

## RADICAL SOFTNESS

On the Crau plain, at an altitude of 52 meters, Miramas stretches between the arid steppes of the coussouls, the green bocage of the Pont de Rhau, and the humid resurgences of the Étang de Berre and the Vigueirat marshes. The Mistral wind cools and dries the plain from the northwest, shaping its inhabited landscape all the way to the coast. Like Miramas itself - a hub for passengers and goods - the ICF railway workers' housing complex is a place of transition in the making: a mono-functional, arid neighborhood, a missing link in the chain between the city center and the future Boule Noire district. Here, housing units born of the railway host unemployed people, retirees, and railway workers in a city that is now confronted to demographic growth, extreme weather events, and resource depletion. In the face of these pressing challenges, the open spaces of the *Cité* represent a crucial potential within an otherwise impermeable neighborhood that must adapt to new arrivals - both human and non-human. The 30,000 square meters of interstices - parking lots, streets, sidewalks, alleyways, meadows, medians, wastelands, and canals - are the only spatial opportunities available to paradoxically accommodate both new residential solutions and resilient open spaces. To meet the transformation and adaptation goals set by the competition, the urban fabric of the *Cité* - with its orderly, legible, and identity-bearing layout - led us to favor a strategy of measured densification based on the existing built environment and a landscape approach that enhances the climatic ecosystems - arid, green, and wet - over the short, medium, and long term. The project embraces a frugal and circular approach: the existing is treated as a resource, and any additions are designed to be reversible and adaptable to multiple living systems. The interventions aim for a low carbon footprint and the capacity to evolve in line with life cycles, climatic phenomena, and the environmental conditions of the territory. Starting from the *Cité cheminote*, the project rebuilds a system of interdependence between the neighborhood, its inhabitants, and their chiaroscuro worlds.

## CRAU : A LIVING PLAIN

The project's landscape approach is based on a reading and interpretation of the material resources, climate, and living environments specific to the Crau plain. The ecology of this territory has shaped the transformations that have altered these elements throughout its history, and today it offers a framework for adapting to future changes. Among these upcoming changes are population growth and expansion of the service sector, increased passenger and freight transit along the Paris-Lyon-Marseille high-speed rail line, and the intensification of extreme climatic events.

### Resources

Miramas lies within the Crau territory, a thriving agroecosystem shaped over time on the remnants of an ancient delta of the Durance river. This unique landscape is sustained by a dynamic synergy between its natural habitats and the traditional human practices that have long flourished there. Shaped over millennia by sheep pastoralism, this semi-arid steppe covered with pebbles has evolved into a rich yet discreet natural biotope, home to unique plant communities, rare birds, and endemic insects. Starting in the 16th century, the development of an irrigation network altered this territorial configuration both on the surface and in depth, giving rise to the "Green Crau"—a bocage landscape dominated by hay cultivation, highly dependent on water. The hay meadows, flooded by canals drawing silt-rich water from the Durance, allow irrigation water to infiltrate the ground and help recharge the groundwater table, which spans nearly the entire surface of the plain. Today, around 270,000 people rely on this aquifer for drinking water, including farmers, shepherds, and industrial users. Recent development in urbanization and arboriculture is threatening the delicate balance of the Crau's resources by fragmenting the natural coussoul landscapes, reducing the extent of hay meadows, and consequently jeopardizing the groundwater recharge that human activities - ironically - depend on.

This territory already holds sufficient resources to avoid seeking them elsewhere. The interdependent relationships between water, subsoil, and human activity form a crucial key to interpreting the theme of the competition and precisely structuring the development scenario for the *Cité cheminote* of Miramas. Notably, Crau hay, known for its high forage quality, is explored here as a bio- and geo-sourced construction material, alongside the Crau pebbles - originating from the "poudingue" conglomerate, a surface resource of the dry Crau, deposited by ancient river alluvium and already quarried to supply a (small) portion of the local construction industry.

### Phenomena

Climate change is also impacting the Crau's resources and is intensifying and making more frequent certain phenomena such as prolonged droughts, rising temperatures, river flooding, and corridor winds like the Mistral. In response to these phenomena, the project incorporates minor, low-tech, and easily adoptable architectural and landscape strategies—first tested on the site of the railway workers' district, but designed to be replicable across the wider territory. Summer droughts, which threaten the irrigation of vegetable and market gardens, call for solutions that preserve and enhance the value of water. Urban heat islands, which push life indoors and increase dependence on energy-intensive cooling

systems, require strategies to cool outdoor air through evapotranspiration, shading, and natural ventilation. Flooding, caused by episodes of torrential rain that render parts of inhabited areas unusable, necessitates stormwater management through slowing, capturing, and infiltration. Finally, the Mistral wind - which hampers both indoor and outdoor activities - calls for design solutions that buffer the wind while maintaining air circulation and cooling.

