historic city as one temporal layer whose organisational principles can be translated rather than reproduced. The reinterpretation foregrounds continuity of memory while acknowledging the very different environmental and infrastructural conditions of the railway site. The resulting form thus becomes a carrier of memory, not by appearance, but by spatial behaviour: permeability, adjacency, courtyard-based orientation, and differentiated public–private gradients.

This abstraction also aligns with "the six propositions" used as evaluation criteria. It strengthens "Community Making" by generating shared spaces that organise everyday encounters; enhances the "Public Realm" through a coherent structure of courtyards and passages; and improves Urban Continuity by creating transversal connections across what was previously a fragmented corridor. At the same time, it adapts historical density to contemporary expectations of "Quiet Liveability" and functional diversity.

In this sense, the diagrams demonstrate how memory and dwelling can be productively layered: the historic city is neither copied nor erased, but transformed into a spatial method capable of addressing the present needs of Polignano a Mare while remaining rooted in its cultural depth.

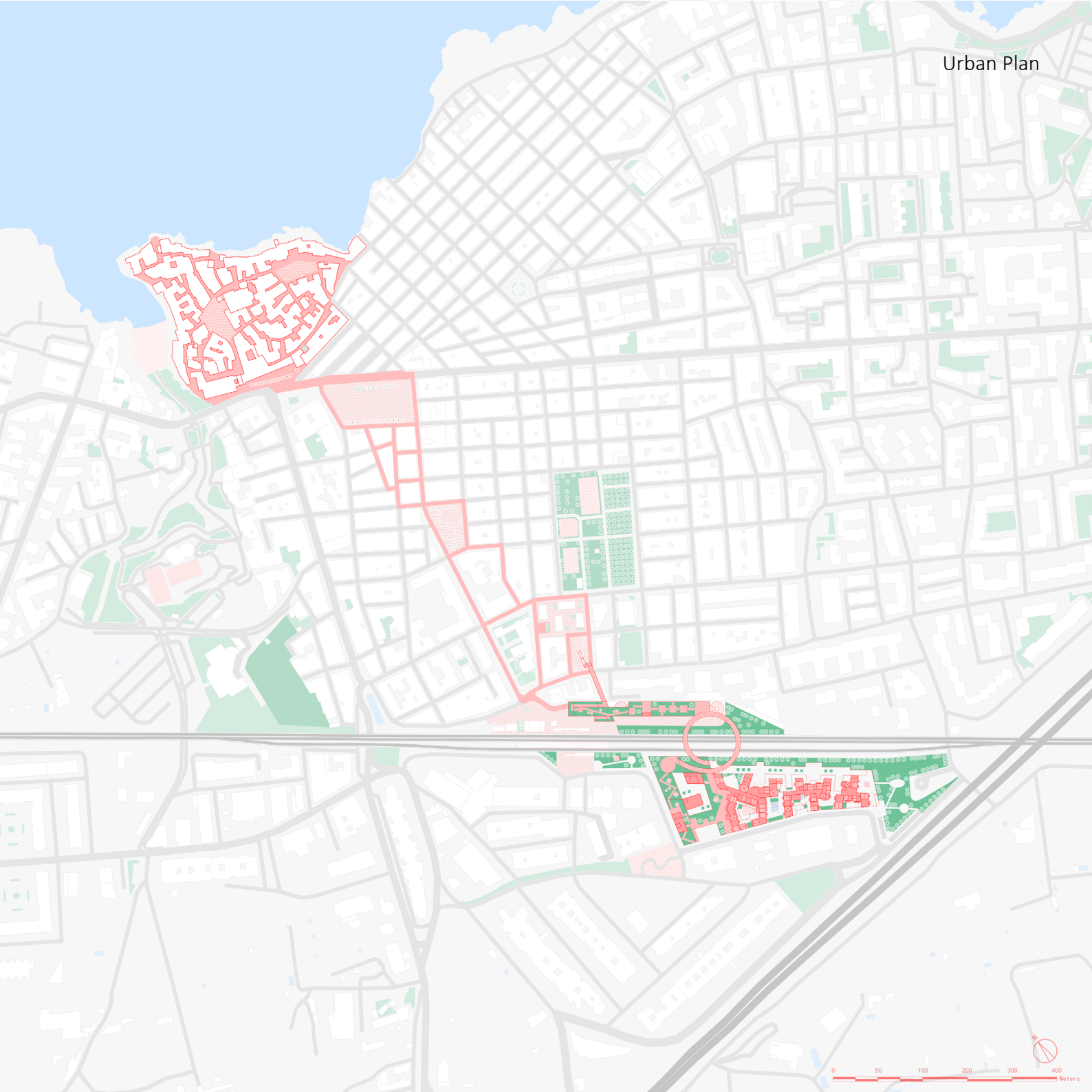
Project – Urban Relationship

The project repositions the two residual railway-edge sites as active components within the broader urban system of Polignano a Mare. By introducing a coherent spatial structure that extends existing paths, open spaces, and programmatic gradients, the proposal transforms previously disconnected land into a continuous urban sequence. The project's circulation spine and transversal connections re-establish Urban Continuity, creating smoother transitions across fragmented infrastructural barriers and linking the station area with both the gridded expansion district and the historic city.

At the scale of Memory, the project engages the old town not through imitation but through translation: its compact grain, layered courtyards, and sequential public spaces inform new organizational logics capable of sustaining contemporary patterns of dwelling. In doing so, the proposal begins to operate as a new kind of "historic center", one that draws from traditional spatial depth while projecting it into new urban conditions. In this way, historical identity becomes an operative layer rather than a symbolic reference, supporting the proposition of Historical Memory while enriching everyday spatial narratives.

In terms of Dwelling, mixed typologies and clustered forms introduce conditions for collective life, anchoring the proposition of Community Making. Public open spaces—plazas, gardens, and shared courtyards—extend the city's social infrastructure southward, reinforcing the Public Realm as a continuous layer.

Finally, infrastructural constraints are reframed as opportunities. Improved crossings, reorganized traffic flows, and buffered edges enhance Traffic Re-integration and Quiet Liveability, mitigating noise while strengthening multi-modal accessibility.


Urban Plan
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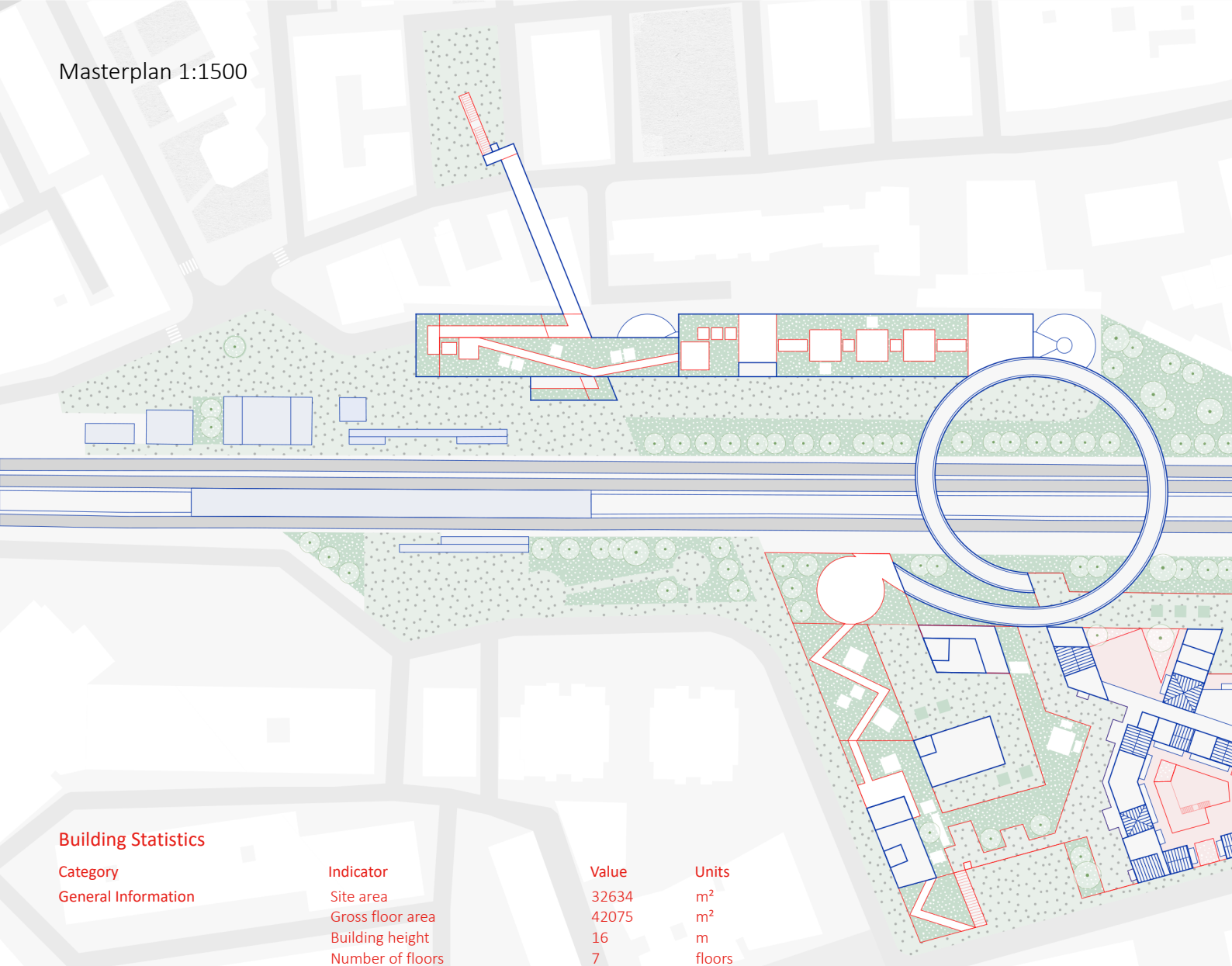
Meters

