POLITECNICO DI TORINO

Master of Science in
“Architecture Construction City”

M.Sc. Thesis

Adaptive reuse of OSI GHIA EX-FACTORY

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ABSTRACT

The conversion of the OSI Ghia Factory in Turin – a place of historical importance which, however, was historically left in a state of underutilization – into a new establishment pointing to the modern urban industry can be a way to fill the gap between heritage preservation and current urban development. This study is examining how the transformation of industrial brownfields can give a fresh impetus to the development of sustainable urban areas and at the same time rescue cultural and architectural inheritances.

The OSI Ghia Factory, which is a vivid reminder of Turin's industrial age, offers not only an opportunity but also a challenge in the reopening of a historically valuable and yet forgotten area, which meets the needs of the economy and society in the wake of the renewal of culture and history. It is the leading goal, i.e., to create a locally appropriate framework for the factory's reuse that can be a holy grail in the integration of economic growth, environmental protection, and social cohesion.

Aligned with the goals of sustainability in the urban area of Turin, the initiative aims not only to raise the level of the local economy but also to help create sustainable employment and generate opportunities for the development of the local community. By employing a mixed-methods design that encompasses a systematic review of adaptive reuse and urban regeneration as a theoretical framework alongside an analysis of similar ventures, the research identifies both the challenges and the best practices for converting the old production facility into a model that can be replicated elsewhere while being more inclusive and environmentally friendly.

Key Words: OSI Ghia Factory - Urban sustainability - Sustainable urban growth - Environmental enhancement - Urban Design

CHAPTER 1
Theoretical Framework & Project Introduction

Introduction

A large number of non-commercial cities underwent the negative impact of the dwindling number of big production companies in the last century. It was the economic crisis and the layoffs that resulted from it, which not only destroyed the factories but also became the only source of big areas of the industry that lie fallow and are spoiling the already dilapidated urban infrastructure in many cities (Sugrue, 2005).
Just like Detroit in the US, the Turin industrial region, with its mainstay being automobiles, has enjoyed a great deal of progress during the 20th century. The automotive industry has contributed greatly to the identity of the city all through the 20th century (Bagnasco, 1986).
This is the period during which the city was formed by the car and car parts manufacturing companies' sector.
The place, which is now referred to as 'Detroit of Italy', used to be actively used by the residents, who had a great sense of community there, given the over a century-long history of the car-making OSI Ghia Factory.
The closure of the manufacturing center in the 1990s, followed by a series of job losses, reshaped the depth of people's feelings towards the place and steelworks.
Despite being close to the center of Turin, the brown-tinted OSI Ghia Factory is still a nearly disused void located in a land filled with obstacles like train tracks. These obstacles bar accessibility as well as learning and breakthroughs in the place’s successful integration into the urban landscape (Di Biagi, 2001).
Although it has been mainly a place that depicts Turin's industrial past and the other face of the coin is connected to the city's plan to get it renovated, the site still lacks vitality and remains underutilized (Di Biagi, 2001).

These barriers not only impede access but also learning and breakthroughs in the place's successful integration into the urban landscape (Di Biagi, 2001). The location has been a major contributor to Turin's industrial history but on the other hand, it is still cold and the plans to get it renewed haven't been fully implemented and the site is still a bit cold. The city has been implementing urban renewal plans for these abandoned industrial areas since 1996 and it looks like the plans have been partially successful.The opportunity of giving a modern viewpoint to those places, by watering them as a kind of transport facility and amusement place for people, is a perfect moment to fit history and the city's current needs together and at the same time, be the solution to the city's unavoidable environmental, economic, and social problems (Yung & Chan, 2012). The adaptive reuse of industrial buildings is the most important factor in regaining and reestablishing these places into the urban context, not only for their historical value but also for the contribution they can make to the new city life (Bullen & Love, 2010). Turning the OSI Ghia Factory into a dynamic urban area is a chance to back up Turin's sustainable development objectives by ushering in green areas, natural materials, and better accessibility. In this way it can be not only a source for economic development, the creation of jobs, and the participation of the community, but also for the culture and social identity of the lively neighborhood to go on (Yung & Chan, 2012).

1. Preserving Turin's Industrial Heritage

Turin has a solid industrial past that almost completely shaped the city's identity in the 20th century especially when it was an automotive manufacturing center. The most famous example is the Fiat car factory, which embodied the city's overwhelming industrial power. Over the course of the late twentieth century, however, after a period of rapid deindustrialization, places like the OSI Ghia Factory are now empty and in poor condition. The factory is the only thing that allows people from Turin to remember the industrial past of their city, with its dilapidated buildings being the visual representation of the industrial history of the city. The gradual decay of these structures has led to calls for urban renewal in the area.

In Rodwell's (2007) words, the preservation of historical landmarks from the industrial era by the cities allows them to be connected to their roots. The OSI Ghia Factory is basically a living museum of the history of the city of Turin and at the same time it showcases adaptive reuse as a way to become more dynamic and at the same time maintaining good relations with the community of the past. The authors Langston et al. (2008) consider that reusing heritage buildings can help heritage preservation to be sustainable over the long term through strategically assessing adaptive reuse projects, thus the OSI Ghia Factory can be regarded as a case study of sustainable urban transformation. Plevoets and Van Cleempoel (2011) maintain that through heritage preservation, Turin will manage to accomplish not only the preservation of industrial heritage but also the realization of the economic growth potential and community participation mobilization.