### Environments

To make better use of depleting material, biological, and water resources - and to better anticipate the intensifying effects of climate phenomena - the living environments of the Crau form the foundation of a project that is both hybrid and site-specific. Due to its pivotal location between the dry Crau, the green Crau, and the wet Crau, Miramas is destined to coexist and co-evolve with shifting climatic and environmental conditions over time and across the seasons. The landscape strategy thus seeks to weave a mosaic of Crau-specific environments throughout the entire *Cité cheminote*, enhancing the quality of life for residents while promoting the presence of native animal and plant species. Dry meadows and garrigue sit alongside sun-loving herbs and vegetables; fromental hayfields neighbor orchards and pebble-lined swales; Mediterranean ponds are bordered by *Provençal* hackberries and hawthorns, all forming a network of virtuous interrelationships. To live with the steppes, the bocage, and with water, we propose strengthening existing networks of solidarity at the bioregional, neighborhood, and household levels - each grounded, in its own way, in the interdependence between resources, climates, and both human and non-human life forms. Urban transformation and adaptability policies are not merely a matter for local administration, but a broader territorial event. Just as with the Crau aquifer and hay committees - working to protect the sustainable use of groundwater and hay across the region - new networks could emerge to defend the fragile yet vital balance between future inhabitants, water, and the multiple environments of the Crau's rich, though often opaque, living ecology.

## ECOSYSTEM DISTRICT

The railway workers' district of Miramas represents a valuable opportunity for transformation. Inherited from a cooperative urbanism model, its intermediate typology - neither individual houses nor collective housing - offers the chance to experiment with new forms of living where the boundaries between private and shared space can be redefined.

Yet the district embodies a paradox : situated between a consolidated urban environment - the town center - and an emerging one - the Boule Noire development zone - it faces pressures to densify while retaining the characteristics of a suburban lifestyle. This project embraces that contradiction, positioning the district as a transversal habitat laboratory, capable of blending landscape and urbanity, combining intimacy with collectivity, and adapting to the ever-changing nature of climate phenomena.

### Densifying the housing blocks

From an architectural standpoint, the project proposes a low-impact densification strategy: adding without erasing, adapting without altering, revealing without exaggerating. It aims to promote a contemporary evolution of housing rooted in what already exists, without compromising the site's identity. This approach allows for the improvement of current housing conditions and the creation of new units, while exploring more accessible, flexible, and comfortable solutions. By densifying the interstitial spaces between housing blocks, the project strengthens the connection to the ground, reduces residual spaces, and enriches the diversity of uses within the neighborhood.

### Programming

On major extensions - strategically positioned along priority development axes such as Giraud, Sauvaire, Cordier, and Dassier streets - the project adds a total of 22 new commercial, artisanal, and public-use units. Along minor streets - intended for local, proximity-based mobility - the project introduces 20 new collective housing units that enhance the residential offering with additional functional and social amenities.

### Mobility

Miramas's new mobility plan anticipates increased traffic along Giraud and Sauvaire streets to link the town center with the future Boule Noire development zone, and along Cordier and Dassier streets to improve access to sports and educational facilities in the Jules Ferry sector. The other streets within the district are calmed to a 20 km/h speed limit and support local mobility, while a network of internal pathways within the housing blocks enhances neighborhood permeability and provides alternative routes for residents. The project anticipates these evolutions through a phased scenario - short, medium, and long term. While car use remains dominant in current planning, we envision a future shift toward more sustainable modes of transport - both socially and ecologically - such as shared and soft mobility. This perspective could profoundly reconfigure urban space - not by denying car use, but by broadening the role of streets to include pedestrians, bicycles, water, vegetation, and urban wildlife.

### Open space

In continuity with the projected evolution of mobility modes and adaptation to climate phenomena on the Crau plain, the project proposes a three-dimensional renovation of the district's open spaces. The aim is to restore and enhance the relationships between the massive underground formations - such as the poudingue and the aquifer - the surface landscape elements such as street edges and block interiors, and the atmospheric elements like water and air. Together, these layers give rise to an ecosystem neighborhood that bridges the epigeal and hypogeal territories.