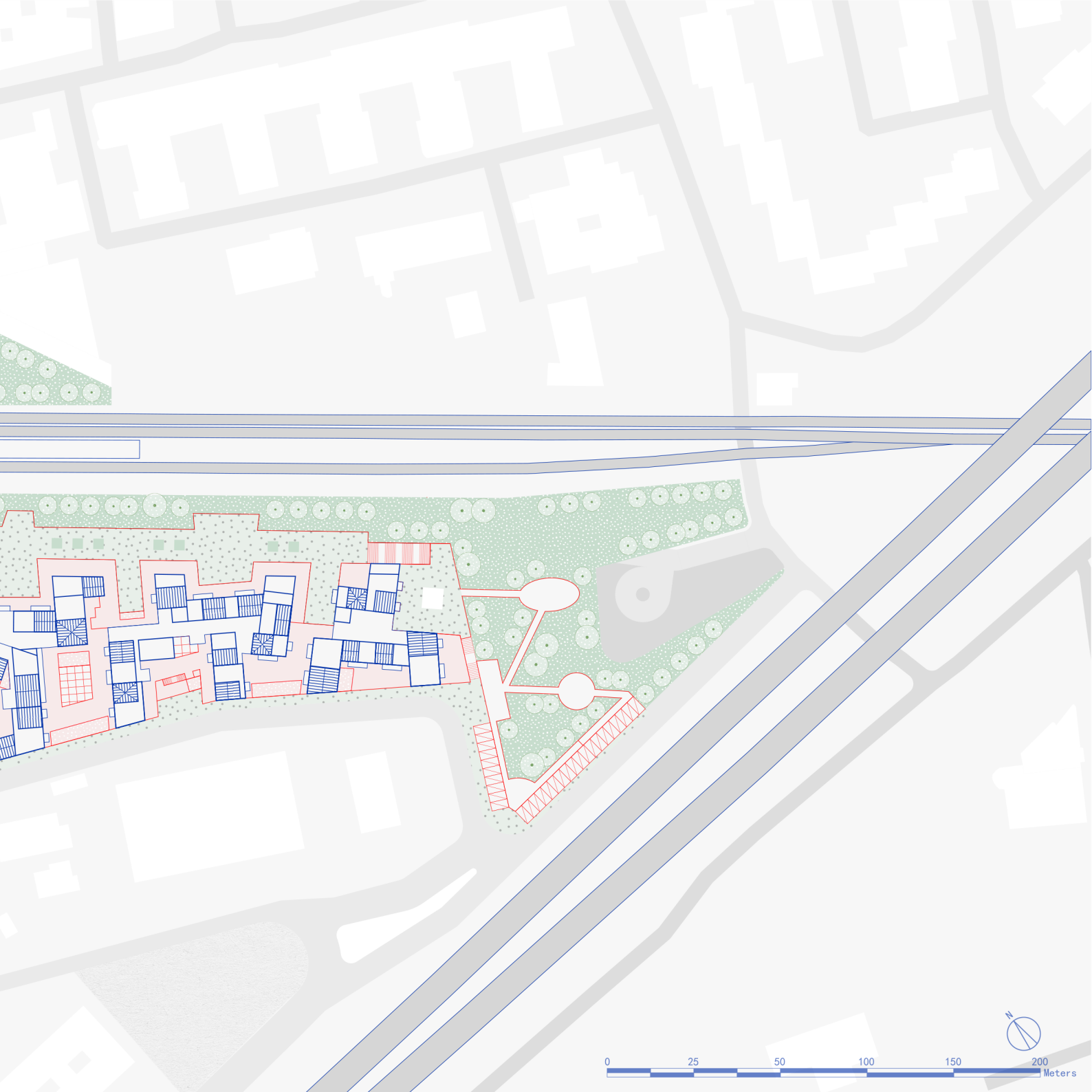
Urban Axonometric View

Masterplan 1:1500



Building Statistics

Category	Indicator	Value	Units
General Information	Site area	32634	m²
	Gross floor area	42075	m²
	Building height	16	m
	Number of floors	7	floors
	Number of residential units	76	units
Functional Area Breakdown	Residential area	10822	m²
	Commercial area	2225	m²
	Market area	8655	m²
	Green area	13581	m²
	Parking area	19103	m²
Parking	Multi-Storey parking	192	spaces
	Surface parking	29	spaces
	Underground parking	400	spaces
	Bicycle Parking	1475	spaces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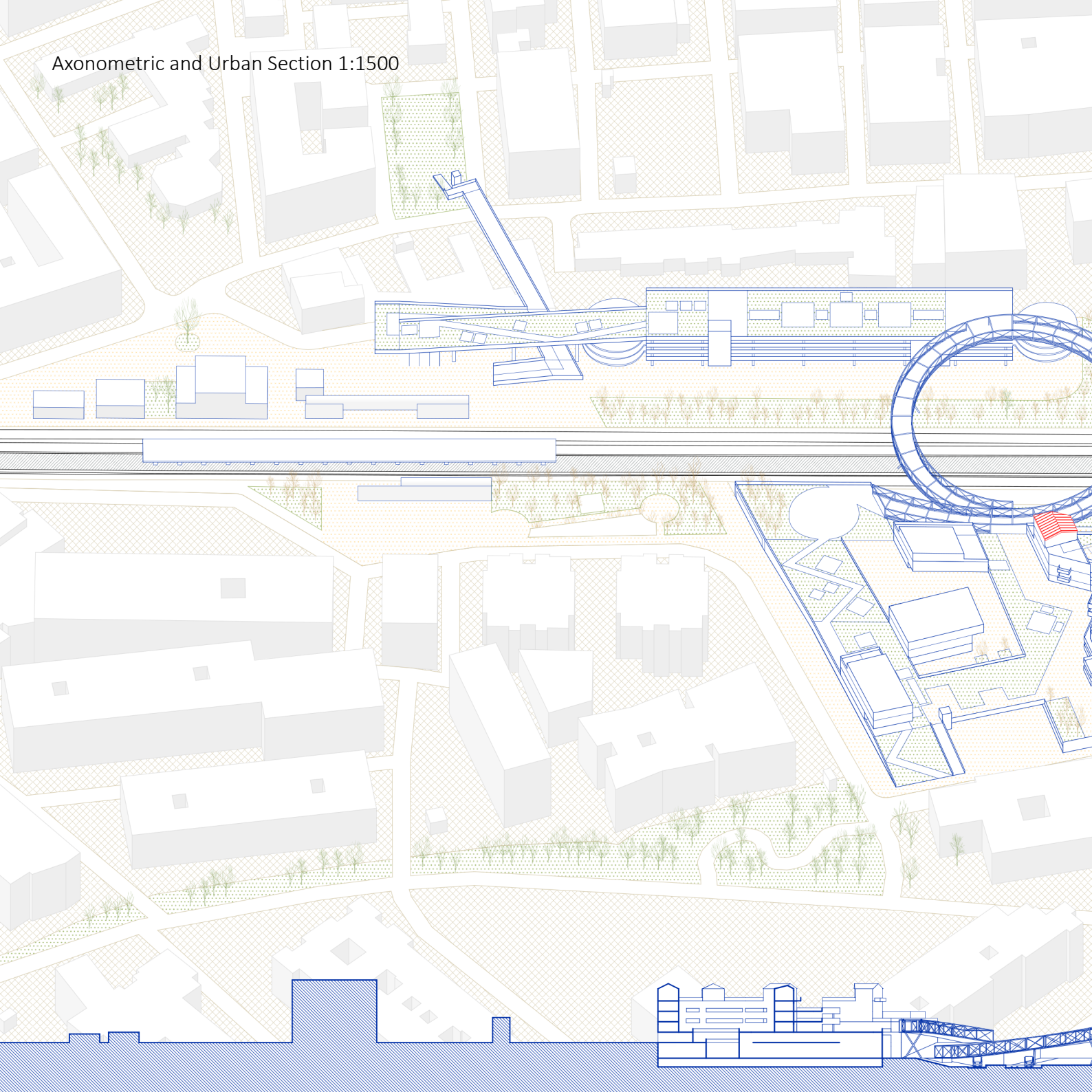
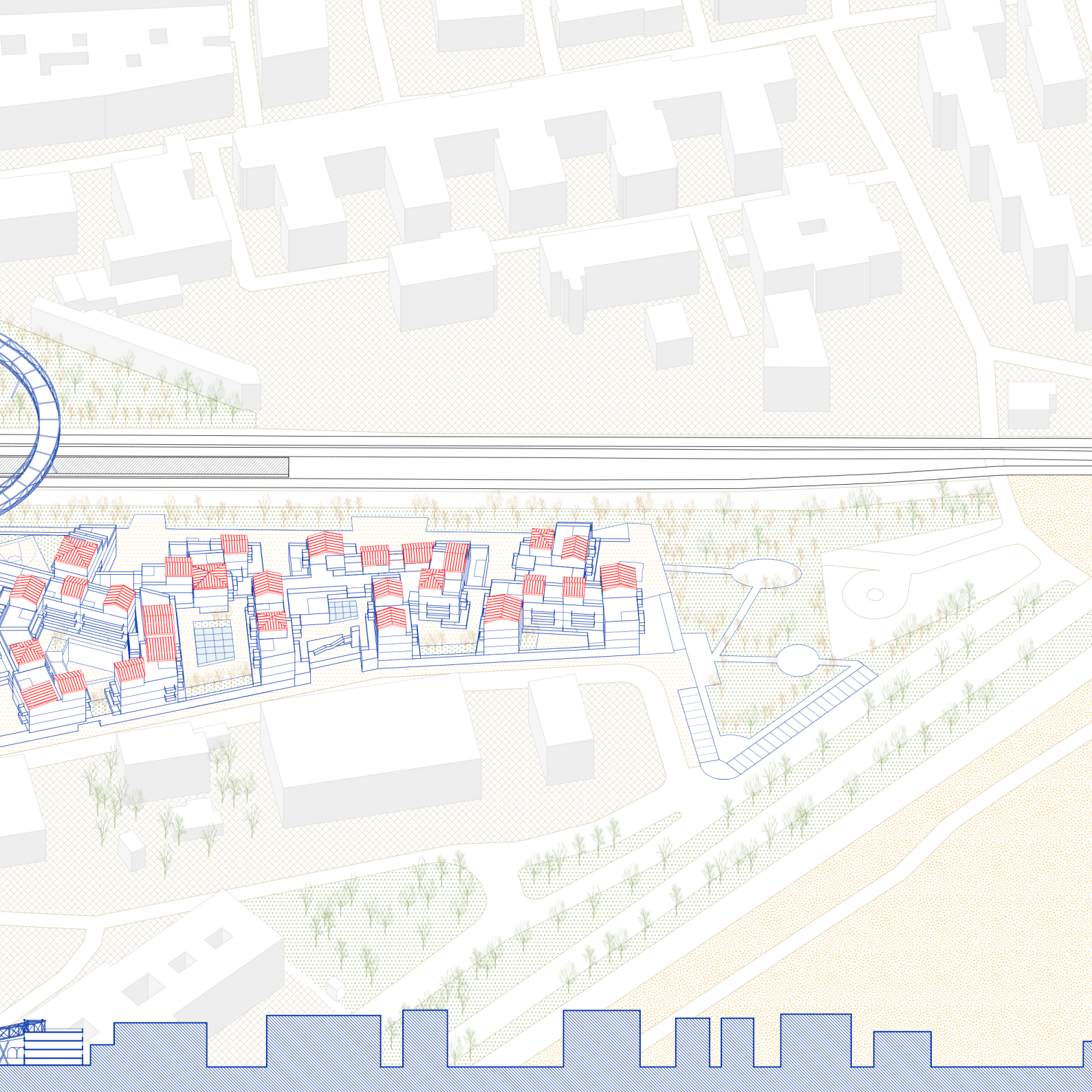
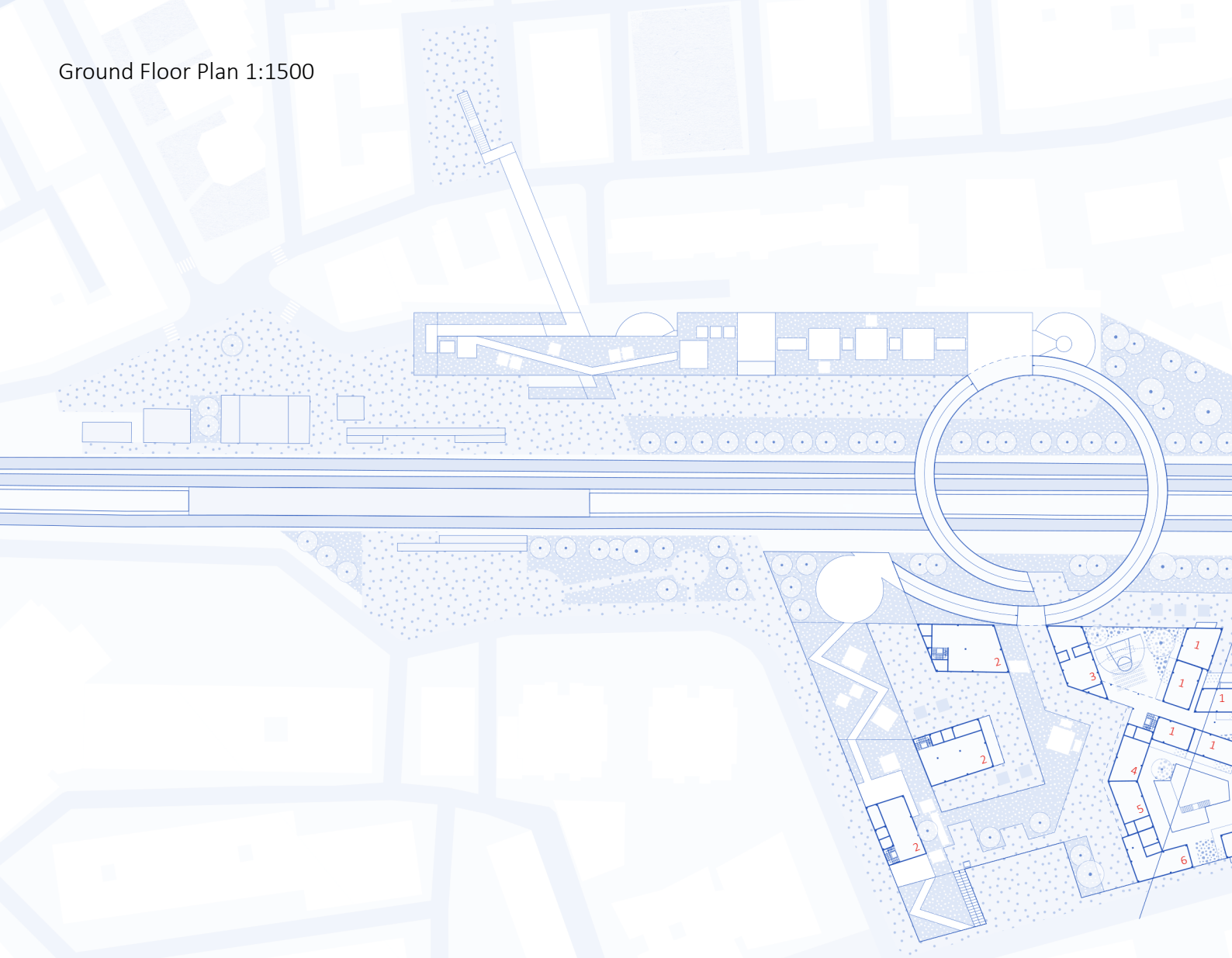
Axonometric and Urban Section 1:1500