2. Environmental and Economic Revitalization

Redeveloping brownfields such as the OSI Ghia Factory provides not only challenges but also significant opportunities. De Sousa (2006) emphasizes the ecological advantages of such projects, suggesting that the reuse of the land can bring about better soil quality and a decrease in the polluting effects caused by the industries. This is in line with Turin’s broad environmental objectives. Adams et al. (2001) also show that "the reuse of industrial land can be a source of employment and a trigger for the attraction of investments."

other words, the refurbishment of the OSI Ghia Factory can bring forth the benefit of new industries and spur the local economy to move in a new direction, as well as serve as a reference for the redevelopment of such sites in the future. The book Brownfield Redevelopment*: A Primer* (Adams et al., 2001) elaborates on that context and clearly outlines the economic revitalization potential that is present in such projects.

3. Enhancing Social and Cultural Identity

The renewed operation of the OSI Ghia Factory is able to contribute to community engagement and cultural resurgence. A reading by Rodwell (2007) suggests that "redeveloping industrial heritage sites can enhance a city's cultural identity," resulting in the creation of places that not only reflect the past but are also functional for today's crowd. This project can propose a productive setting in which the OSI Ghia Factory is accessed for multiple purposes, which brings about the reunion of a place's residents with their past industrial heritage at the same time that urban needs become the present.

De Sousa (2006) records that the adaptive reuse of the property is often more beneficial in terms of social aspects such as "the generation of green spaces and recreational areas," which also contribute to the well-being of the community.

4. Strategic Alignment with Urban Planning

It has become clear that Turin's urban planning is presently focusing on sustainability, and the adaptive reuse of the OSI Ghia Factory aligns well with these directions. Alker et al. (2000) point out that "brownfield redevelopment is a key strategy for reducing urban sprawl," an essential instrument for minimizing land occupation in Turin. Renewable energy systems and the use of eco-friendly materials are key aspects of the city's strategy to ensure its sustainable urban potential. Plevoets and Van Cleempoel (2011) indicate that "successfully combining heritage conservation with sustainable innovation can position cities like Turin at the forefront of urban regeneration," providing a roadmap for future projects.

This thesis was prepared with the assistance of Artificial Intelligence tools for grammar and language refinement.

Literature Review

Urban redevelopment has seen the reinvention of abandoned and often contaminated industrial brownfields into more valuable pieces of land. This new concept of development has a two-pronged approach: dealing with pollution and environmental issues, and at the same time providing the resource for moving towards sustainability. De Sousa (2006) deeply stresses how this sustainable use of brownfield land has facilitated new building construction without encroaching on outlying areas of the city and has become a major partner in pollution remediation. This study deals specifically with the possible transformation of the OSI Ghia Factory in Turin and also probes into its potential for sustainable adaptation and the environmental risks that are inherent in its present condition.

A good deal of literature has been written concerning adaptive reuse, which is one of the most meaningful trends in the environmental field today. In addition to exploring the features of adaptive reuse, a multitude of works have been dedicated to the implementation part of the strategy, disclosing both worthy aspects and tricky issues involved. Alker et al. (2000) enlighten us on the significance of environmental remediation methods in reducing risk from toxic waste in urban areas. The research conducted by them demonstrates that during the execution of a project, tasks related to the cleaning of a contaminated area are often quite challenging and demand additional time and expenses, which in essence indicates the necessity of a comprehensive and successful preparatory phase.

From the perspective of revitalizing urban life through the industrial rehabilitation process, Adams et al. (2001) focus on the fact that in some cases, like the transformation of the Meatpacking District in New York, the schemes have been the initiators of new job opportunities and fundraisers that actually attracted more investments. On the other hand, their research is directly related to major projects requiring considerable financial resources, thereby giving rise to the issue of whether the models may be pertinent to situations of a smaller scale and less stable economy like those found in Turin. In one of his chapters where he deals with architectural archaeology, Rodwell (2007) argues that, leaving aside the question of its preservation, the historical building of the industrial era constitutes the best historical landmark, imparting to a city the culture and history that are uniquely its own.

According to him, adaptive reuse is one significant aspect of the reclamation not only of functional use but also of the issue of shared memory and the connection with existing communities.

Moreover, heritage conservation advocates such as Plevoets and Van Cleempoel (2011) require that sustainable innovation and the conservation of cultural property become closely related. They state that the connection with the past industrial epoch of the city is an integral part of any urban rejuvenation campaign. The authors note that the methodology in reuse research can be very different; thus, the results and conclusions will be directly affected by the methodology used. De Sousa, for example, in 2006, applied a case study approach with a quantitative focus on the environmental sector. His direct outcomes were real measures of the problems' improvement.