### Landscape

The proposed landscape interventions aim to

improve on-site stormwater management, mitigate the effects of heat islands and drought, enhance biodiversity from soil to sky, promote short-cycle sustainable food systems, and provide protection from wind gusts. Across plots, individual houses, and streets, rainwater is slowed, collected, and infiltrated using a range of water-sensitive systems: irrigation channels, swales, ponds, rain gardens, depaved surfaces, disconnected downspouts, and storage tanks. The revegetation of block interiors using native plant species helps retain runoff and supports biodiversity. The development of small garden plots within these spaces allows residents to grow vegetables and aromatic plants near their homes. Additionally, new trees planted along south-facing facades, reinforced tree lines along north-south streets, and the progressive transformation of the existing monospecific hedges into diverse, multi-layered, and living hedgerows all contribute to increasing shade, reducing overheating, and mitigating the Mistral's corridor wind effects.

### Neighborhood and Territory House

The *Maison du Quartier et du Territoire* is a covered public space strategically located in the public garden at the intersection of Cordier and Sauvaire streets - two of the district's major thoroughfares. Designed as a garden pavilion, this facility complements the existing playground and the SNCF Social Action Center. It supports informal gatherings and hosts neighborhood meetings, local farmers' markets, celebrations, and informational events about the territory of Miramas and the Crau.

This point of convergence fills a gap in public amenities within the neighborhood and radiates outward to serve both the city and the wider region, fostering social cohesion.

In summary, the project seeks to move beyond the traditional notion of housing by complementing the *Cité cheminote* with shared spaces that strengthen social ties and support everyday life. These spaces are designed for residents, landlords, and local authorities alike, functioning as a flexible, adaptable toolkit for collective use.

## BIOCLIMATIC BUILDING

### Revealing the sides to extend the built narrative

Rather than undertaking a heavy-handed renovation of all the buildings, the intervention focuses on a targeted strategy by activating the currently unused blind façades. This also allows for the requalification of the residual side outdoor spaces between the plots. A detailed reinterpretation of the existing morphologies helps to uncover previously untapped potential: opening up side façades, creating corner living rooms with three orientations, improving climatic conditions, widening views of the landscape, and adding extensions adaptable to the seasons and various occupancy rhythms. Additionally, all buildings are insulated from the inside using Crau hay fiber - a bio- and geo-sourced material - chosen for its low environmental impact, thermal performance, and natural humidity regulation capabilities. This regenerative densification strategy builds on what is already there -

blind facades and underused side gardens - to revitalize the railway workers' housing estate. It introduces a new architectural language that is both site-specific and sustainable, aligned with contemporary demands for habitability, durability, and usability. The housing blocks possess a strong identity rooted in Miramas' economic, social, and historical memory. Their architectural language, far from obsolete, deserves to be extended. This is why the integrity of the original façades is preserved. The aim is not to radically transform a structure that already plays a foundational role on the site, but rather to superimpose a contemporary layer, in a logic of morphological and analog continuity. This new layer affirms a more open, freer character, offering the buildings a renewed expression of the *Cité cheminote*.

### Towards a multifaceted living comfort

Comfort stems from a multifactorial approach : it manifests both through physical sensations - related to humidity, light, heat, or cold - and through a qualitative and aesthetic dimension of the built and landscaped environment. It cannot be reduced to a single technical or functional aspect but results from a combination of material, spatial, and psychological factors. Within this framework, thermal renovation of the building envelope must fit into a broader approach, attentive to habitability as well as the social and economic sustainability of the project. The proposal thus seeks to go beyond mere regulatory insulation criteria, making energy renovation a lever for qualitative transformation. The addition of extensions to each dwelling relies on this diversity of components. The goal is to increase living space by extending the living room, offer an extra room to meet each household's specific needs, create a private outdoor space, and thus improve comfort in use. These spaces take the form of intermediate extensions, both thermal and functional, that insert themselves between interior and exterior. These additions also enhance thermal comfort year-round by leveraging natural resources and free energy - light, air, water. They act as a bioclimatic buffer: passive shading, natural ventilation in summer, and solar heat accumulation in winter are promoted, contributing to a significant reduction in energy consumption. Furthermore, they allow for varied seasonal uses - terrace, drying room, summer lounge, hanging garden, workshop - increasing the usable space and habitability of the dwelling. Each apartment benefits from three orientations and an outdoor space that brings the living experience closer to that of a house while sharing a floor with other households. They establish a new relationship with the landscape by opening up broader perspectives on the environment. The extensions and their large openings become true viewpoints over the unfenced gardens, offering views through the blocks and encouraging shared enjoyment of the landscaped setting.

### Diversifying housing types while preserving identity

The lateral extension of the buildings presents a major opportunity to diversify apartment typologies.