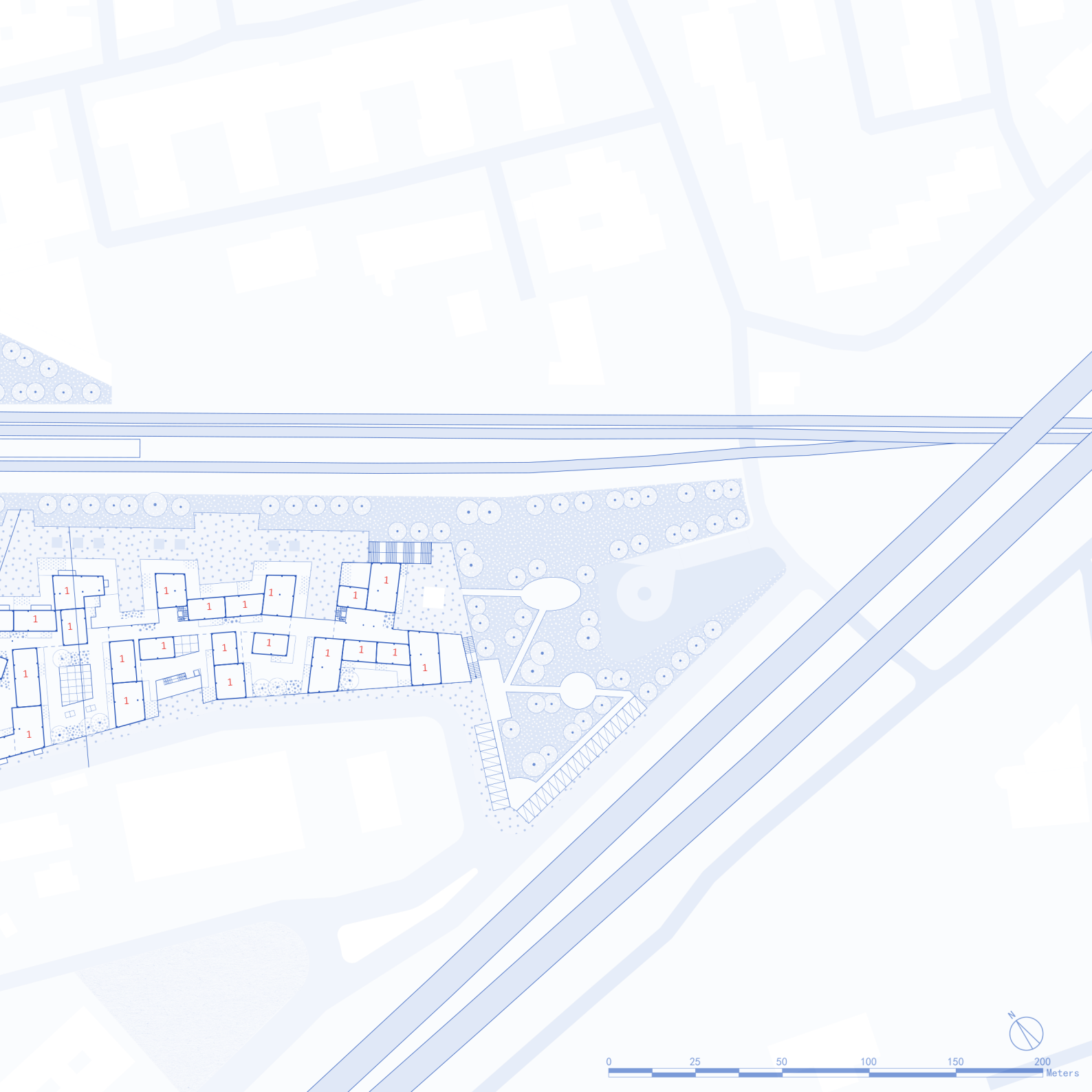




Ground Floor Plan 1:1500



1. Residential unit
2. Co-working & Office
3. Multipurpose hall
4. Maker space
5. Handmade products gallery
6. Handmade products sales & Café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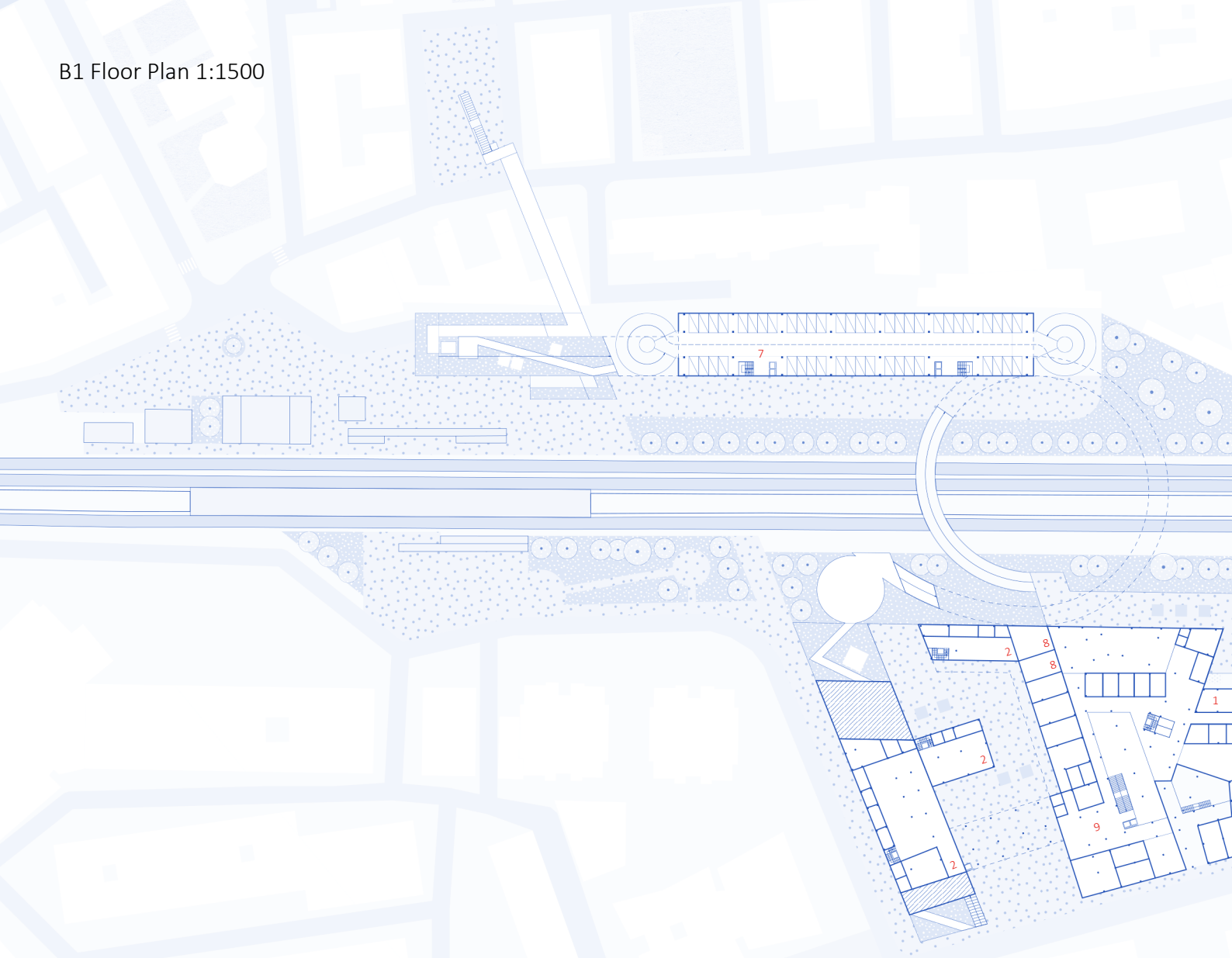
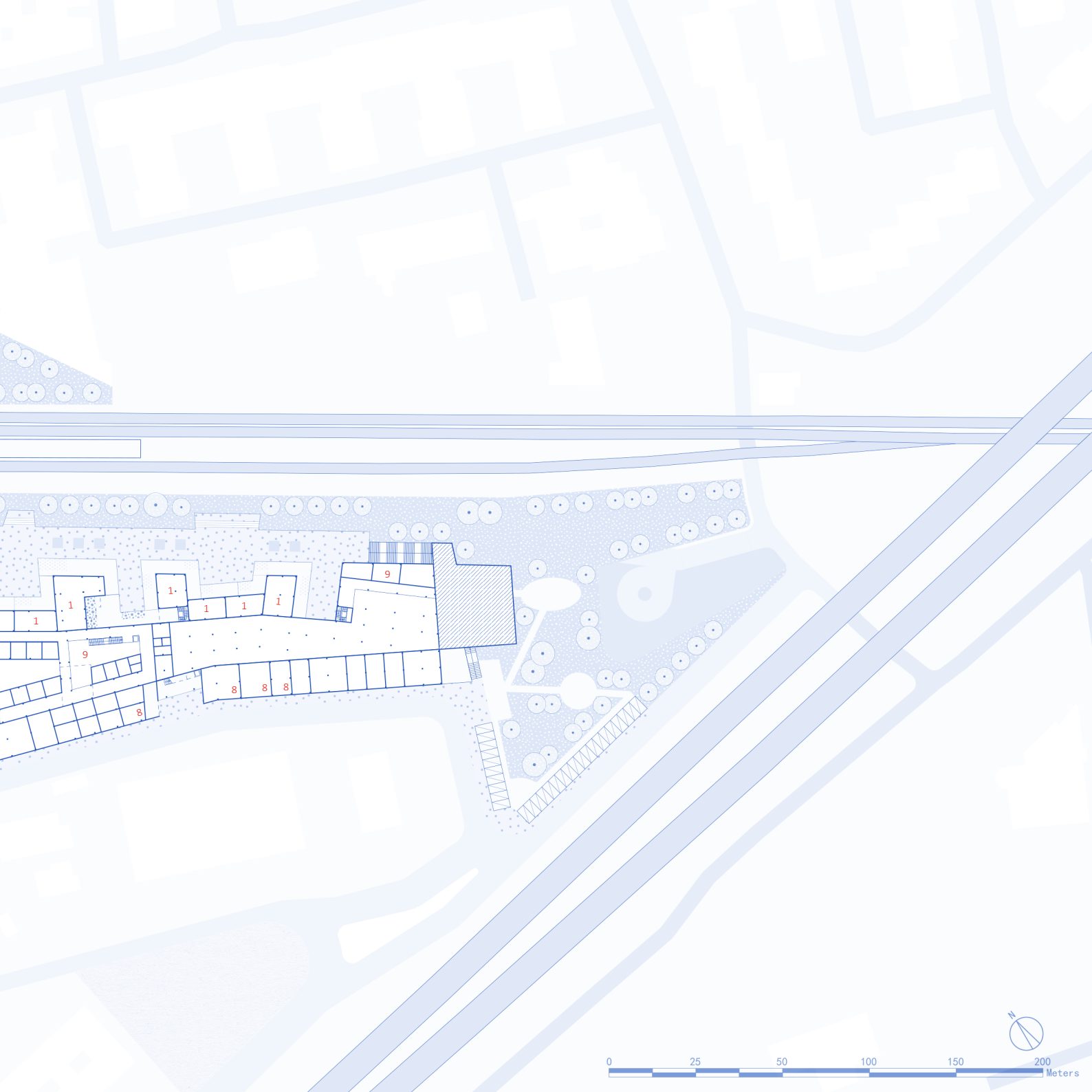
B1 Floor Plan 1:1500



1. Residential unit
2. Co-working & Office
3. Multipurpose hall
4. Maker space
5. Handmade products gallery
6. Handmade products sales & Café
7. Multi-Storey parking
8. Commercial & Retail
9. Market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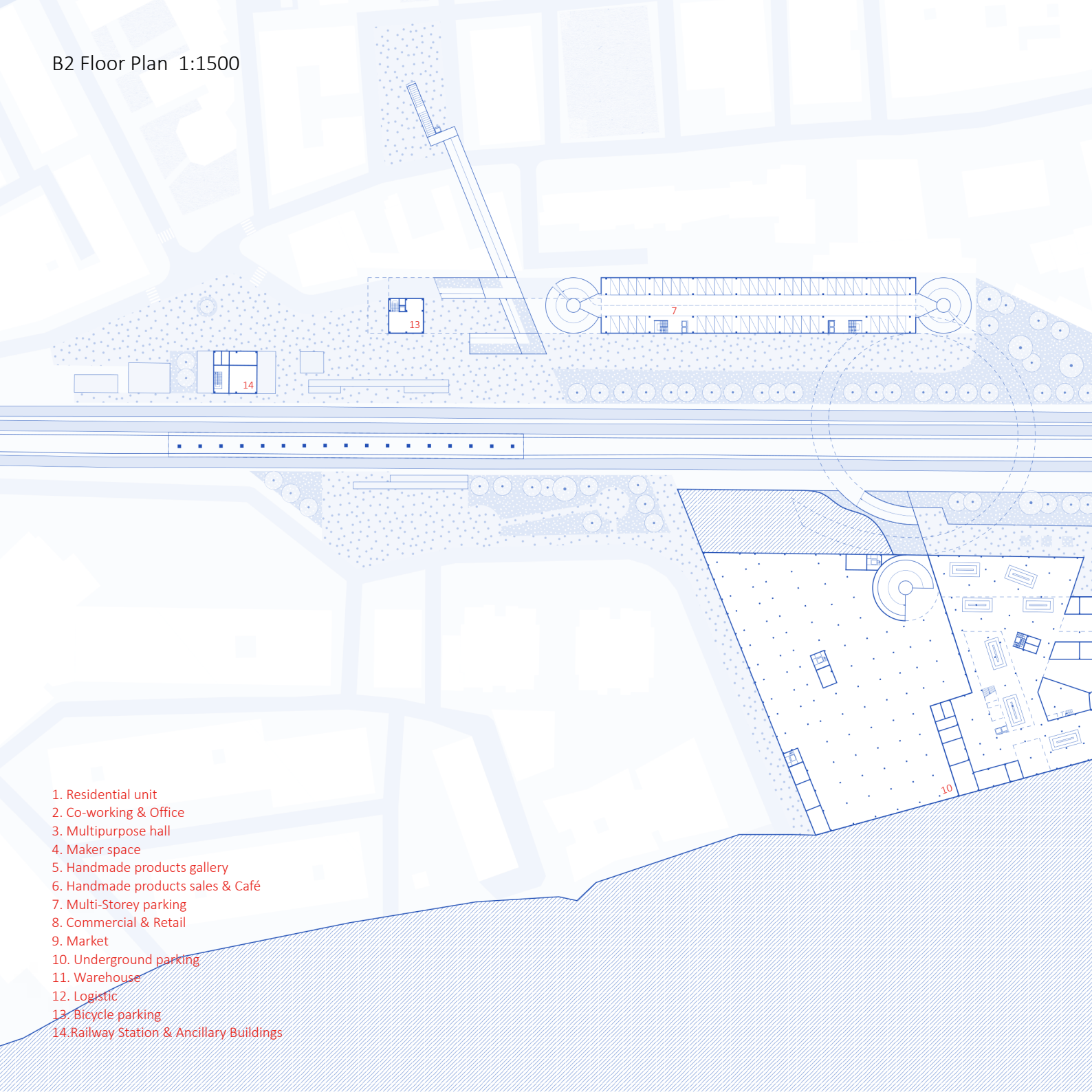
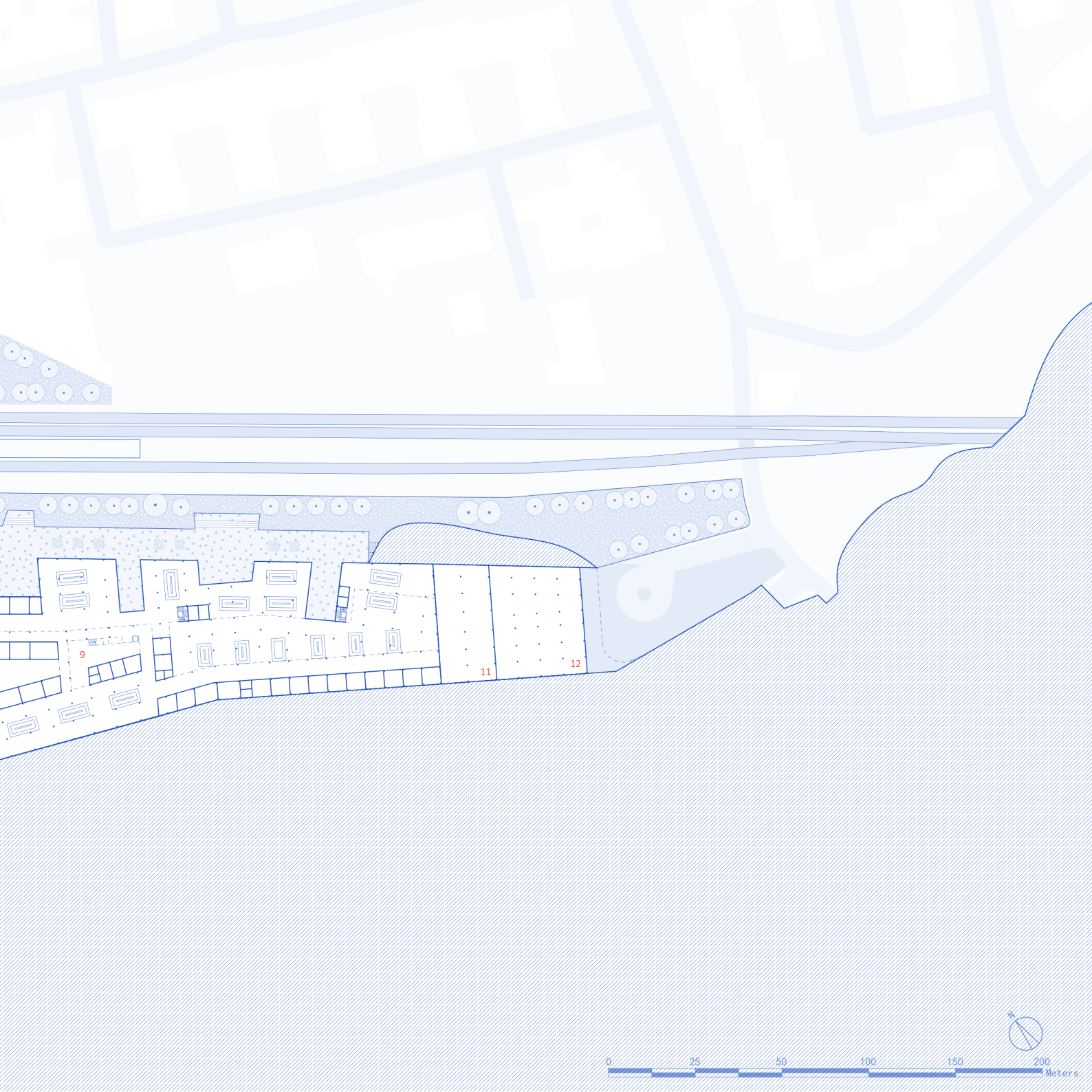
B2 Floor Plan 1:1500



1. Residential unit
2. Co-working & Office
3. Multipurpose hall
4. Maker space
5. Handmade products gallery
6. Handmade products sales & Café
7. Multi-Storey parking
8. Commercial & Retail
9. Market
10. Underground parking
11. Warehouse
12. Logistic
13. Bicycle parking
14. Railway Station & Ancillary Buildings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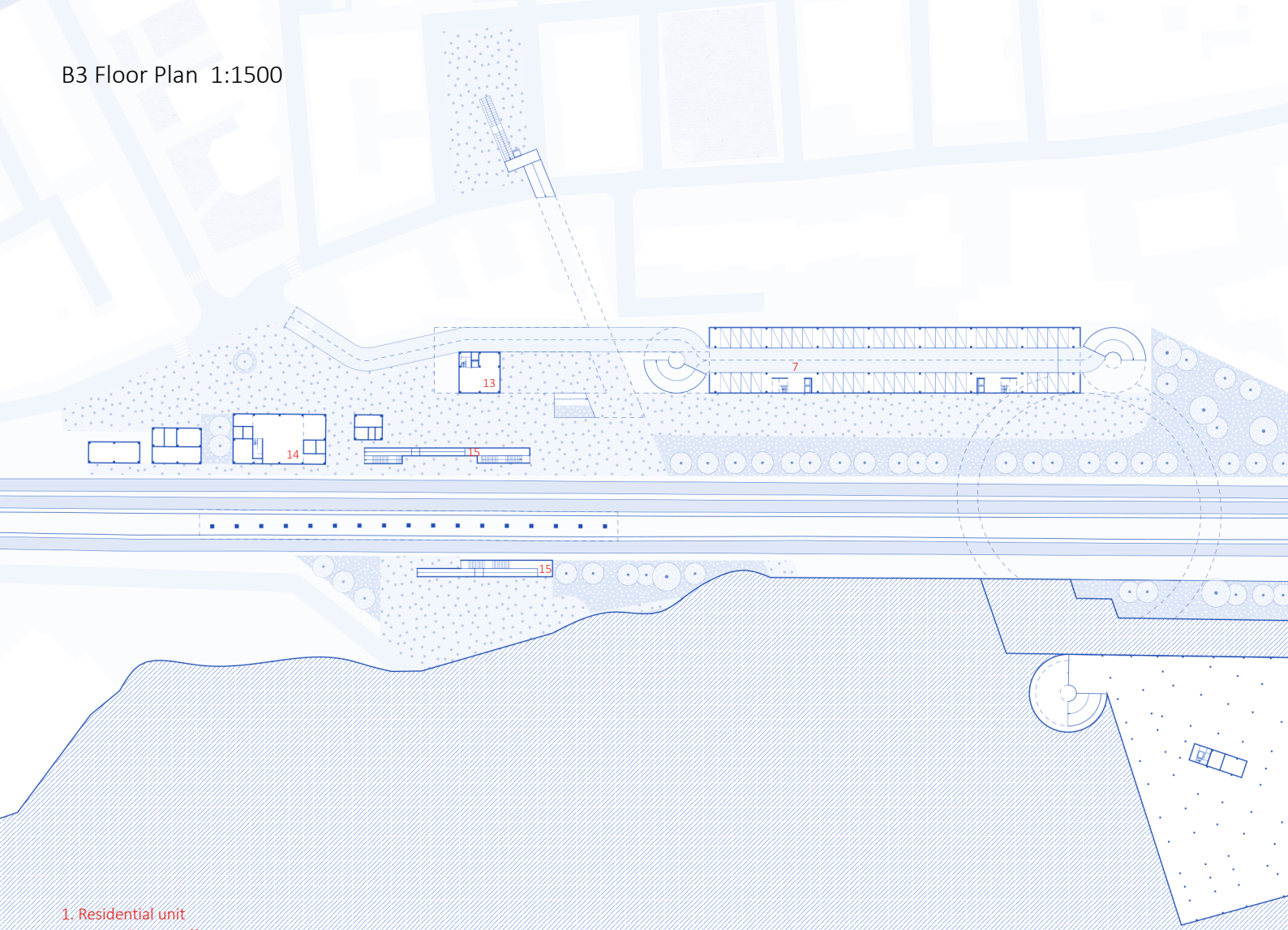
Meters