In their study, printed under the title The Applicability of Life-Cycle and Remediation Principles to Venturi Spacer Cleanup Developments, Alker et al. basically explore the efficiency of different methods. The findings of Alker et al. (2000) are that soil, gas, and air injection are the most appropriate methods for site remediation. Adams et al. (2001) employ a mix of methodologies: one to gather data and the other to obtain insight from interviews. The tools used in combination come up with a rich description of the motivations. Nevertheless, such a qualitative method usually overlooks the social dimensions of the issue of reuse, which can be the most significant of all. Nevertheless, the positive impacts referred to in the studies above are insufficient without corresponding limitations. De Sousa (2006), for example, has concentrated primarily on the positive environmental effects, but he failed to elucidate the negative social ones, such as destabilization and even displacement of the communities. On the other hand, Alker et al. (2000) speak only about the technical aspect of it without incorporating the socio-cultural perspectives. Although the work carried out by Adams et al. (2001) proves to be comprehensive, the authors talk mostly about the bigger projects, not leaving space for the small urban environments. This situation raises the question of the applicability of their findings.

Case Studies

Landschaftspark Duisburg-Nord, Germany

FIGURE 1 – Landscape view of Landschaftspark Duisburg-Nord, showcasing transformed industrial structures.
Source: Latz + Partner, official project documentation.

Duisburg is a city in the Ruhr basin, one of Germany's most densely populated areas due to heavy industrial growth which took place from the mid-nineteenth century. The river Emscher runs through the Ruhr region, which is home to approximately two million inhabitants living across 17 cities. This region is known for its industrial landmarks that bear witness to its important past, including mines and iron and steel works that are now largely disused, as well as an extensive road and rail network crossing the area. Notably, the river Emscher was channelled to serve as a sewage collector for the region (Latz & Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

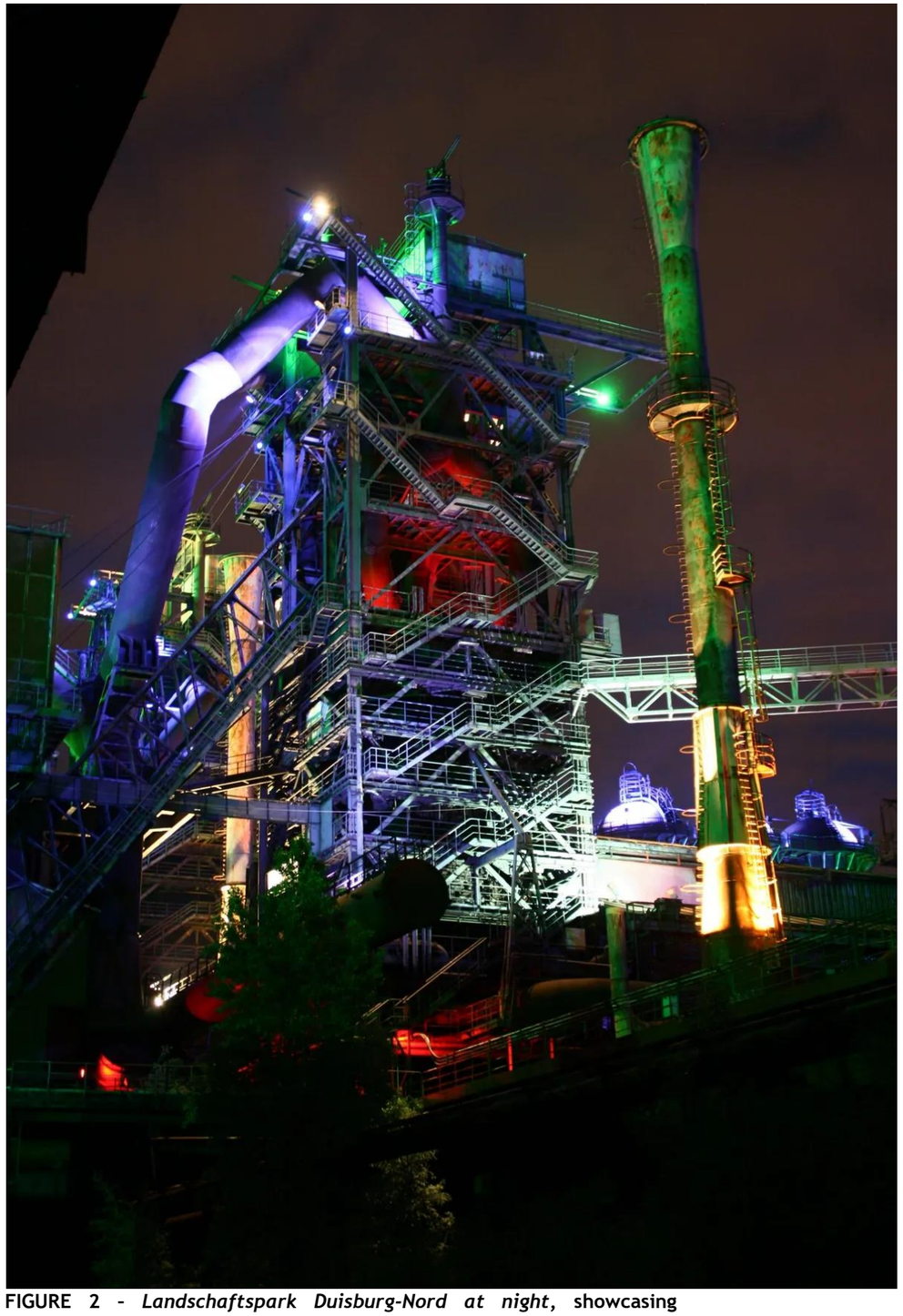


FIGURE 2 – *Landschaftspark Duisburg-Nord at night*, showcasing illuminated blast furnace structures repurposed for cultural use. Note. Image from the official project documentation by Latz + Partner (n.d.).

