

POLYMNIA FUTURA: POLIGNANO A MARE BETWEEN MEMORY AND INNOVATION

Polymnia Futura evokes the connection between the ancient name of Polignano and its projection towards the future. The project weaves a narrative of continuity that honours the city's history while writing new chapters of sustainable development. The project interprets the **genius loci** of Polignano, from the ancient karst ravines to the calcarenite stone, and from the relationship with the sea and agricultural heritage, as a heritage of resources to be reactivated and reinterpreted in building a resilient and inclusive city.

STRATEGIC VISION AND "RE-SOURCING" THEME

The proposal aims to address the structural issues of Polignano a Mare, including the challenging coexistence between residents and tourists, as well as a lack of strategic vision in urban development due to the rapid growth of tourism. The problems to be addressed are mainly due to the large tourist influx: traffic congestion in the city centre, a severe shortage of parking spaces and property speculation that has led to a disproportionate increase in property prices and a consequent phenomenon of gentrification. The project interprets the theme of "Re-sourcing" through a regeneration strategy that enhances existing urban resources and activates new ones.

- **Conversion** of underutilised areas into strategic nodes for sustainable mobility;
- **Regeneration of the social and urban fabric** through the transformation of residual spaces into places of sociability serving both residents and tourists. Traditional community gathering spaces (the square, the alleyways, the belvederes) are reborn as the basis for an innovative model of integration between social housing and proximity services;
- **Urban renaturing**, inspired by the karst ravine system, through the conversion of impermeable surfaces into natural drainage systems.

OVERALL STRATEGY

As a solution to the aforementioned problems, the project utilises the four areas covered by the competition brief to propose a unitary vision that enables improvement of residents' quality of life and better coexistence between residents and tourists. In addition to designing the four competition areas, complementary interventions have been envisaged in the overall strategy to improve connections between the various areas and strengthen the proposed strategic vision. The opportunity has been seized to rethink these spaces in sustainable terms, with the renaturing of much of the currently impermeable ground: the intervention involves the transformation of over 24,000 square metres into drainage areas, permeable soils and extensive green areas. A large number of new trees have been included, totalling 300 new plantings distributed across the four intervention areas, to create shaded zones that allow comfortable use of urban spaces and mitigate the heat island effect in these areas, with an expected reduction of at least 2 degrees in summer temperatures. The architectural proposals arose from the reinterpretation of the characteristics of the local architectural heritage and the extensive use of local materials, which will represent 80% of the materials used in the new interventions, to promote the protection of the historic-architectural identity of the place.

SUSTAINABLE MOBILITY AND INTERMODAL STRATEGY

The strategic vision envisages that tourists leave their cars on the periphery and continue their experience on foot or with sustainable mobility means (bicycles, electric buses, electric scooters). The ambitious objective is to reduce traffic in the city centre by 60% and significantly increase the use of sustainable means for urban journeys. To this end, the existing cycle path system has been completed and strengthened through 3 km of new connections linking three mobility hubs located in the Via Lepore area, near the railway station and near the sports field, where there is a parking area for tourist buses. At present, Polignano lacks urban public transport; therefore, the project provides for a route, operated by small electric buses with a

frequency of one journey every 15 minutes, connecting all the main points of interest and the three new intermodal nodes of the city. The system has been designed to guarantee total journey times of less than 15 minutes. For the Via Lepore and Via Marconi areas, their strategic position near two of the main entrances to the city has been exploited to position large underground car parks (paid parking) intended primarily for tourists and visitors, who will thus be encouraged to leave their cars on the periphery and continue towards the city centre on foot, by bicycle or by public transport.

FUNCTIONAL COMPOSITION OF THE INTERVENTIONS

AREA 1 - Via Lepore: The New City Gate - Mobility Hub and Urban Belvedere

The Via Lepore area becomes "The New City Gate" - the first impression of Polignano for visitors arriving by car. It has been designed as a mobility hub and at the same time a new point of interest for the citizenry. The Via Lepore area enjoys a strategic position because, while on one hand it allows cars to be left near one of the entrances from State Road SS16, on the other hand it allows the historic centre and Lama Monachile to be reached through an adjacent underpass, with a walk of less than 10 minutes, or by hiring a bicycle or taking a bus from the stop provided in the area. An underground car park on two levels has been designed on the site, for a total of 220 parking spaces. At street level, it presents itself as a large green square onto which faces an L-shaped building that develops over three floors (for a total of 1000 sq m of covered area), reachable both through an urban staircase and through lifts inside the building. The building houses tourism services on the ground floor, including an information centre sized to accommodate over a thousand visitors per month, a ticket office for electric buses and a bicycle rental service. The two upper floors are characterised by commercial galleries and panoramic terraces framed by arcades overlooking Polignano's historic centre, a contemporary belvedere that dialogues with the Lama Monachile and the skyline of the ancient borough. Here, there will be catering services, pizzerias and bars with outdoor tables, which allow tourists and residents to fully experience the belvedere and enjoy the panoramic view.