B3 Floor Plan 1:1500



1. Residential unit
2. Co-working & Office
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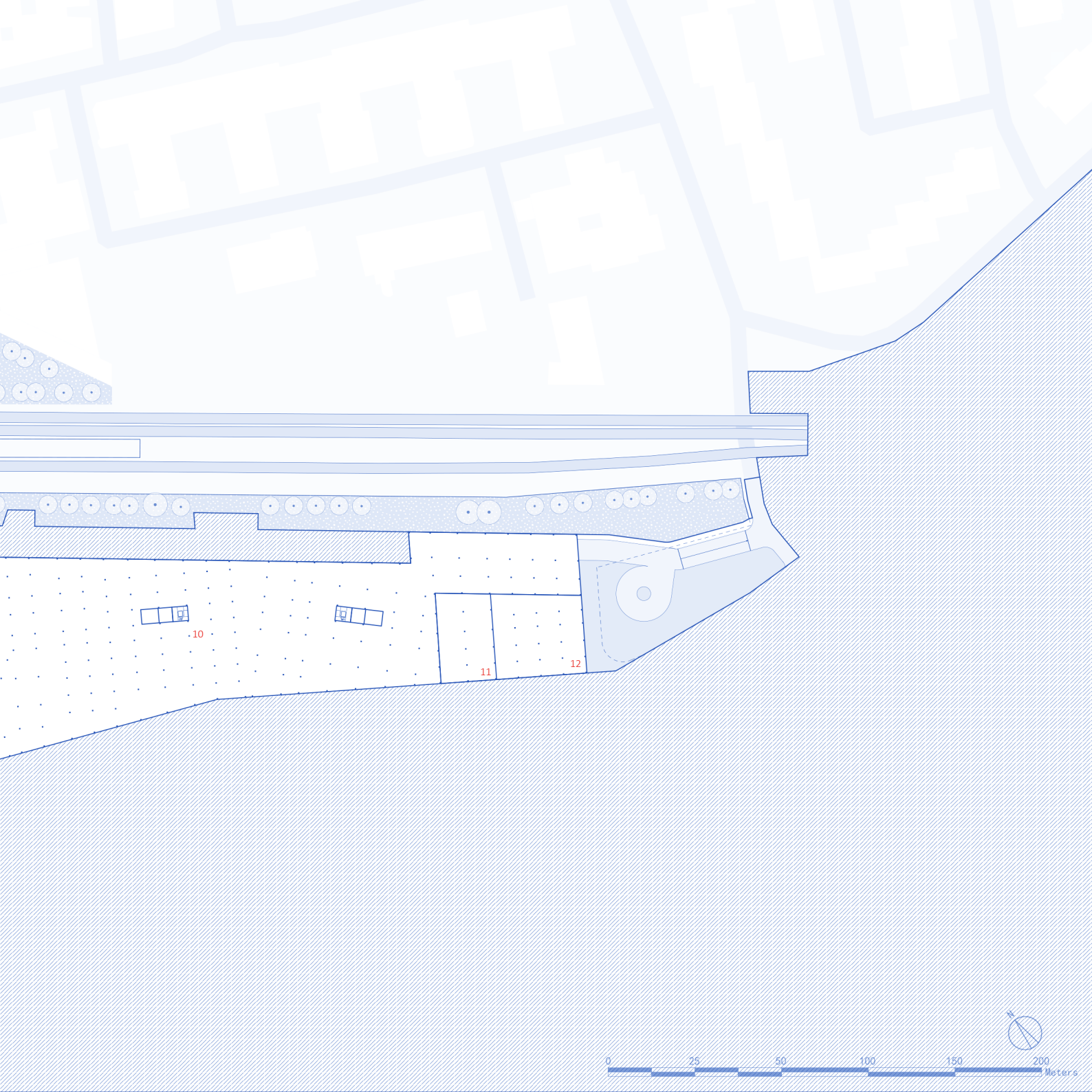
4. Maker space
5. Handmade products gallery
6. Handmade products sales & Café
7. Multi-Storey parking
8. Commercial & Retail
9. Market
10. Underground parking
11. Warehouse
12. Logistic
13. Bicycle parking
14. Railway Station & Ancillary Buildings
15. Underpass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11
12
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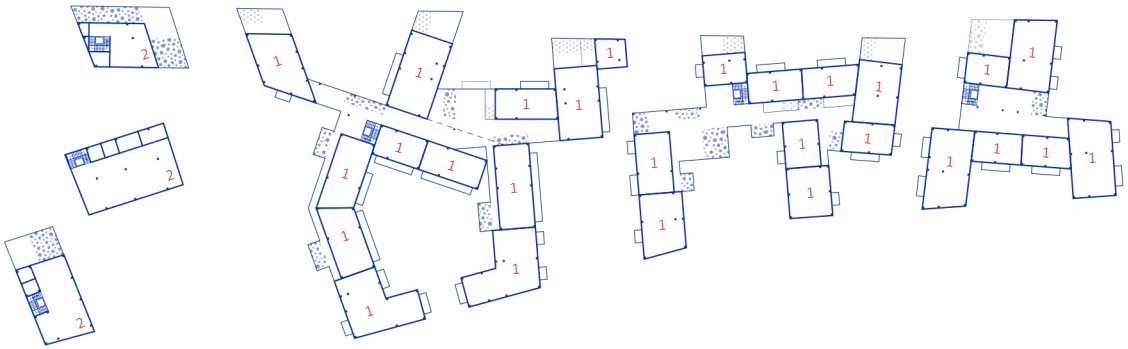
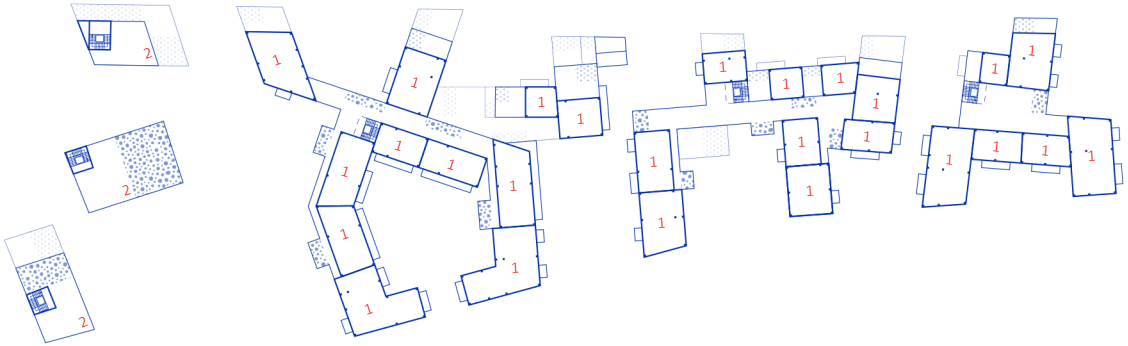
50
100
150
200
Meters

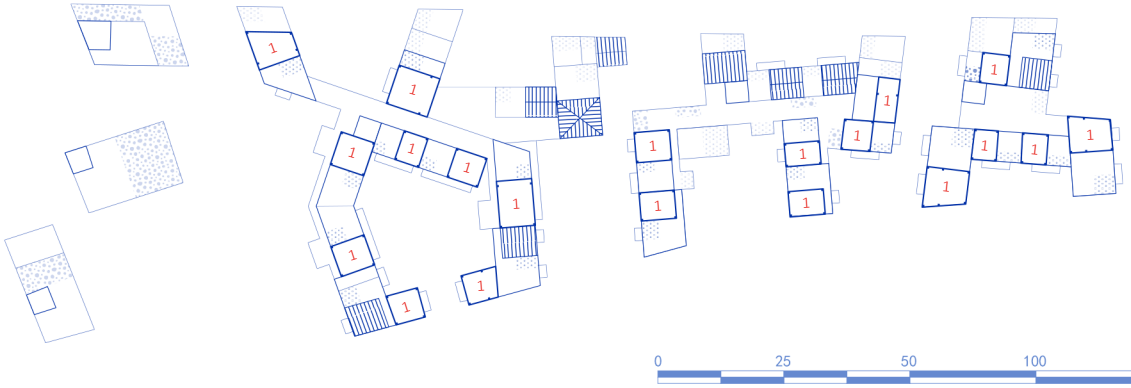
1F Floor Plan 1:1500



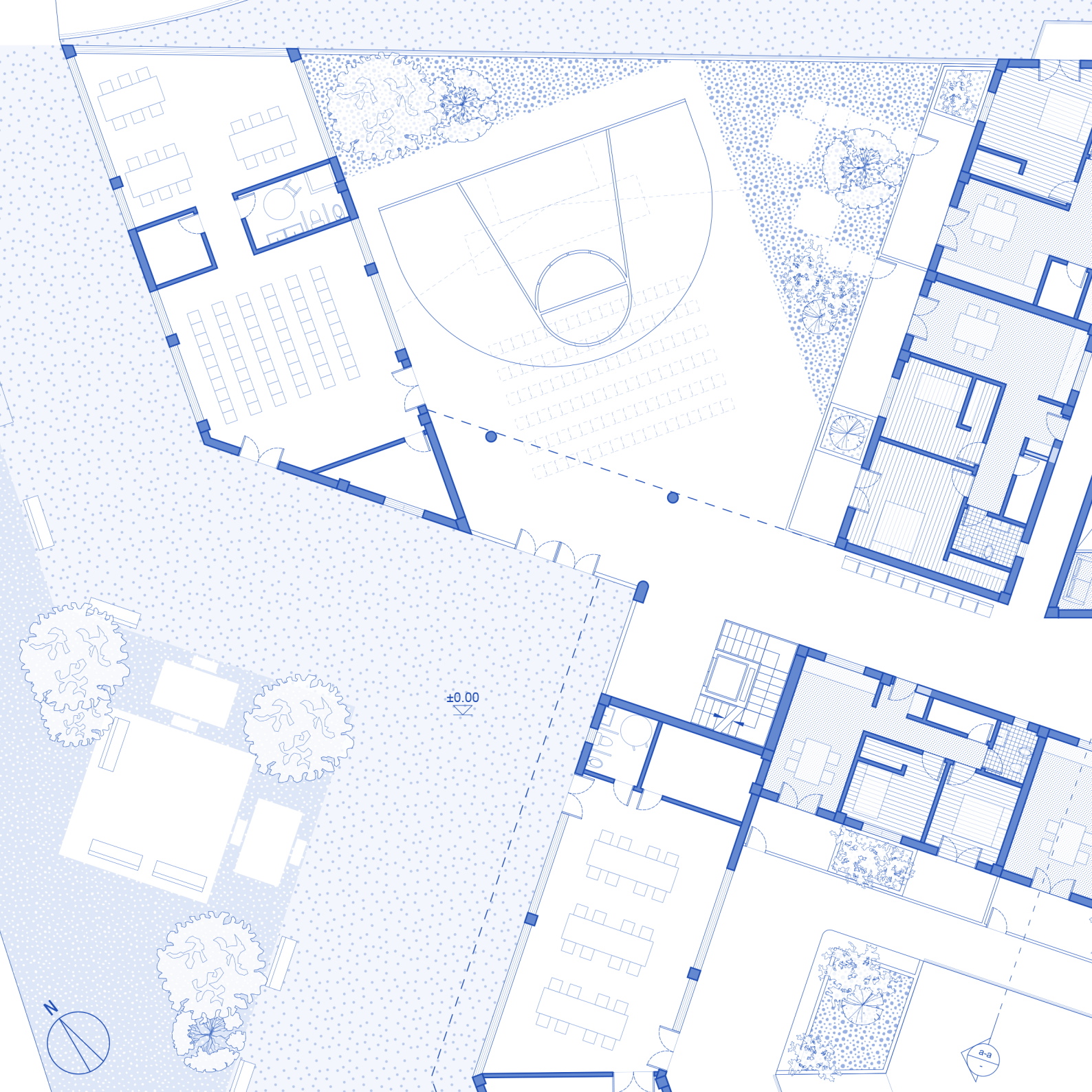
2F Floor Plan 1:1500



3F Floor Plan 1:1500



1. Residential unit
2. Co-working & Office
3. Multipurpose hall
4. Maker space
5. Handmade products gallery
6. Handmade products sales & Café
7. Multi-Storey parking
8. Commercial & Retail
9. Market
10. Underground parking
11. Warehouse
12. Logistic
13. Bicycle parking
14.Railway Station & Ancillary Buildings
15. Underpass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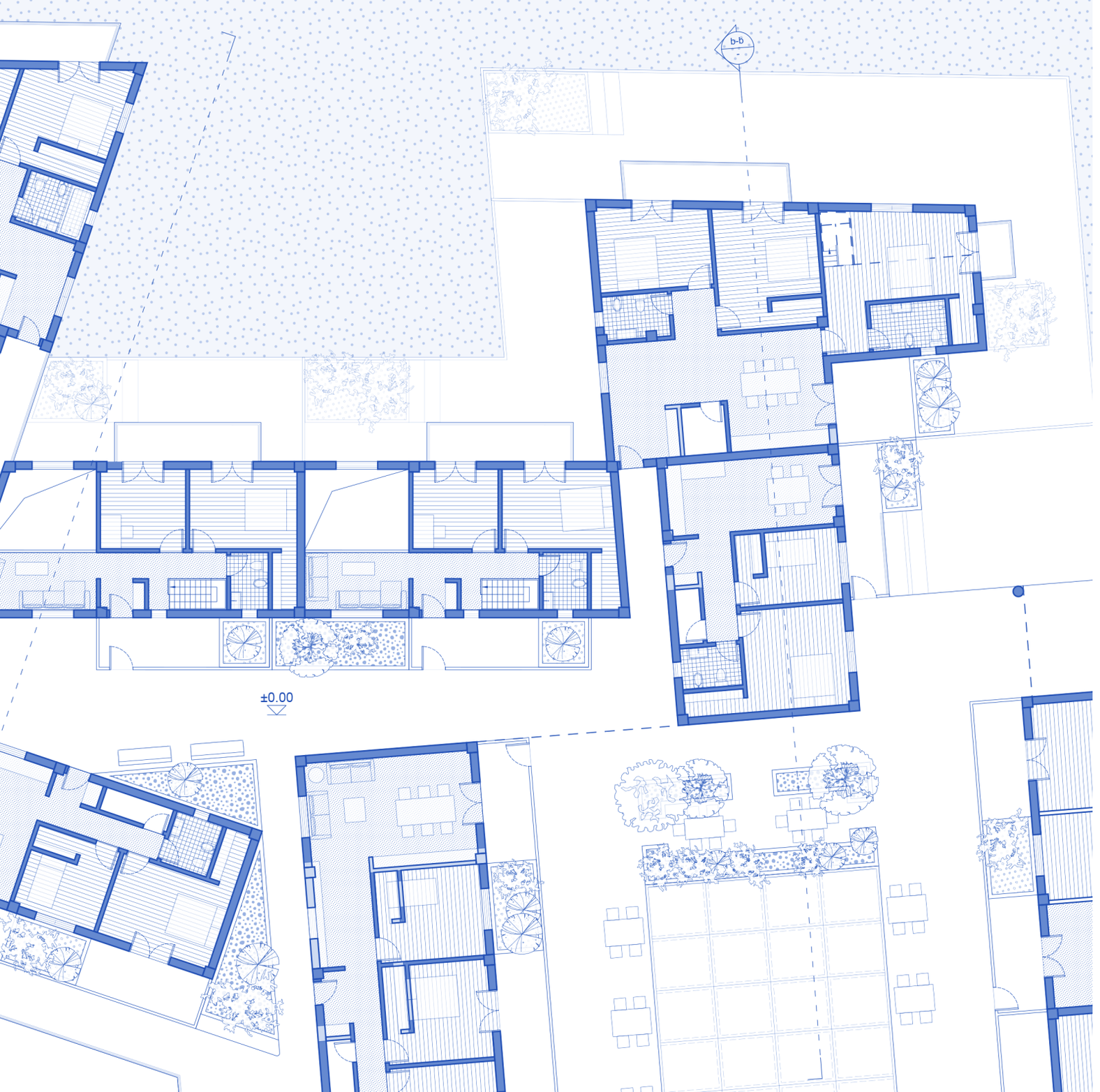
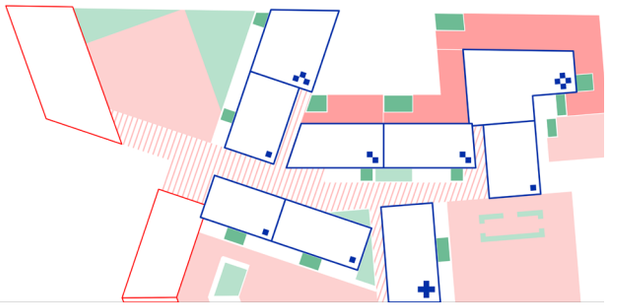
a-a