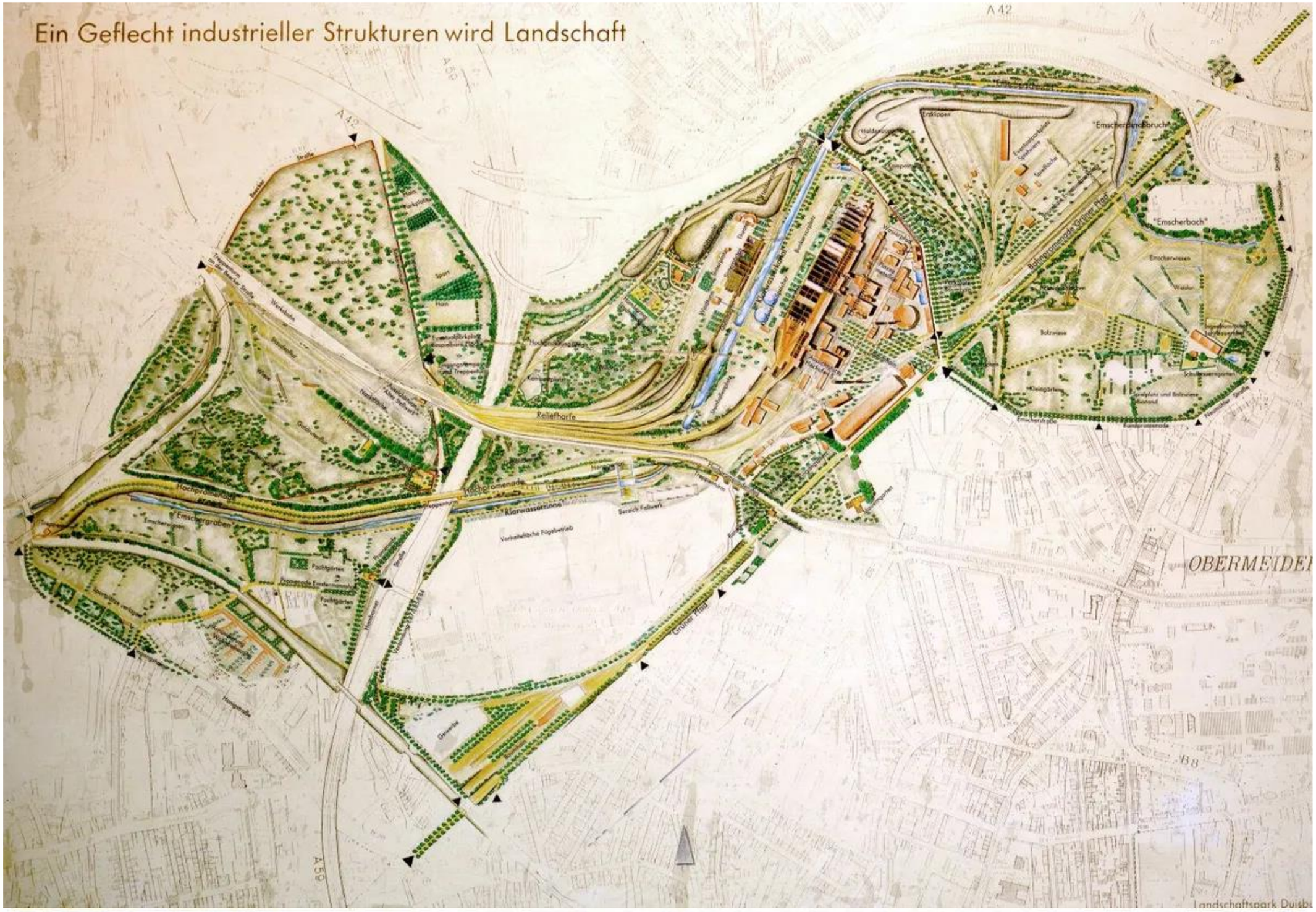


FIGURE 3 – *Ein Geflecht industrieller Strukturen wird Landschaft (A network of industrial structures becomes landscape) — schematic master plan sketch of Landschaftspark Duisburg-Nord (Latz + Partner, ca. 1989–1991).*

The former iron and steel works, Thyssen Hochofenwerk Meiderich, situated between Duisburg's Meiderich and Hamborn districts, was a major example of heavy industrial development in the Emscher region. The top of the scale facilities covered 200 hectares of land and included mining and coke production areas, iron and steel works, cement storage tanks, and a vast network of industrial railways. When the Thyssen plant stopped its operations in the mid-1980s, the place, which was closed off and definitely not known to most of the nearby residents, turned out to be heavily contaminated with pollution of both land and water. However, the lack of industrial activity not only has prevented the pollution from getting worse but allowed for unauthorized ecological regeneration, thus, giving the site a good reputation for future possible reuses (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

FIGURE 4 – Aerial view of Landschaftspark Duisburg-Nord, depicting the adaptive reuse of industrial heritage within green infrastructure. Source: Latz + Partner, official project documentation.