AREA 2 - Viale Trieste: Railway Gateway and Multifunctional Space

The Viale Trieste area (area 2) is characterised by its elongated form, situated between the RFI railway lines on one side and the existing built environment on the other. Such characteristics have led to its use as a car park until now. However, the area has recently been affected by the construction of a cycle station, an info point and a workshop for bicycle repairs. Furthermore, a project is being implemented (which has been integrated into the masterplan) that reorganises the area in front of the station.

The combination of these interventions has allowed the Viale Trieste area to be reconceived not as a closed and residual space but as an area to be traversed and enhanced for carrying out various activities. To this end, the area has been crossed by a roadway that contributes to alleviating traffic on the Via Vito Cosimo Basile artery by creating a connection with Via Antonio Ardito and with Viale Kennedy, and by a cycle path that connects with the one already present in Viale Kennedy. Along the residential strip, a row of parking spaces has been preserved, while on the other side, the presence of the railway tracks has been mitigated by a thick strip of greenery. The area is designed as a public space characterised by the presence of green beds, seating (useful for waiting for trains given the proximity to the station), and pavilions for temporary functions, such as markets, fairs and events linked to the local economy, particularly to the renowned local fruit and vegetable production.

AREA 3 - Via Marconi: Social Housing and Urban Regeneration

Regarding the Via Marconi area, the project envisages a multifunctional complex that aims to offer an innovative and integrated housing model capable of responding to the city's multiple needs. The design approach is aimed at creating dynamic and functional environments, capable of favouring intergenerational interaction and enhancing the urban fabric, through the integration of functional programmes that also contribute to the regeneration of existing areas, hosting proximity services and functions that the municipality lacks or is deficient in: commercial spaces, offices, gymnasium and swimming pool, multipurpose spaces, medical services, recreational areas and nursery.

External squares and pedestrian paths intersect throughout the site, forming a fluid network that invites people to experience the space "between the houses". The public space becomes a bioclimatic device integrating nature-based solutions such as urban wetlands to improve stormwater management and reduce hydraulic risks, ecological corridors, and linear parks, to contribute to microclimate regulation.

The social housing component aims to guarantee access to quality housing solutions at affordable costs, targeting vulnerable population groups, providing housing solutions based on the aggregation of a basic module with varying floor areas ranging from 38 to 80 sq m (38, 46, 62, 70, 80 sq m). The project envisages a balanced social mix consisting of 70% social housing and 30% proximity services, also guaranteeing 15 sq m per inhabitant of dedicated green space in residential areas. The intervention represents an articulated and sustainable response to contemporary housing challenges, promoting technological innovation and human-centred design to create integrated and resilient communities. Particular attention has been paid to the specificities of the Mediterranean geographical context, for design oriented towards overall environmental sustainability, both from a morphological point of view and in terms of the technological solutions adopted. The buildings meet NZEB performance standards, adopting active, passive and ecological strategies for design with a considerable reduction in energy consumption compared to local standards. Specifically, the volumes are oriented to maximise natural ventilation and favour solar gain in winter months, while the articulation of the façades allows the creation of loggias capable of guaranteeing shading and ventilation in the summer season. The building envelopes feature ventilated walls with external cladding in local stone to recall the identity of the place and mitigate overheating of exposed walls. The residential complex is placed on a platform beneath which a further 100 parking spaces are located, serving not only the neighbourhood but also the surrounding areas. This space is configured as a cool-air channel that is used for air conditioning internal spaces through a hybrid plant system. The system is powered by renewable energy with photovoltaic panels placed on the building roofs.