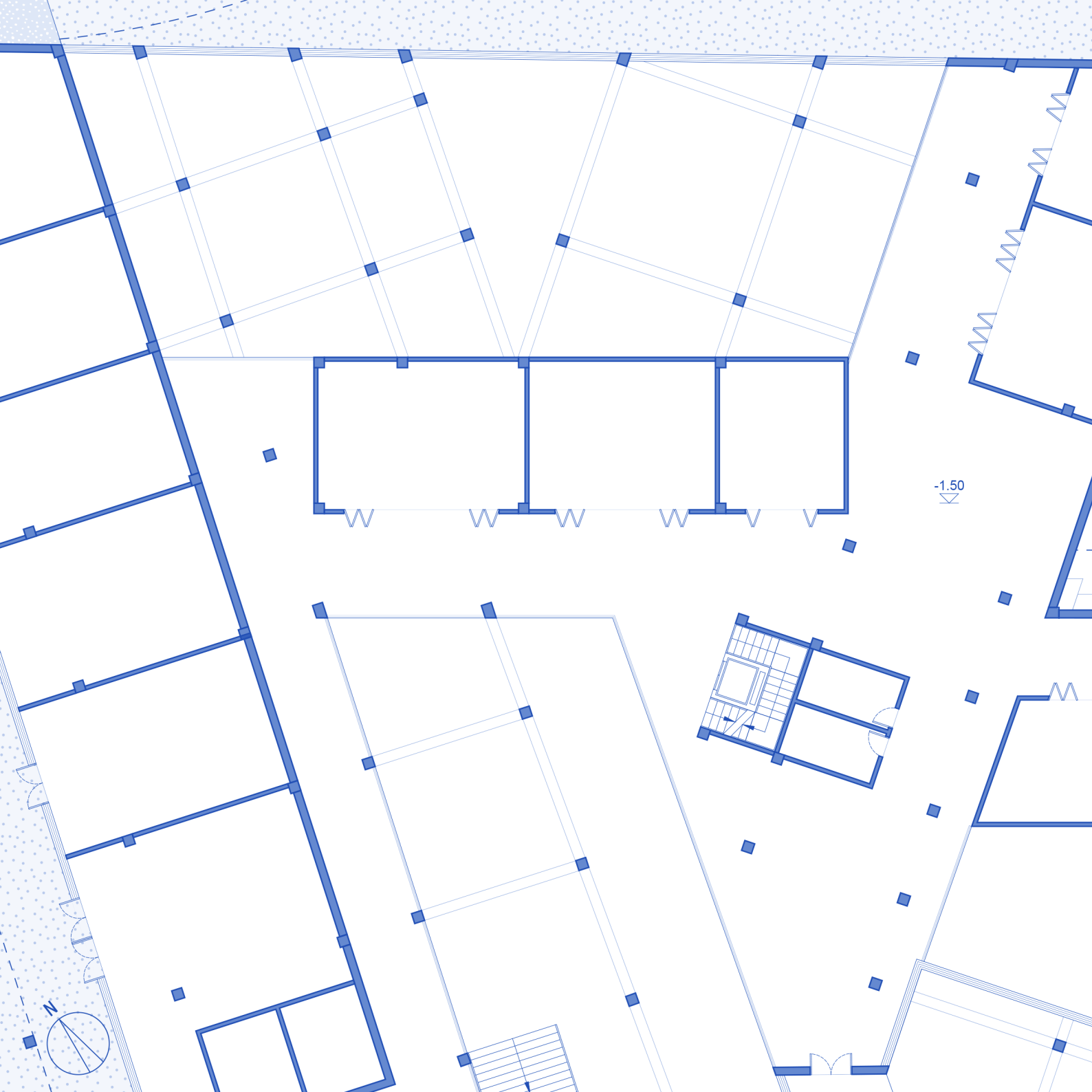


Private terrace
Private greenery
Public room
Public courtyard
Public greenery
Corridor
Residential unit

- **Residential type 1**
  A single-floor residence with two bedrooms, located along the central spine and oriented toward the inner courtyard.
- **Residential type 2**
  A duplex loft layout with four bedrooms and a soaring double-height living space.
- **Residential type 3**
  A one-floor unit with two bedrooms, positioned on the wing.
- **Residential type 4**
  A two-story dwelling with two bedrooms and a designated extendable portion, allowing future expansion into a rooftop room and private terrace.
- **Residential type 5**
  A one-floor unit with three bedrooms, positioned on the wing.

Bedroom
Open area
Bathroom

Ground Floor Plan 1:200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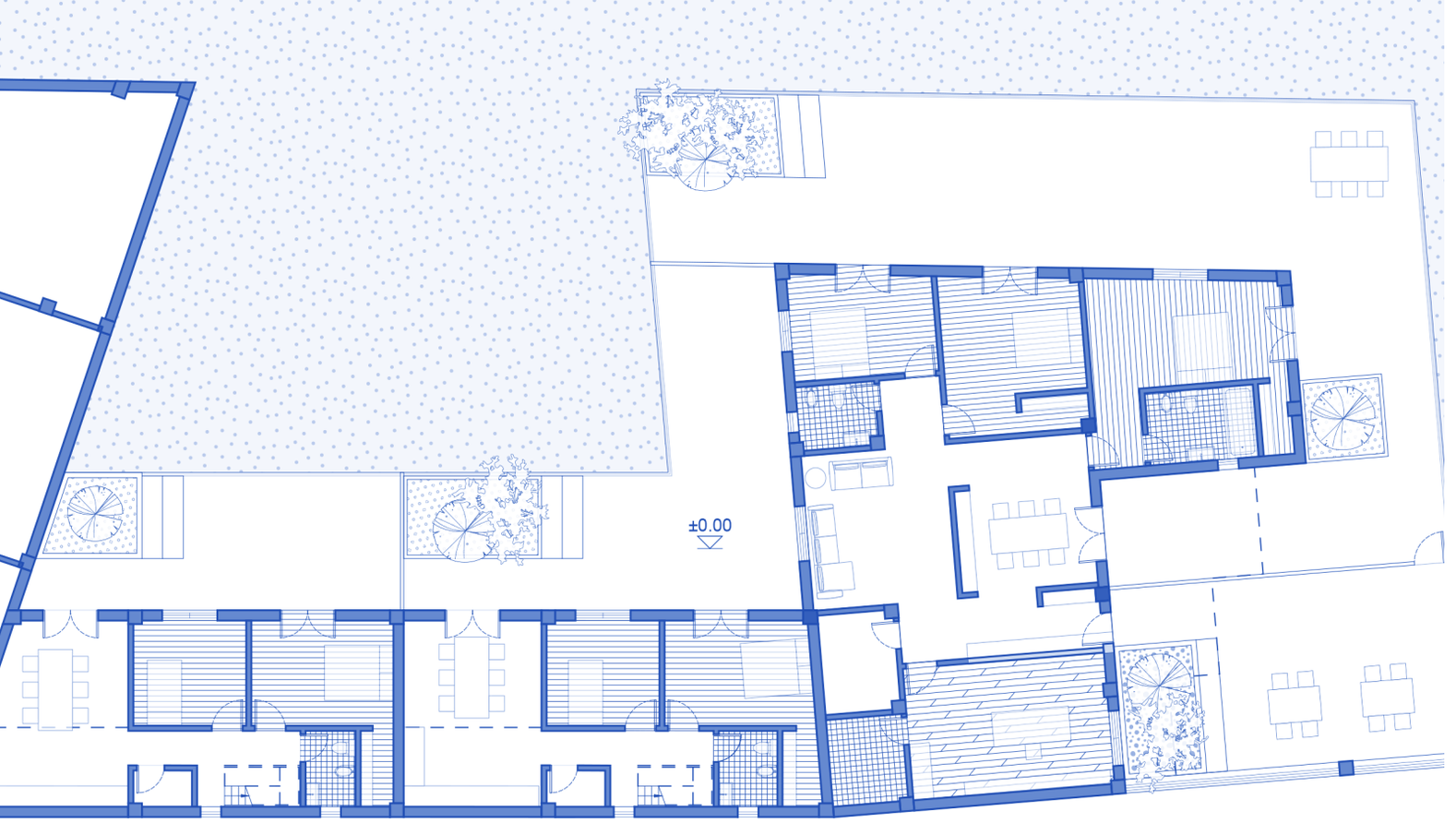
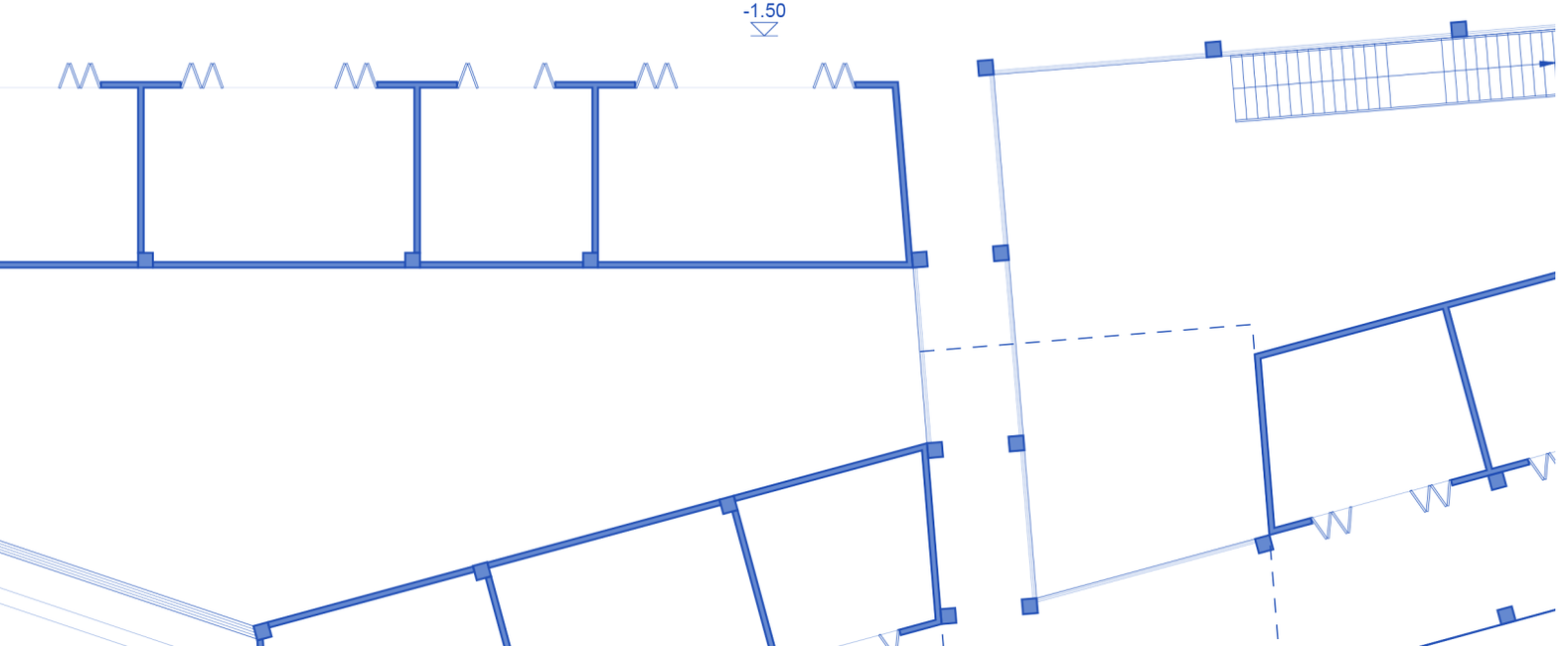
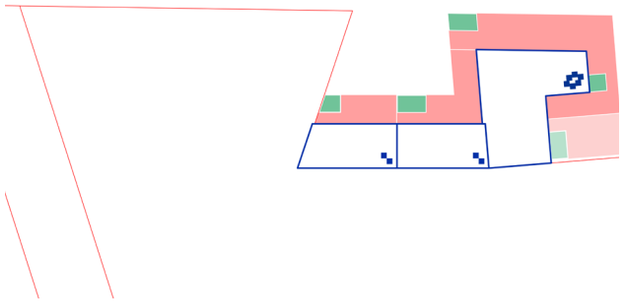






- Private terrace
- Public courtyard
- Market & Commercial
- Residential unit
- Private greenery
- Public greenery

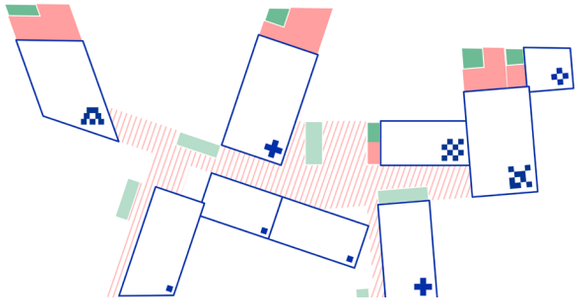
Residential type 2
A duplex loft layout with four bedrooms and a soaring double-height living space.

Residential type 6
A one-floor residence offering two bedrooms and a study, with an adaptable zone for future extension as needs evolve.

- Bedroom
- Open area
- Bathroom
- Study room

B1 Floor Plan 1:200


N



Private terrace
Private greenery
Corridor
Public courtyard
Public greenery
Residential unit

Residential type 1
A single-floor residence with two bedrooms, located along the central spine and oriented toward the inner courtyard.

Residential type 4
A two-story dwelling with two bedrooms and a designated extendable portion, allowing future expansion into a rooftop room and private terrace.

Residential type 5
A one-floor unit with three bedrooms, positioned on the wing.

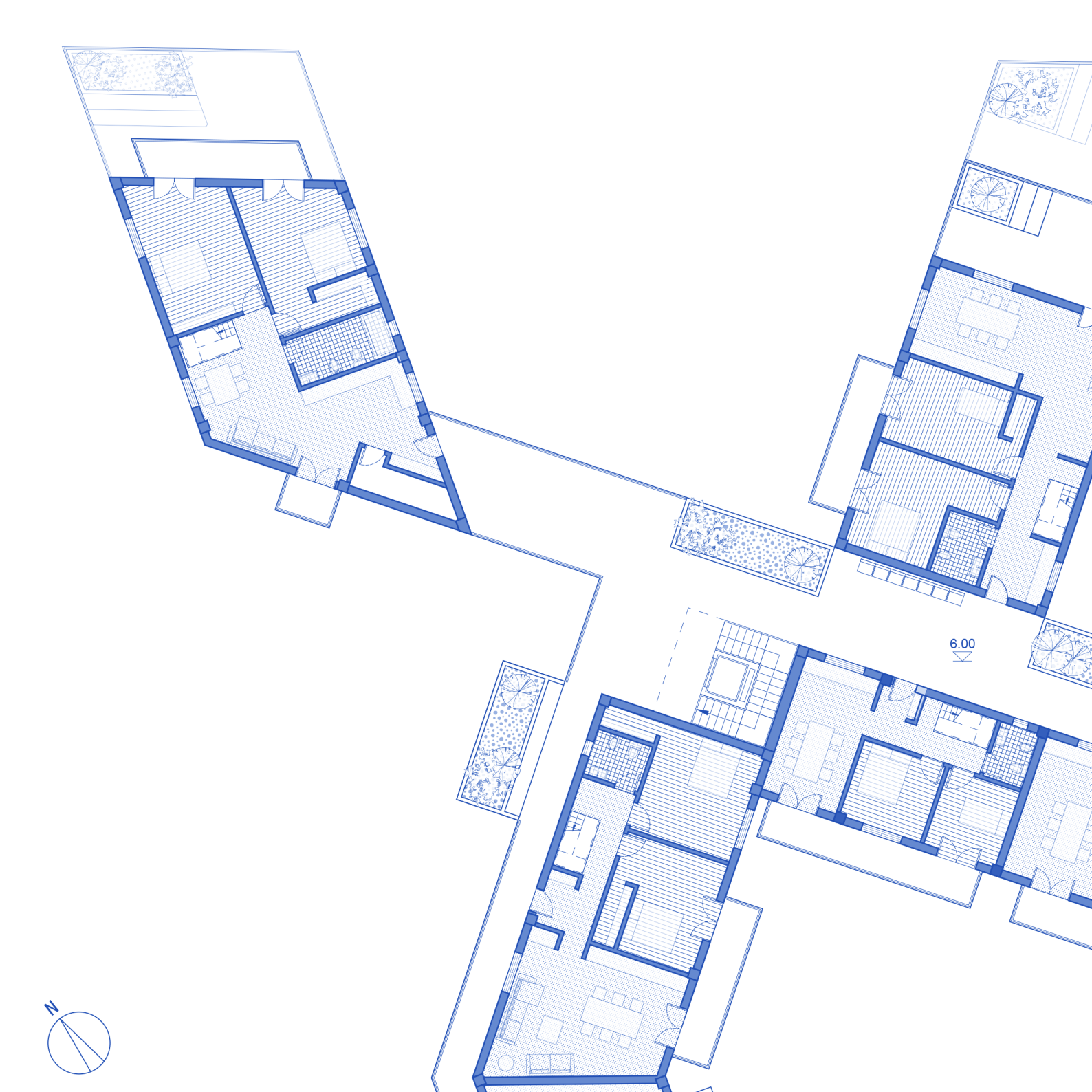
Residential type 7
A single-floor two-bedroom unit featuring a private outdoor terrace.