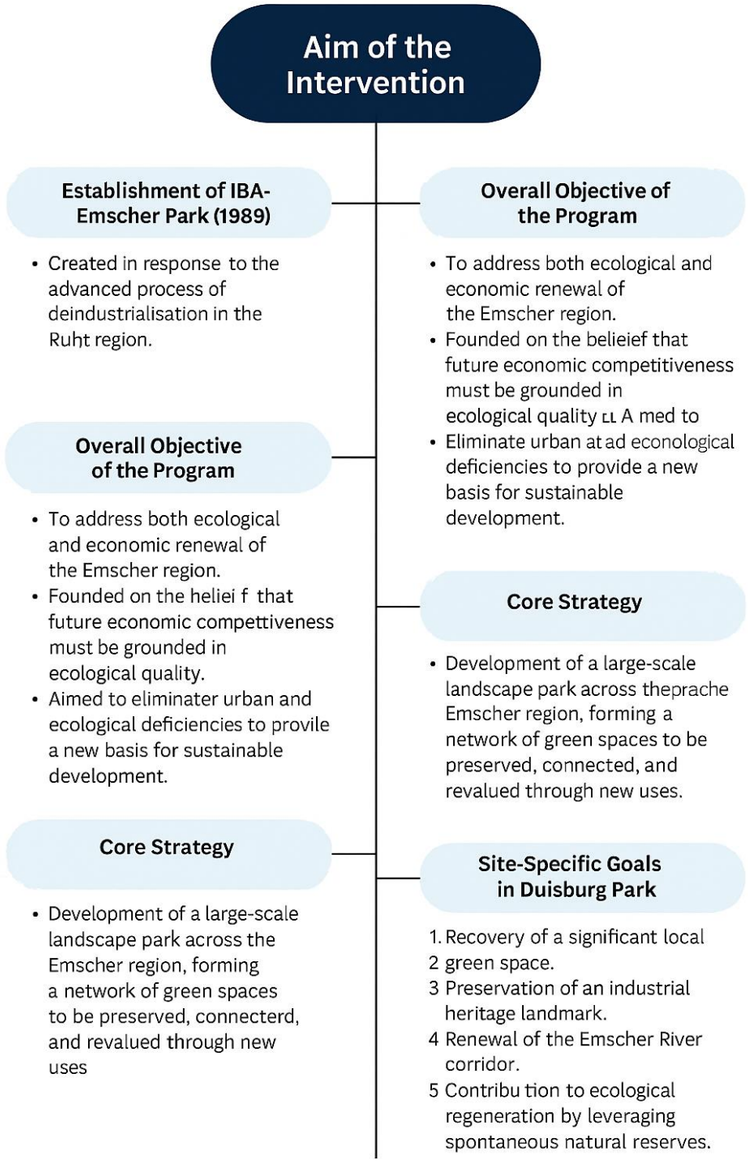


FIGURE 5 – *Aim and objectives of the IBA Emscher Park intervention*. Note. Diagram created by the author based on IBA Emscher Park memorandum (1996) and analysis in European Planning Studies (International Building Exhibition Emscher Park, 2002).

Description

The park site was once a fragmented and heavily degraded industrial landscape, divided by roads, railway lines, industrial structures, and pollution. This fragmentation rendered the original terrain almost unrecognizable. The intervention aimed to reclaim this former industrial land and transform it into a multifunctional public space, all while preserving and enhancing the site's ecological potential. Rather than demolishing the old iron and steel plant — due to both financial and historical considerations — the design embraced the site's inherent complexity. Industrial structures were repurposed and integrated with existing spontaneous vegetation and wildlife. Local resident associations also played a vital role by contributing cultural and recreational ideas that helped shape the park's vision (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

The park is structured around several interconnected systems, notably:

Water System

Rainwater is channeled through former cooling tanks and used to regenerate the canalized Emscher River. The transformation of the old open wastewater canal of the "Old Emscher," which crosses the park from east to west, resulted in a clean water channel with bridges and walkways. Exclusively fed by rainwater, the system is an artificial construct that imitates and restores natural processes within a degraded environment. Governed by ecological principles yet maintained through technological means, it symbolizes a dialogue between human intervention and natural regeneration — simultaneously natural and artificial (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

Railway System

The old railway tracks — some still operational, others abandoned — form a continuous and intricate network that extends into the surrounding neighborhoods. These tracks were transformed into elevated walkways up to twelve meters high, offering panoramic views that were previously inaccessible. The berms are now covered with diverse vegetation, some of which arrived with imported ore, forming striking bands of color and form alongside the linear tracks (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

Vegetation System

A wide variety of plant species emerged in response to the unique soil conditions left by industrial processes — including smelting residue, sand, and ash. In some areas, contamination was managed by sealing off the soil or layering it with clean topsoil, while in others, natural succession was allowed to flourish (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

Blast Furnace Park

One of the most iconic transformations within the park, the Blast Furnace Park reuses monumental industrial relics instead of dismantling them. Structures such as blast furnaces have been repurposed into observation towers and venues for cultural events, establishing a strong connection between the site's industrial past and its contemporary public use (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