AREA 4 - Villa Pinocchio: Integrated Urban Park

Villa Pinocchio has been completely rethought. At the basis of the project is the elimination of the current fence that characterises it as an element of urban barrier. Eliminating this barrier allows the urban fabric mesh to be rewoven, creating paths that shorten distances and transform the park into an area of passage and rest, play and culture, accessible to residents and tourists. Various services, both public and private, have been integrated into the park, positioned to preserve existing trees. Among the public services: children's playground, basketball court, five-a-side football pitch, sports equipment, spaces for reading and relaxation, seating and tables for outdoor dining, shaded areas and public toilets. Along Via Papa Giovanni XXIII, the road axis that connects various public buildings (Town Hall, Post Office, Carabinieri Barracks, Primary School), the park takes on the connotation of an urban square onto which two buildings face, a newsstand-bookshop and a bar, which integrate harmoniously among the trees. The square is characterised by the conservation of pre-existing trees, which create shade and by the presence of benches and water features. The surfaces are all at the same level to improve accessibility and are all drainage-permeable.

IMPLEMENTATION STRATEGY

The project **will be implemented in phases:**

1. The intervention that has absolute priority is that of area 1, because it would resolve the urgent problem of parking shortage and the lack of services for structured tourism. Contextually, the new cycling paths and services connected to public electric mobility would be implemented to complete the sustainable mobility plan.
2. The second step includes the implementation of area 2, which integrates and completes the interventions already in progress (the cycle station and the station square) and improves the experience of visitors arriving by train.
3. The third step concerns the implementation of area 3, in Via Marconi, which, despite being the most extensive intervention, would contribute to countering the gentrification phenomenon, guaranteeing a

significant number of new dwellings destined for the municipality's inhabitants, in addition to offices and services currently lacking.

4. The last step provides for the implementation of the new "Villa Pinocchio" park, which is configured as the redevelopment of an already existing service, with a lower level of urgency compared to the other interventions.

SOCIOECONOMIC IMPACTS AND SUSTAINABILITY

The implementation of Polymnia Futura will generate significant employment opportunities with the creation of new jobs distributed between the construction and management phases. The project will also favour the development of new commercial and service activities in the redeveloped areas, contributing to the economic vitality of the region. The financial sustainability of the intervention is guaranteed by an economic model that provides for the recovery of part of the public investments through increased tax revenues, while social housing rents are structured to fully cover the management costs of the structures. From an environmental point of view, the project will implement a total of 11,700 sqm of new green areas and guarantee the use of 60% local, recycled or eco-compatible materials in construction interventions. All new buildings will be powered by renewable energy sources, confirming the commitment towards the area's ecological transition.

GOVERNANCE AND STAKEHOLDERS INVOLVED

The multi-stakeholder complexity of the project is addressed through an integrated governance model based on three operational levels that guarantee strategic coordination, effective implementation and participatory control. The Governance Committee sees the Municipality of Polignano a Mare in the role of lead entity for urban planning and public works, in strategic partnership with RFI and FS Sistemi Urbani for the development of railway areas, considering that RFI holds ownership of three of the four intervention areas. The institutional framework is completed by the Puglia Region through the Infrastructure and Territory Department, the Metropolitan City of Bari for supra-municipal mobility, ARCA Puglia for social housing, together with civic stakeholders represented by residents' associations and tourism operators. The implementation instruments are diversified for each area according to financial and management sustainability logics: Area 1 of Via Lepore adopts a public-private partnership model under concession for the underground car park and mobility hub, where RFI makes the site available while the concessionaire guarantees financing and management; Area 2 of Viale Trieste develops through Municipality-RFI programme agreements with co-financing from national funds for urban regeneration and regional resources; Area 3 of Via Marconi uses housing finance instruments in collaboration with ARCA Puglia, exploiting regional volumetric incentives; Area 4 of Villa Pinocchio is based on collaboration pacts between the Municipality and associations for park co-management, with maintenance guaranteed by the municipal budget integrated by sponsorships from local operators.

MONITORING AND CONTROL SYSTEM

The monitoring mechanism is structured through an annual **Joint Review Board** between the main institutional actors that produces public reports on KPIs, supported by an open-data digital system that integrates IoT sensors for continuous monitoring of traffic, air quality and use of public spaces. A digital platform will provide real-time dashboards for both citizens and administrators, while a dedicated app will allow direct feedback and reports from the community. The monitoring system provides for continuous monitoring for critical KPIs relating to mobility and energy, six-monthly surveys for social indicators, quarterly surveys for environmental parameters and an integrated annual report that synthesises the project's overall performance. Baselines are established through surveys of the current pre-intervention state, with intermediate targets and final objectives to be achieved within five years of completion of the last intervention. This arrangement guarantees clear responsibilities, diversification of funding sources through public-private partnerships, national and European funds, and active community involvement in the daily management of public space, ensuring a transparent and participatory decision-making process that maintains coherence with the sustainable urban regeneration objectives that characterise the identity of Polymnia Futura.