Residential type 8
A two-level penthouse with two bedrooms and a study, complete with a private rooftop terrace.

Residential type 9
A two-level penthouse with four bedrooms, complete with a private rooftop terrace.

Bedroom
Open area
Bathroom

1F Floor Plan 1:200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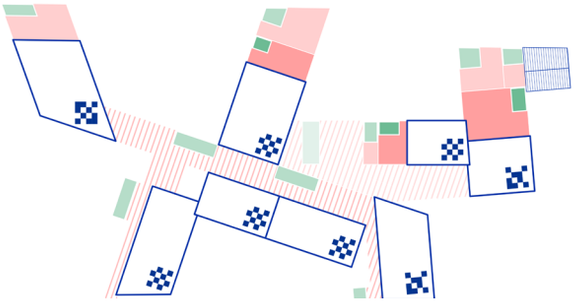


Private terrace
Private greenery
Corridor
Public courtyard
Public greenery
Residential unit

Residential type 8
A two-level penthouse with two bedrooms and a study, complete with a private rooftop terrace.

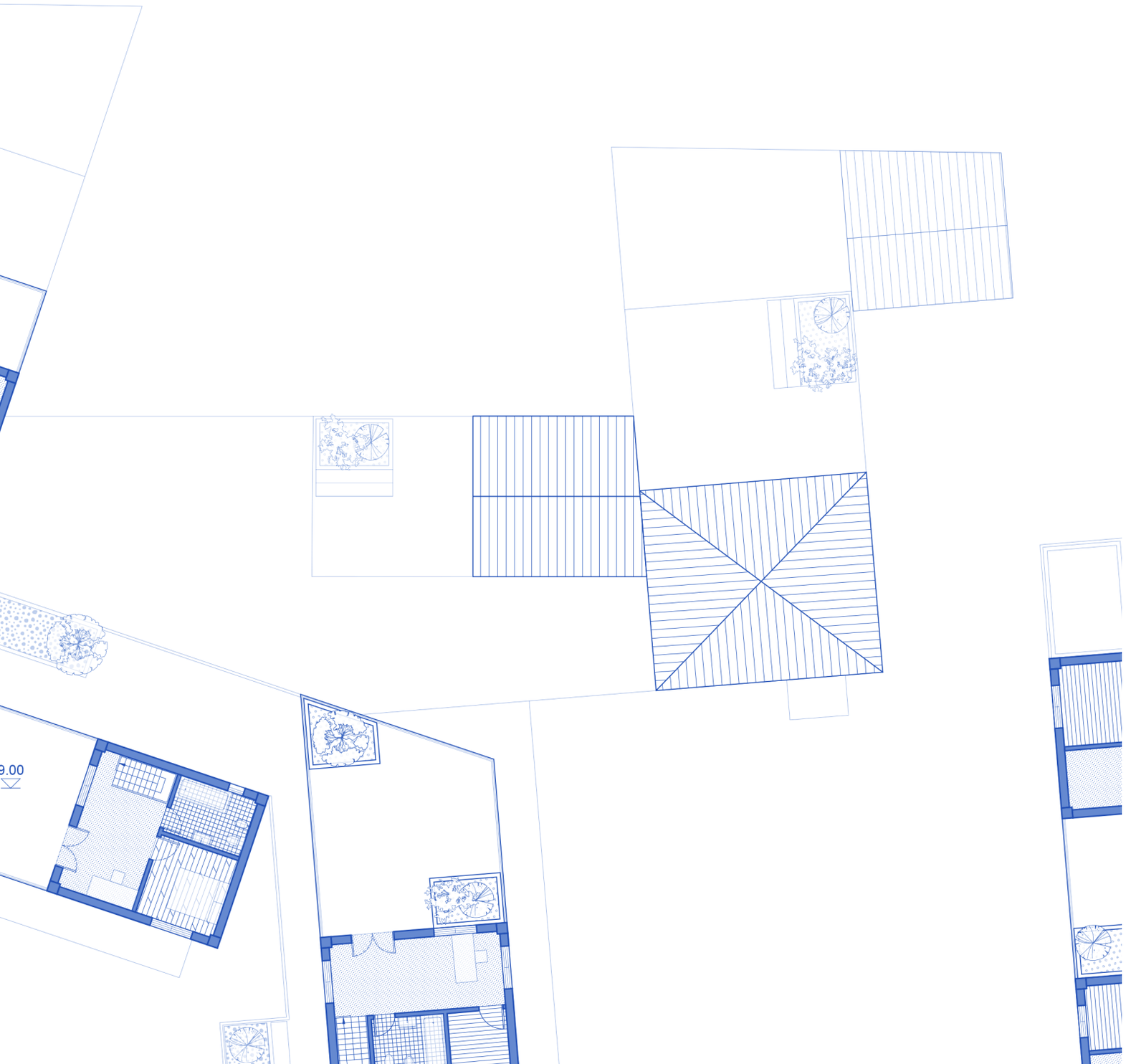
Residential type 9
A two-level penthouse with four bedrooms, complete with a private rooftop terrace.

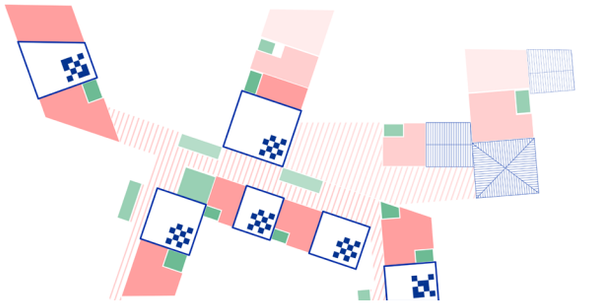
Residential type 10
A duplex penthouse configuration with two bedrooms and a study, defined by a non-orthogonal parallelogram plan and a private roof terrace.

Bedroom
Open area
Bathroom

2F Floor Plan 1:200


N





Private terrace
Private greenery
Corridor
Public courtyard
Public greenery
Residential unit

Residential type 8
A two-level penthouse with two bedrooms and a study, complete with a private rooftop terrace.

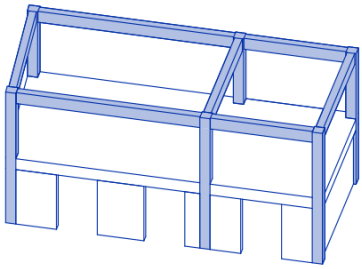
Residential type 9
A two-level penthouse with four bedrooms, complete with a private rooftop terrace.

Residential type 10
A duplex penthouse configuration with two bedrooms and a study, defined by a non-orthogonal parallelogram plan and a private roof terrace.

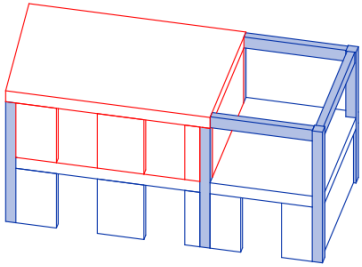
Bedroom
Open area
Bathroom
Study room

3F Floor Plan 1:200

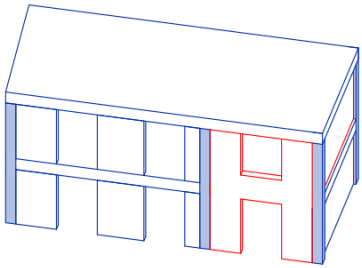
Type 2



Step 1- 73m²

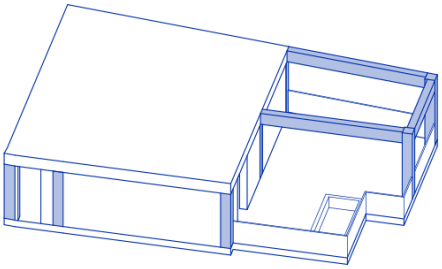


Step 2- 122m²



Step 3- 146m²

Type 4



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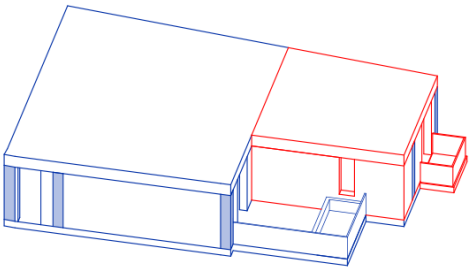
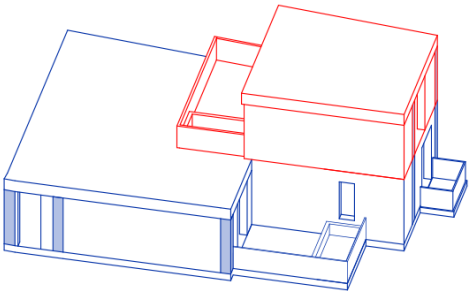
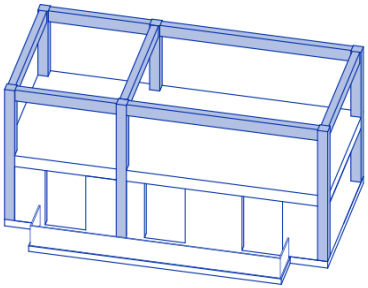


Step 2- 117m²

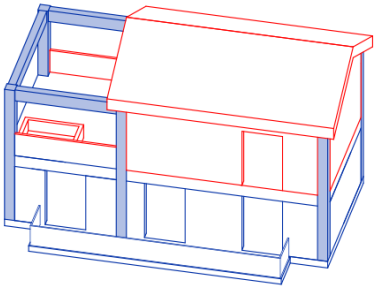


Step 3- 151m²

Type 8



Step 1- 74m²



Step 2- 112m²

Residential Space Evolution

Type 2

Residential Type 2 evolves from a simple two-storey structural frame into a flexible duplex dwelling. The initial layout contains two bedrooms and one bathroom; later expansion introduces four bedrooms, two bathrooms, and a generous roof terrace. In its final step, the unit accommodates either a soaring double-height living space or an additional compact studio, allowing diverse living configurations.