Piazza Metallica

Piazza Metallica is a symbolic central square made from recycled smelting blocks. Originally a pig-iron casting facility, it now serves as a major gathering space for public events. This reinterpretation of industrial remains as active public elements embraces decay as a design strategy, converting former contamination into cultural value and reshaping the relationship between landscape, memory, and industrial heritage (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

Sinter Park

Built on the former site of a heavily contaminated sintering plant that was nearly entirely demolished, Sinter Park has been transformed into a lush meadow and shaded grove. Today, it functions as a spacious festival ground, framed by remnants of an overhead railway and a 300-meter elevated walkway. This high-level path crosses the old ore bunkers and overlooks multi-level gardens. Formerly filled with industrial materials like ore, coal, lime, and ash, these spaces now house sealed pollutants, water features, and enclosed gardens (horti conclusi) full of biodiversity (Latz + Partner, n.d.; Route Industriekultur, n.d.; Public Space, n.d.).

Ore Bunker Gallery

Developed in collaboration with artists and the Lehmbruck Museum in Duisburg, the Ore Bunker Gallery is a complex of massive former storage bunkers converted into a labyrinthine sequence of artificial gardens, microclimates, and art installations. Footbridges and walkways pass through openings in thick concrete walls, offering a richly immersive sensory experience (Latz + Partner, n.d.)

Play Points

Scattered throughout the park, Play-Points offer zones of exploration and creativity. Industrial structures are reinterpreted in playful ways, inviting visitors to interact with the remnants of the site through imagination and movement. The entire park becomes a vast adventure playground shaped by adaptive reuse (Latz + Partner, n.d.).

Together, these elements demonstrate a holistic design strategy that integrates history, ecology, artistic expression, and community participation. The park not only rehabilitates a post-industrial landscape but also redefines how we perceive and interact with former industrial sites, turning them into vibrant, meaningful, and multifunctional public spaces.

Menomonee Valley Redevelopment, Milwaukee, Wisconsin, USA

Milwaukee, Wisconsin's Menomonee Valley Redevelopment is a brownfield redevelopment case that illustrates the potential of brownfield cleanups to improve environmental, economic, and social conditions (City of Milwaukee, n.d.; Menomonee Valley Partners, n.d.; Wisconsin Policy Forum, 2014). The venture has highlighted the positive side of the redeveloping of the old industrial sites into the community. The article below provides an overview of the relevant metrics associated with the Menomonee Valley Redevelopment project, along with some ideas for graphical representations of the data.

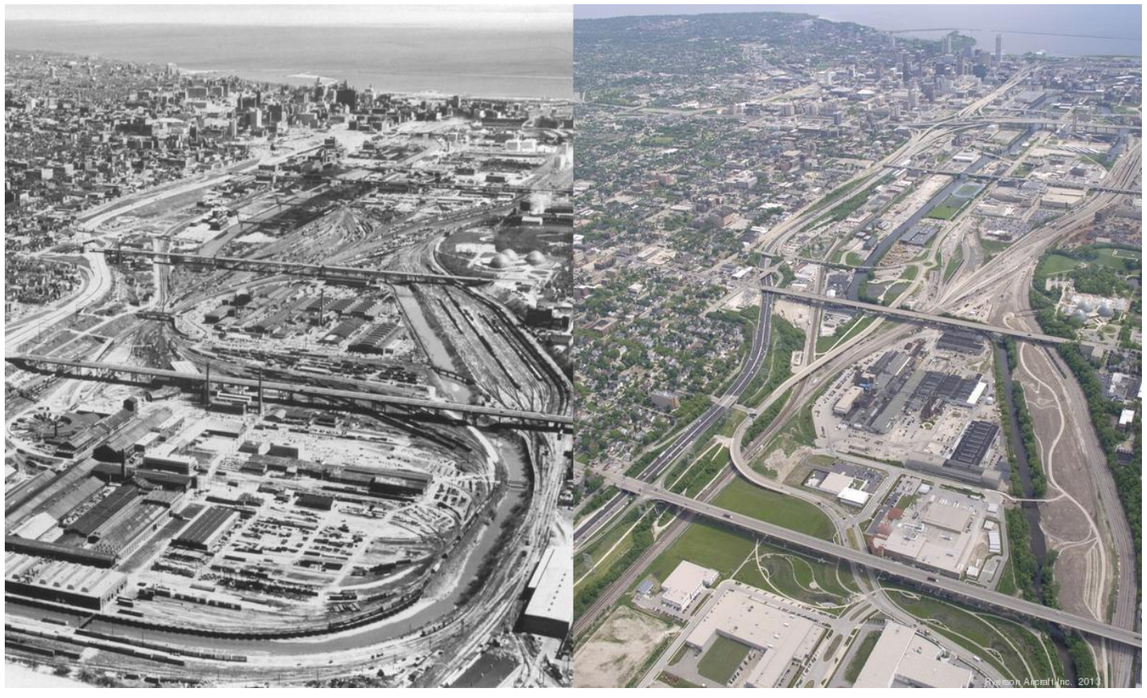


FIGURE 6 – ***Transformation of Menomonee Valley, Milwaukee: comparison between the industrial landscape circa 1935 (left) and proposed redevelopment plan (right).*** **Note. Image sourced from Milwaukee Business Journal article on redevelopment progress (2019).**

Environmental Improvement

Brownfield Site Reclamation: To be more specific, nearly 400 acres of industrial land which were out of use have been reclaimed in the Menomonee Valley, thus raising the environmental quality of the area and providing the community with green spaces (City of Milwaukee, 2016; Menomonee Valley Partners, 2018).