Household compositions are becoming more complex and evolving, requiring housing capable of adapting to the changing needs of residents. This strategy allows for an extended range of dwellings, from one-bedroom apartments - including units adapted for persons with reduced mobility (PRM) - to larger configurations of up to five bedrooms. This diversity meets the varied needs of inhabitants and fosters richer social and intergenerational mix within the *Cité cheminote*. It also offers households the possibility to evolve within the site by changing apartments from one plot to another according to life stages, thereby strengthening long-term residential attachment. This transformation process is based on a careful approach to the existing structures, preserving key architectural and structural elements (facades, stairwells, load-bearing walls) that tell the story and identity of the place, while controlling the scope of work to avoid excessive and burdensome renovations, heavy demolitions, and radical recompositions. This method focuses energy on lateral extensions designed as measured and holistic interventions that preserve the soul of the buildings while offering functional, flexible, durable spaces adapted to contemporary lifestyles. In summary, the project increases from 222 uniformly two-bedroom apartments to a more diversified offer of 246 units, integrating multiple typologies (from 1-bedroom to 5-bedroom units). Two-bedroom apartments decrease proportionally (from 100% to 58%) but remain the majority, making room for one-bedroom apartments (including some PRM units), representing 24% of the new housing stock, and family-sized apartments (3, 4, and 5 bedrooms), representing 14% of the total projected. Overall, the project adds 24 apartments compared to the existing stock, with an approach better suited to the diversity of resident profiles.

### **The Plinths : active interfaces between housing and open spaces**

The ground floors of the plots, currently elevated about 1.5 meters above public space, are transformed through the extensions of the upper-floor dwellings. Extending the opaque plinths, these new units, now at ground level, are designed as open, porous, and adaptable thresholds that bridge the private space and the public realm. They strengthen collective dynamics, encourage gentle social oversight, and foster resident engagement. On the ground floor, these spaces accommodate a variety of shared facilities - laundry rooms, summer kitchens, DIY and gardening workshops, bike storage, storage rooms, playrooms, and study areas - which nourish social bonds and exchanges among residents. They enable inhabitants to enjoy spaces complementary to the traditional functions of individual housing. Distributed along the plots according to their uses, these proximity devices are integrated into the quieter areas of the site, directly connected to green spaces. In some central plots, independent guest rooms equipped with bathrooms are made available to residents. Bookable on demand, these rooms allow for the occasional hosting of relatives and guests - grandchildren, friends, or family members - without infringing on the privacy of the dwelling. In sectors more exposed to flows - key axes,

intersections, neighborhood entrances - the extensions take other forms and host programs with a more public vocation: artisanal or commercial units, cultural or social facilities. These targeted facilities help to animate the neighborhood, support the local economy, and create interface spaces between residents and their urban environment. They thus contribute to consolidating and expanding the town center, connecting existing centralities with new living spaces.

### **Economy of means and adaptive phasing of works**

The project follows a logic of constructive economy and economic sustainability at the scale of residents, social landlords, and local authorities. Several strategies are deployed to reduce investment and management costs while ensuring qualitative improvements to the built environment. The addition of buffer spaces and the insulation of the building envelope contribute to the thermal performance of the building by limiting energy loss and improving comfort in both summer and winter. These systems, combined with optimized natural ventilation, reduce heating needs and consequently provide a sustainable decrease in household expenses. To this end, the existing structure is actively leveraged in the project's climate strategy. Cellars are reinvested as summer cooling reservoirs: tempered air captured underground is set in motion by thermal draft and distributed to upper floors through a chimney effect, passively and renewably enhancing summer comfort.

The construction structure of the extensions relies on simple, dry, lightweight, prefabricated, and repeatable systems, facilitating on-site implementation. The use of bio-sourced and local materials, such as Crau hay for insulation or poudingue pebbles for outdoor paving, reduces the environmental footprint of the site while supporting short supply chains and a localized economy.

These choices contribute to an economy of means through rationalizing interventions, limiting major structural modifications, and adapting solutions to the existing building characteristics. This approach aims to manage the material and human resources necessary for the project while preserving building performance and durability.

The progressive intervention strategy is based on a detailed phasing that allows residents to remain on-site during construction. This is made possible by the internal spatial organization of the dwellings, which keeps some rooms usable, particularly those opposite the construction zone. Additionally, interventions focus mainly on the façades, limiting disruption to interior spaces. Close coordination with the social landlord supports the temporary use of vacant nearby units to assist households during occasional relocations. Finally, work scheduling is broken down into short sequences, by individual dwelling or small groups, to reduce nuisances and preserve residents' quality of life.