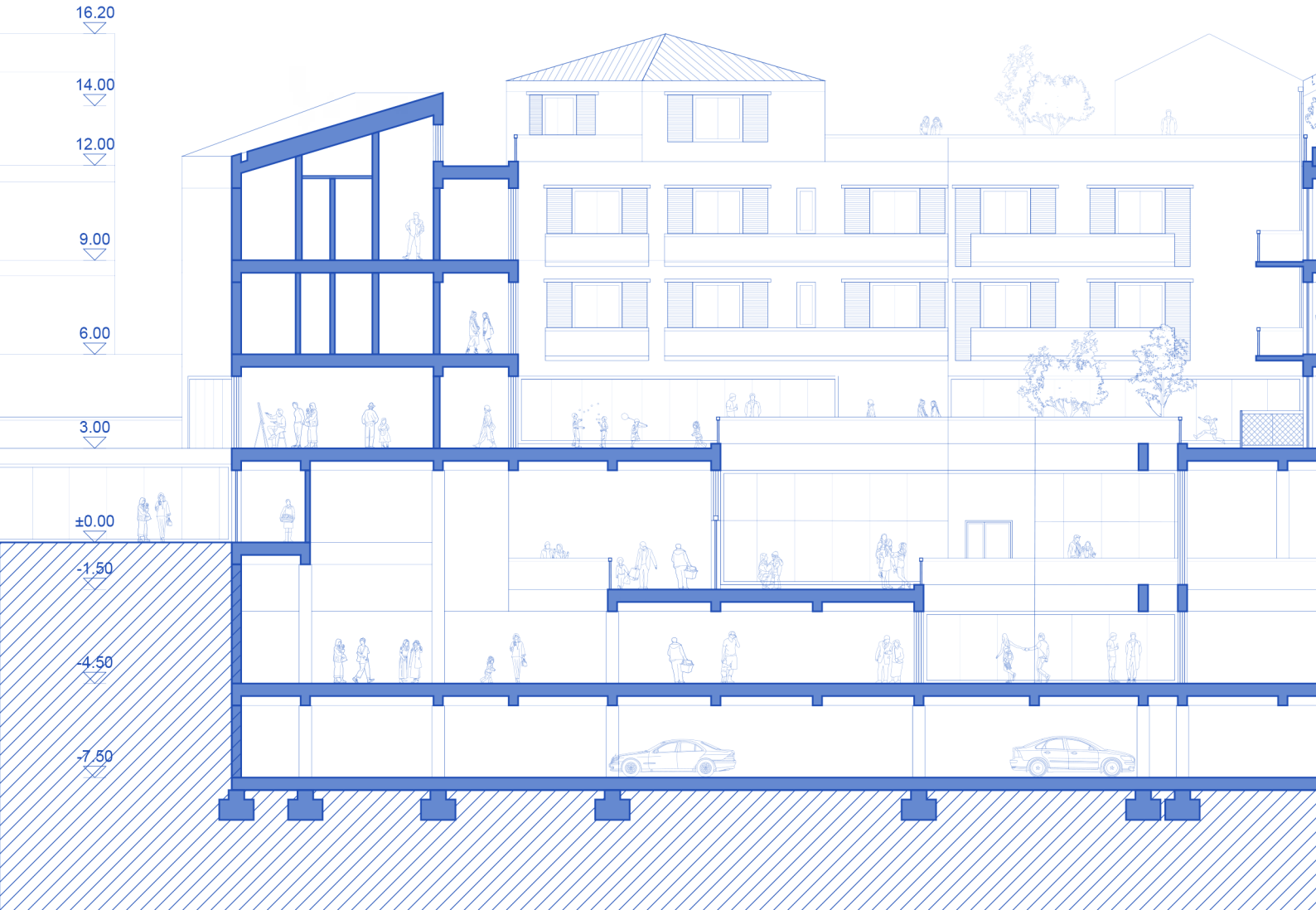
Type 4

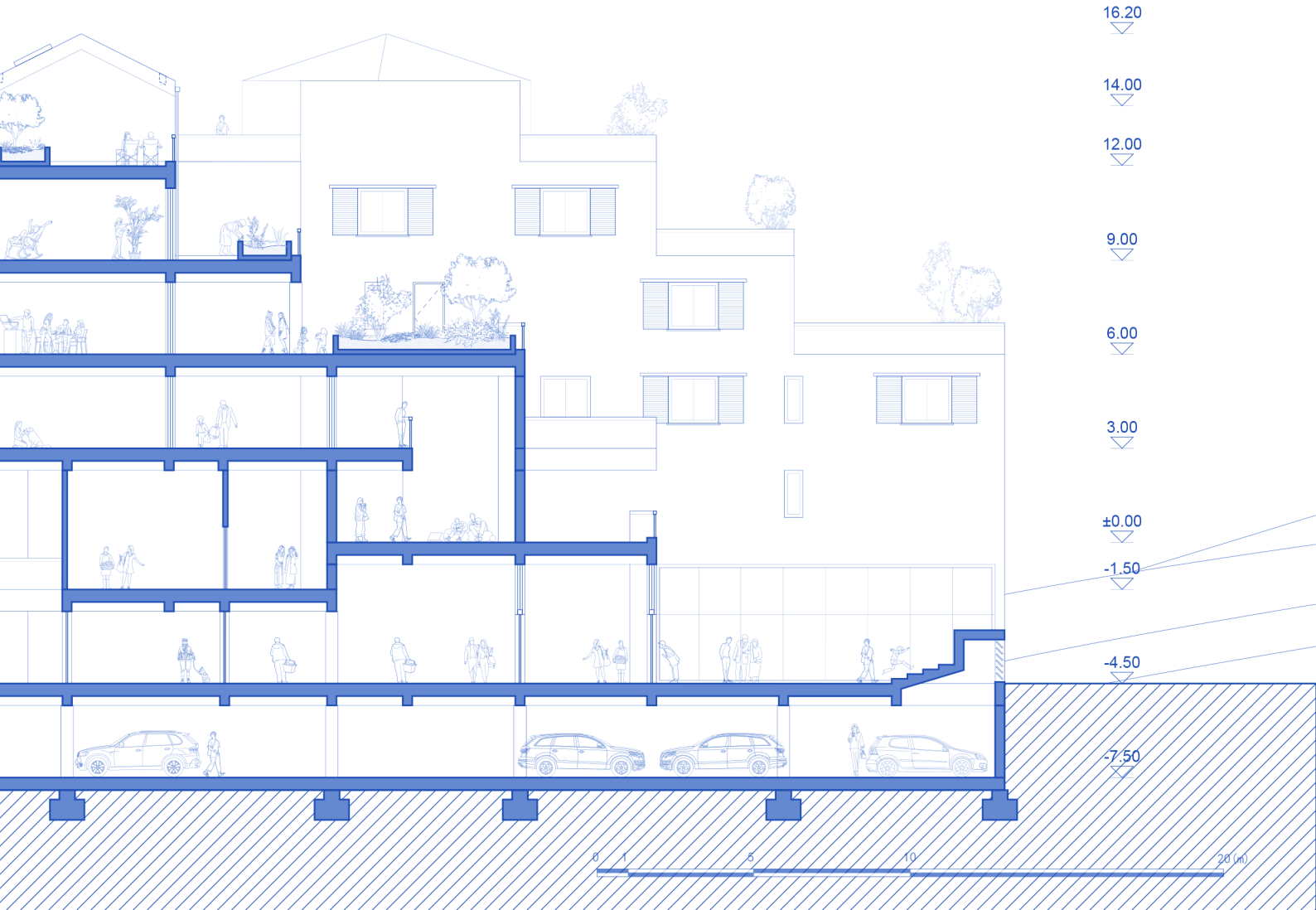
Residential Type 4 begins as a compact two-bedroom. In the second step, an additional bedroom and a small balcony extend the main floor, forming a three-bedroom layout. The final step adds a studio (study room) above the new bedroom, together with an elevated rooftop terrace, enabling vertical growth and a richer mix of private living spaces.

Type 8

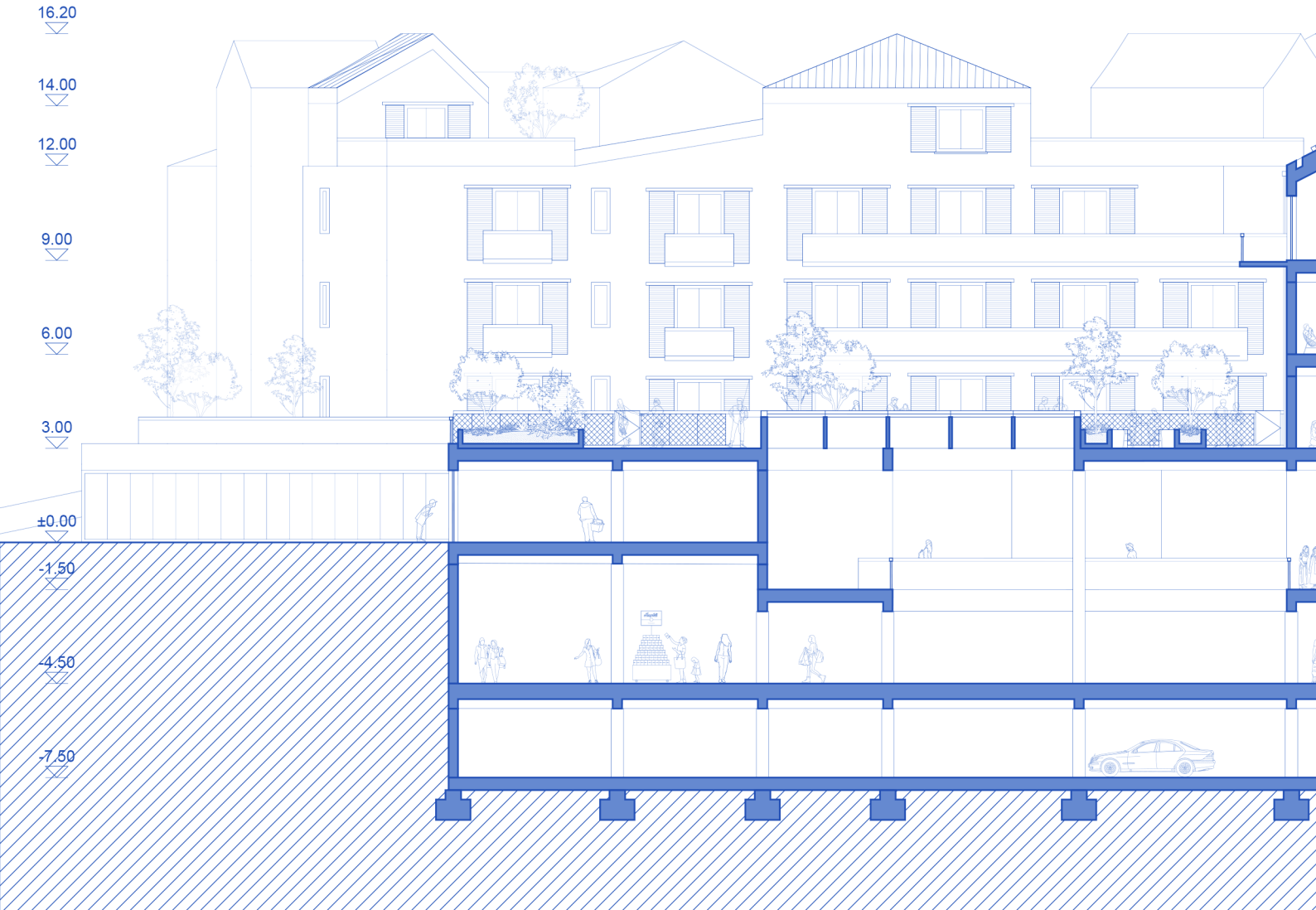
Residential Type 8 begins as a single-level penthouse with two bedrooms. In the second step, it expands upward, adding a study or an extra bedroom beneath a newly formed pitched roof. This vertical extension creates a spacious rooftop terrace, enhancing sunlight exposure and transforming the unit into a more flexible and distinctive penthouse home.

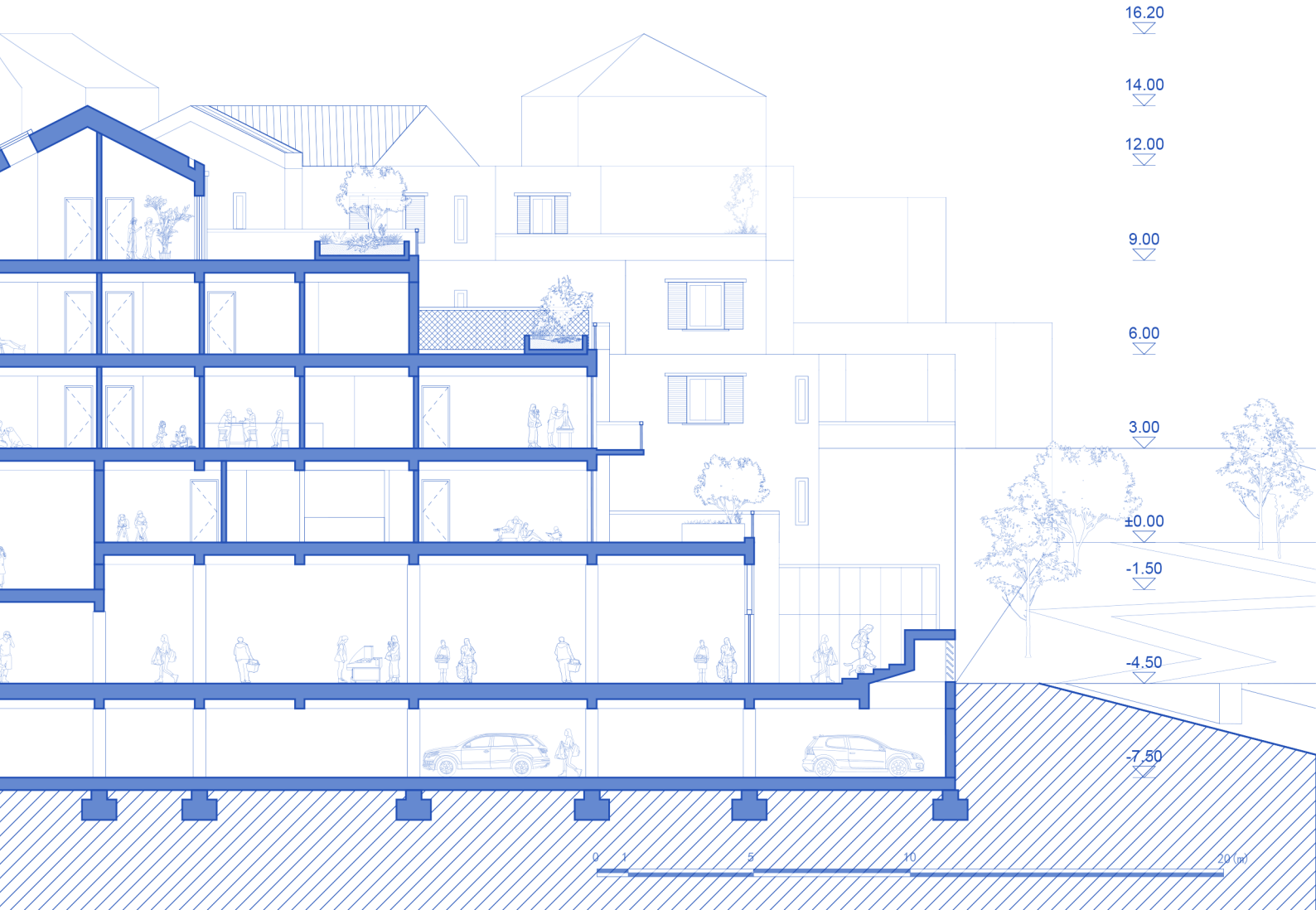
Section a-a 1:200




16.20
14.00
12.00
9.00
6.00
3.00
±0.00
-1.50
-4.50
-7.50
0
1
5
10
20 (m)

Section b-b 1:200

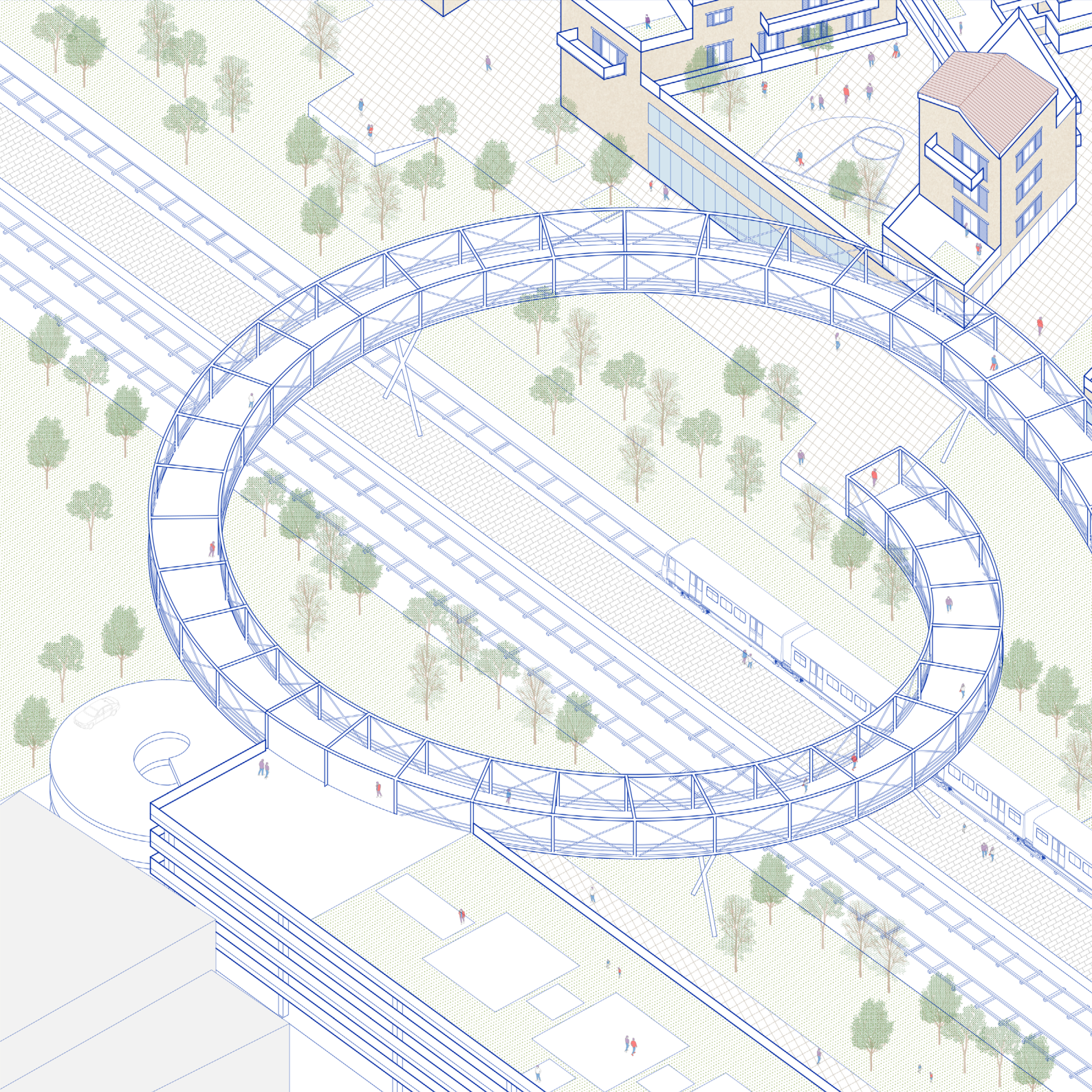


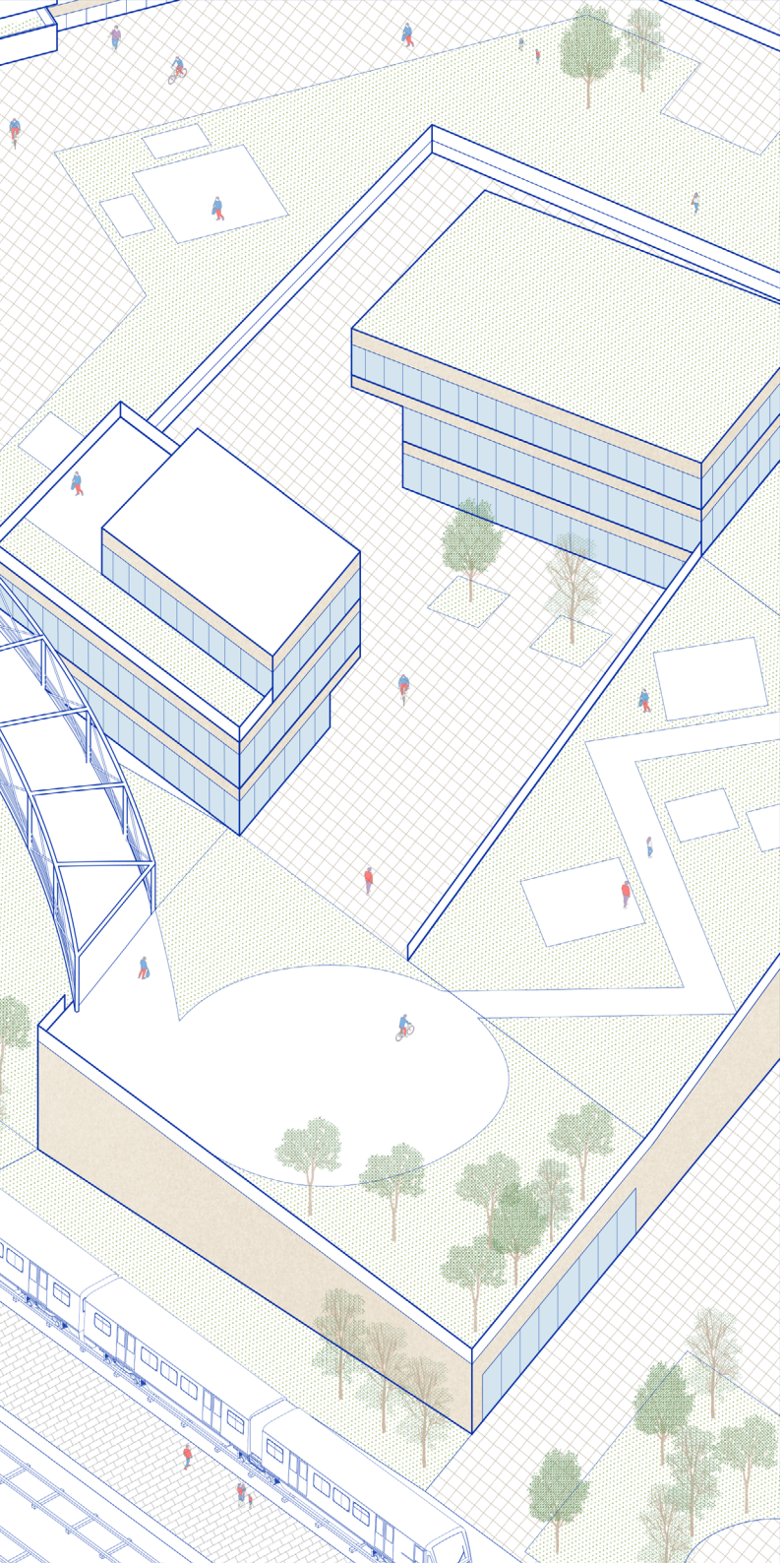

16.20
14.00
12.00
9.00
6.00
3.00
±0.00
-1.50
-4.50
-7.50
0
1
5
10
20 (m)