Pollution Reduction: The redevelopment of contaminated soils in the Menomonee Valley has also led to a major reduction in the soil pollutants. Firstly, municipal data says:

Before Redevelopment: The average lead concentration was approximately 1,200 ppm.

After Redevelopment: Lead levels were reduced to around 300 ppm (City of Milwaukee, 2016).

Economic Impact

Job Creation: The redevelopment initiative has indeed created about 5,200 family-supporting jobs in the area that have contributed to the revitalization of the local workforce (Menomonee Valley Partners, n.d.).

Business Growth: There are new businesses total more than 70 that have opened since the beginning of the redevelopment of the area and they have contributed to the economic diversity and vitality (Menomonee Valley Partners, n.d.).

Investment: The project has brought in more than $100 million in private investment, which is a clear indication of its financial importance (Menomonee Valley Partners, 2018).

Social Benefits

Community Satisfaction: A series of surveys conducted prior to and after the redevelopment indicate a clear rise in community satisfaction with public spaces and access to amenities. Before redevelopment, satisfaction was around 40%, which increased to 75% post-redevelopment (Menomonee Valley Partners, 2018).

Parks and Green Space: About 40 acres of new parks and recreational areas have been created, thus raising the quality of life for the local residents (Menomonee Valley Partners, 2018).

Extensive research has examined the implications of adaptive reuse, revealing both its potential and its challenges. The Menomonee Valley case study serves as a practical example of the positive outcomes that can result from effective brownfield redevelopment, aligning with the proposed objectives for the OSI Ghia Factory project

Parco Dora, Turin, Italy

Parco Dora in Turin, which used to be the Spina 3 industrial area, is the perfect example of the conversion of old industrial sites into green areas for urban use. The land the park is on was the major industrial center of the region that was home to Fiat, Michelin, and Nia Viscosa, whose record of business ventures defined the city's identity to the world, until the 1990s (Wikipedia, 2025).

Those industrial plants were almost totally shut down in the 1990s resulting in the mass abandonment of the huge industrial facilities and thus, the decline of the activity that generated the economy in that sector. An urban renewal program was started in 1998 with the main purpose of giving the area a new face while still keeping the plant's industrial history and its memory alive (Comune di Torino, n.d.).

Now, the park bears the signature of Latz + Partner as they have employed a very innovative approach of layers in the restoration of the landscape reusing elements from the industrial structures such as steel columns, cranes, the former cooling towers alongside the green areas and the public paths thus creating a history and new urban functions hybrid (Latz & Partner, 2012).

The park of Parco Dora is undoubtedly today the biggest and most prominent green space of the city of Turin divided into five parts—Ingest, Michelin, Valdocco, Vitali and Mortara—that are like a mirror to the area's industrial history (Comune di Torino, n.d.; Wikipedia, 2025). The park as a place is not only a memory of the city's industrial past but also a symbol of its transformation and of its sustainable and livable future.

One of the main design elements is the strong relationship with surrounding neighborhoods and the revitalization of the Dora River waterfront. The park integrates bridges, ramps, and pathways that connect it to adjacent districts, and includes waterfront trails intended for cycling and walking as part of the *"Torino Città d'Acque"* initiative to improve accessibility (Latz + Partner, n.d.; AboutPlants, 2019).

In the Vitali district, the industrial heritage plays a central role in the design. Here, the architects removed the façades of a former industrial hall, leaving exposed *steel columns* that now support climbing vegetation—creating an *"industrial jungle"* where the site's structural history harmoniously merges with nature (Latz + Partner, n.d.; Architettura Ecosostenibile, 2018).