North Elevation 1:200


16.20
14.00
12.00
9.00
6.00
3.00
±0.00
-4.50


0
1
5
10
20 (m)





Infrastructure

This perspective shows how the project reimagines infrastructure as an active spatial framework rather than a separating system. The newly designed parking structure becomes a multi-level podium whose roof is transformed into a public park, turning necessary infrastructural volume into usable civic ground. From this elevated surface, a circular truss bridge extends across the railway, softly negotiating the height difference between the public mixed-use platform on one side and the residential neighborhood on the other. The bridge's gentle slope is fully accessible to cyclists, allowing green space and movement to remain continuous throughout the site.

By linking park, square, commercial programs, co-working spaces, and mobility facilities on one end with community courtyards and everyday residential environments on the other, the project embeds public life into the infrastructural layer. Infrastructure therefore becomes a mediator rather than a divider—absorbing flows, distributing access, and reconnecting two previously fragmented terrains into a coherent urban system.

Memory

This perspective highlights how the project engages the spatial memory of Polignano's historic core without imitating its forms. Instead of copying the old town, it reinterprets its underlying logics — terraced ground levels, branching alley-like passages, and the alternation of compression and openness, and translates them into a contemporary urban structure. Platforms at different heights recreate the sectional depth of the historic city, allowing movement to unfold through gradual transitions rather than abrupt separations.

The stepped volumes, narrow passages, and strategically placed courtyards echo the experiential rhythm of the old center, where circulation and gathering interweave naturally. Public gardens, shared courtyards, and semi-private terraces take the role of historic voids, functioning as social anchors within the new fabric.

Through these operations, the project aims to construct a symbolic new kind of "historic center"— not by replicating old forms, but by reactivating the cultural and spatial DNA that once shaped Polignano. Here, memory becomes a generative tool, allowing the new district to participate in the continuity of the city's deeper identity.

Dwelling

This perspective offers a close reading of the Dwelling Layer by showing how daily activities occupy a sequence of communal and semi-private spaces. People walk, rest, talk, and look out from balconies, terraces, and roof platforms, giving the architecture a lived and layered quality. Inner courtyards create quieter pockets where children play and neighbors meet, while the stepped platforms enable informal gatherings and visual connections across different levels. Along the outer street, small shops and pedestrian movement extend domestic life into the public realm, reinforcing a continuous flow between the settlement and the city.

The combination of intimate thresholds, shared terraces, and active street edges produces a small village-like environment that supports social interaction and a sense of belonging. In this way, the image demonstrates how dwelling functions as a mediating layer that links individual routines with broader urban structures and helps counter fragmentation in contemporary cities.

Conclusion

This thesis set out to understand how memory, dwelling, and infrastructure operate as interdependent dimensions within the contemporary city, and how they can be engaged productively through the conceptual framework of "City as Layer". The research demonstrated that these dimensions are not only analytical constructs but also spatial forces that shape the lived experience, identity, and internal coherence of the city. Their intersections reveal both tensions and opportunities that become essential to address in any meaningful transformation.

The layered analysis developed in this thesis produced three key findings. First, urban environments cannot be understood through a single logic; rather, they consist of multiple temporal and spatial layers that overlap without fully merging. Second, infrastructural boundaries do more than divide space; they reorganize patterns of dwelling and weaken the continuity of memory across the city. Third, latent or marginal spaces, such as the terrains adjacent to the railway in Polignano a Mare, hold significant potential precisely because they sit at the intersection of multiple layers and unresolved spatial conditions.

Building on these findings, the thesis articulates six evaluation criteria that guided the design exploration: Community Making, Urban Continuity, Public Realm, Traffic Re-integration, Quiet Liveability, and Historical Memory. These criteria allowed the design process to move beyond singular objectives toward a more integrated and

nuanced spatial balance. The proposal reconnects the city through new public squares, green parks, and continuous pedestrian links, while addressing practical needs such as structured parking and improved accessibility. The residential-led mixed-use complex on the southern site employs layered architectural and landscape strategies to respond simultaneously to historical structure, contemporary dwelling needs, and infrastructural pressures. Through this approach, the two long-neglected terrains are reintroduced into the city's active system, emerging not as isolated interventions but as a new civic core—a contemporary form of "historic center" grounded in present-day conditions.

Beyond the specific case, the thesis demonstrates the methodological contribution of "City as Layer". As an analytical lens, it provides a way to read cities as accumulations of overlapping structures rather than as unified forms. As a design method, it offers a framework for generating interventions that acknowledge complexity, mediate between conflicting spatial conditions, and produce environments capable of supporting diverse forms of dwelling. The approach is therefore transferable to other cities characterized by layered historical identities and strong infrastructural thresholds.

Ultimately, the research argues that future urban transformation must engage the heterogeneous conditions that shape contemporary cities. Following Oswald Mathias Ungers's call for inclusive and varied urban environments, the thesis positions "City as Layer" as a method that works productively with multiplicity. By integrating the dimensions of memory, dwelling, and infrastructure into a layered framework, the approach demonstrates how design can reinforce historical depth, sustain everyday inhabitation, and recalibrate infrastructural boundaries, enabling cities to evolve with complexity and openness.

Bibliography

Image Credits

Chapter 1 Cover Image:
Title: *Frozen Assets* (1931)
Author: Diego Rivera
Medium: Oil and fresco transferred to canvas, 239 × 188.5 cm
Collection: Museo Dolores Olmedo, Mexico City
Source: Museum of Modern Art (MoMA). "Frozen Assets." Accessed October 2025. https://www.moma.org/interactives/exhibitions/2011/rivera/mobile/mural_details/frozen_assets.htm
Note: Image used for educational and scholarly purposes.

Chapter 2 Cover Image:
Title: *Vuë intérieure de la Grotta di Palazzo* (Interior view of the Grotta Palazzese)
Artist: Claude-Louis Châtelet (engraving)
Source Publication: Jean-Claude Richard de Saint-Non, *Voyage pittoresque ou description des royaumes de Naples et de Sicile*, vol. 3. Paris: Clousier, 1783.
Note: Historical engraving reproduced from the 1783 publication for academic reference.

Chapter 3 Cover Image:
Title: *Vertical Urban Living Framework* (title assigned by the author)
Source: Site New York. "Project One." Accessed 2 December 2025. https://sitenewyork.com/portfolio-1/project-one-7tnzy-llznb-83lxp-6xw4p-726sh-k86c6-hpckn
Note: Image recolored by the author using AiriLab AI tools for visual enhancement; the original composition and content remain unaltered.

* Except for cover images and figures with explicitly stated external sources in their captions, all drawings, diagrams, maps, analytical graphics, and renderings included in this thesis were produced by the authors (Mohuaí Hu and Yueqi Zhang) as original work.

Ungers, Oswald Mathias. *The Dialectic City*. Edited by Stefan Vieths. Milan: Skira, 1997.

"Architect O.M. Ungers dies at age 81." *Cornell Chronicle*, October 10, 2007. https://news.cornell.edu/stories/2007/10/architect-om-ungers-dies-age-81

Debord, Guy. *The Society of the Spectacle*. Translated by Donald Nicholson-Smith. New York: Zone Books, 1994.

Hussey, Andrew. *The Game of War: The Life and Death of Guy Debord*. London: Jonathan Cape, 2001.

Proust, Marcel. *In Search of Lost Time*. Vol. 6, Time Regained. Translated by C. K. Scott Moncrieff and Stephen Hudson. Revised by Terence Kilmartin and D. J. Enright. New York: Modern Library, 1993.

Tadié, Jean-Yves. *Marcel Proust: A Life*. Translated by Euan Cameron. New York: Viking, 2000.

Norberg-Schulz, Christian. *Genius Loci: Towards a Phenomenology of Architecture*. New York: Rizzoli, 1980.

Norberg-Schulz, Christian. *Intentions in Architecture*. Cambridge, MA: MIT Press, 1968.

Proust, Marcel. *In Search of Lost Time*. 7 vols. Translated by C. K. Scott Moncrieff. Revised by Terence Kilmartin and D. J. Enright. New York: Modern Library, 1992–1993.

Proust, Marcel. *In Search of Lost Time*. Vol. 1, Swann's Way. Translated by C. K. Scott Moncrieff. Revised by Terence Kilmartin and D. J. Enright. New York: Modern Library, 1992.

Bellos, David. *Georges Perec: A Life in Words*. London: Harvill, 1993.

Perec, Georges. *Species of Spaces and Other Pieces*. Translated by John Sturrock. London: Penguin, 1997.

Küchler, Susanne. "The Place of Memory." In *The Art of Forgetting*, edited by Adrian Forty and Susanne Küchler. Oxford and New York: Berg, 1999.

Venturi, Robert. *Complexity and Contradiction in Architecture*. New York: Museum of Modern Art, 1966.

Venturi, Robert, Denise Scott Brown, and Steven Izenour. L*earning from Las Vegas: The Forgotten Symbolism of Architectural Form.* Revised edition. Cambridge, MA and London: MIT Press, 1977.

Heidegger, Martin. *Poetry, Language, Thought*. Translated by Albert Hofstadter. New York: Harper & Row, 1971.

Hölderlin, Friedrich. *Selected Poems and Fragments*. Translated by Michael Hamburger. London: Penguin Classics, 1998.

Bachelard, Gaston. *The Poetics of Space*. Translated by Maria Jolas. Foreword by John R. Stilgoe. Boston: Beacon Press, 1994.

Chimisso, Cristina. *Gaston Bachelard: Critical Introduction*. London and New York: Routledge, 2001.

Le Corbusier. *Towards a New Architecture*. Translated by Frederick Etchells. London: Architectural Press, 1927.

Habraken, N. John. *Support: An Alternative to Mass Housing*. London: The Architectural Press, 1972.

Habraken, N. John. *The Uses of Levels*. Pamphlet/paper, 1998

Lefebvre, Henri. *The Production of Space*. Translated by Donald Nicholson-Smith. Oxford and Cambridge, MA: Blackwell, 1991.

Merrifield, Andy. *Henri Lefebvre: A Critical Introduction*. London and New York: Routledge, 2006.

Graham, Stephen, and Simon Marvin. *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London and New York: Routledge, 2001.

Atteridge, Andrew Hilliard. *Joachim Murat, Marshal of France and King of Naples*. London: Methuen, 1911.

Visit Puglia. "*Visit Polignano a Mare: The Complete Guide*." Accessed 13 November 2025.
https://www.viaggiareinpuglia.it.

Favale, Filippo Franco. *Le grotte di Polignano*. Manduria: Federazione Speleologica Pugliese, 1994; and "Centro storico portuale, difensivo – Polignano a Mare." Catalogo generale dei beni culturali. Ministero della Cultura. Accessed 13 November 2025.

Thomas Ashby. "The Via Traiana." *Journal of Roman Studies* 6 (1916): 1–32; "Polignano a Mare Railway Station," Wikipedia, last modified 2024; "Strada statale 16 Adriatica," Wikipedia, last modified 2025.

Menchelli, Simonetta, Katia Mannino, and Maria Teresa Giannotta. "Polignano a Mare." In *Bibliografia topografica della colonizzazione greca in Italia e nelle isole tirreniche*, no. 14 (1996): 115–27; Cazzato, Carlo. Guida di Polignano a Mare. Comune di Polignano a Mare, 2015.

Saint-Non, *Jean-Claude Richard de. Voyage pittoresque ou description des royaumes de Naples et de Sicile*. Vol. 3. Paris: Clousier, 1783.

Studio sul Centro Storico di Polignano a Mare. Tesi di laurea in Architettura. Politecnico di Torino, Biblioteca Centrale di Architettura, undated.

Touring Club Italiano. Puglia, Lucania, Calabria. Vol. 8. Milan: Bertieri, 1937; *Viesti, G. Polignano a Mare, centro storico e zona B – studi preliminari alla redazione dei nuovi strumenti urbanistici*. Polignano a Mare, 1981; Visit Puglia, "Visit Polignano a Mare: The Complete Guide."

"L/S Polignano a Mare (IT)." Europan 18 Site Brief, 2025; "Strada statale 16 Adriatica," Wikipedia.

ISPRA. *Consumo di Suolo in Italia 2023*. Rome: Istituto Superiore per la Protezione e la Ricerca Ambientale, 2023.

Favia, M. F. "Paesaggi costieri della Puglia: morfologie urbane e spazi pubblici." *Territorio* 89 (2019): 78–89.

"Adriatic Railway." Wikipedia. Accessed 13 November 2025. https://en.wikipedia.org/wiki/Adriatic_railway.

"Strada statale 16 Adriatica." Wikipedia. Accessed 13 November 2025.
https://it.wikipedia.org/wiki/Strada_statale_16_Adriatica.

Stefano Boeri Architetti. *Il Parco del Polcevera e il Cerchio Rosso*. Competition Book for the regeneration masterplan of the "Quadrante Polcevera", 2019. Politecnico di Torino, Biblioteca Centrale di Architettura.

3XN. *New Sydney Fish Market – Stage 1 Concept Proposal Design Report*. Infrastructure NSW, 2017.

Arpentère. "Anna Marly Garden." *Landezine*. Accessed 15 February 2026.
https://landezine.com/anna-marly-garden-by-arpentere/

De Carlo, Giancarlo. "Colletta di Castelbianco." *Places Journal* 16, no.2 (2004). University of California eScholarship.

Google Arts & Culture. “Eco Houses 2038 – The New Serenity.” Accessed 14 November 2025. https://artsandculture.google.com/story/eco-houses-2038-thenewserenity/GAVBhQWcskkg7A?hl=en

García-Huidobro, Fernando; Torres Torriti, Diego; Tugas, Nicolás. *Time Builds! The Experimental Housing Project (PREVI), Lima: Genesis and Outcome*. Barcelona: Editorial Gustavo Gili, 2008.

Europan Europe. “Polignano a Mare (IT) – Site.” *Europan 18*. Accessed November 2025. https://www.europan-europe.eu/en/session/europan-18/site/polignano-a-mare-it.