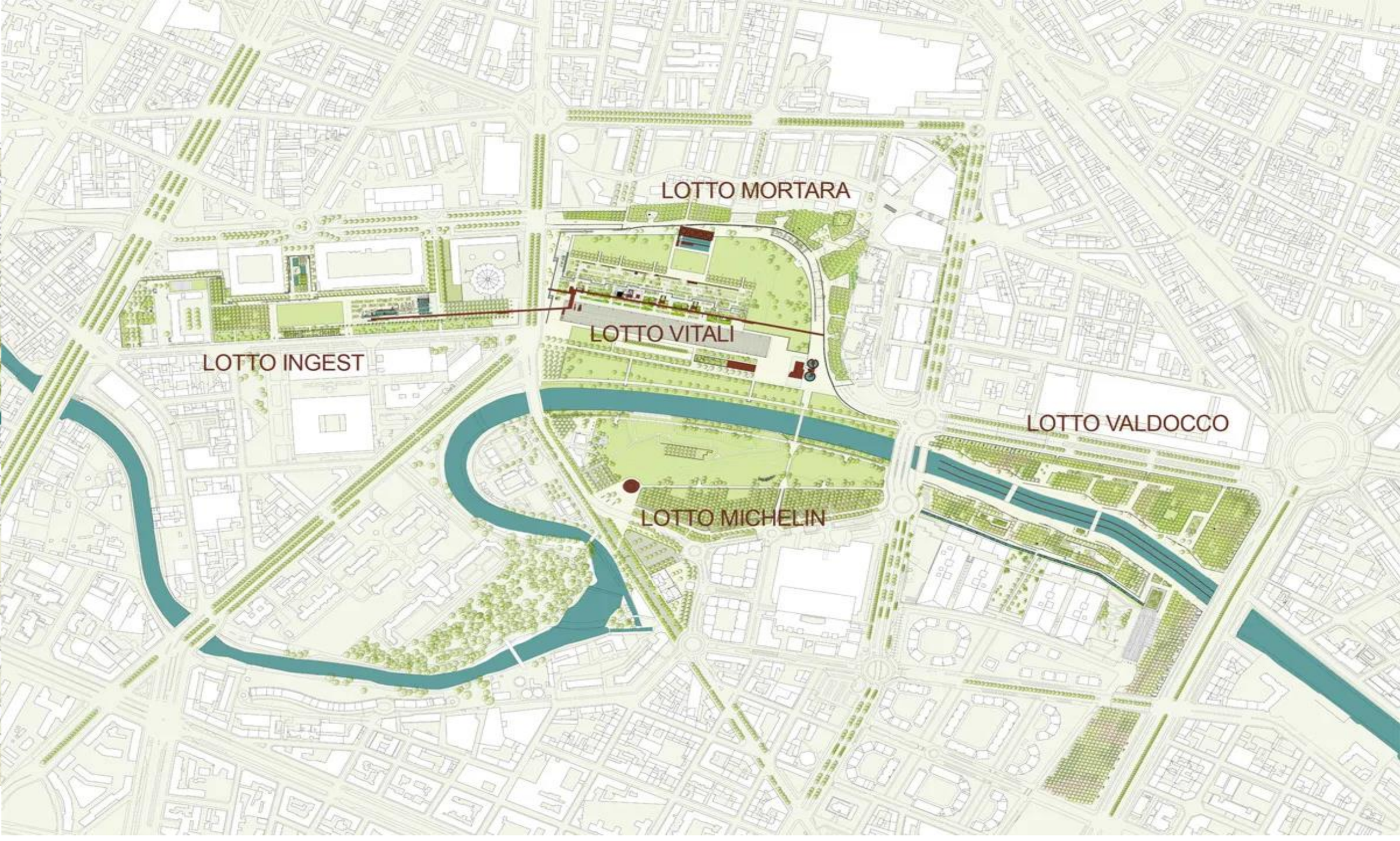


Figure 7- *Masterplan of Dora Park regeneration in Torino*, showing the reuse of former industrial areas (Ingest, Vitali, Michelin, Valdocco). Note. Plan from official documentation by Latz + Partner (2004–2012).

The legendary 30-meter red steel columns make eye-catching along the green color of parco Dora. The large roofed area is actually one section of the park, it is the original roof structure, and thus a covered place is available for the cultural events as well as the recreational activities, the industrial atmosphere has been preserved here, but the community use has not been forgotten. In the Michelin part of the park, old cooling towers have been cleverly changed into sustainable water management systems that not only get and store the rainwater, but also they provide the park with the water needed for the ecological functions that are carried out in the park (Comune di Torino, n.d.; Latz & Partner, 2012).

FIGURE 8 -*View of Parco Dora*, *Torino*, showing the adaptation of former Fiat and Michelin industrial structures into a public landscape park. Note. Image from the official project documentation by Latz + Partner (n.d.).

FIGURE 9 - *Central axis of Parco Dora*, *Torino*, with preserved industrial steel roof structure serving as a multifunctional urban shelter. Note. Image from the official project documentation by Latz + Partner (n.d.).

The reimagination of Parco Dora is the most illustrative example of the great potential of brownfield redevelopment to facilitate community involvement, provide better environmental conditions and energize the local economy (Latz & Partner, 2012; Wikipedia, 2025). The design approach is congruent with the tenets of green urban development, placing great emphasis on the biodiversity, accessibility, and cultural heritage aspects. In this sense, Parco Dora is a good prototype for other post-industrial cities which look to give a second life to such areas by creating open spaces that are not only inclusive and resilient but also ecologically and sociologically significant.

Research Gap

Despite a growing body of literature on adaptive reuse, the specific economic outcomes of transforming small industrial sites—such as the OSI Ghia Factory in Turin—into multifunctional urban spaces remain underexplored. While much attention has been given to the environmental and cultural value of reusing industrial heritage (Plevoets & Van Cleempoel, 2011), fewer studies investigate how adaptive reuse can serve as a catalyst for local economic regeneration and community cohesion. This gap in research is particularly evident in cases where former industrial sites could become vital nodes of economic and social revitalization within post-industrial cities (Bullen & Love, 2010).

Moreover, although adaptive reuse is increasingly recognized as a sustainable practice in the conservation of cultural heritage (Plevoets & Van Cleempoel, 2011), there is limited empirical analysis linking such projects directly to job creation, increased local economic activity, or enhanced social wellbeing. Therefore, this research seeks to examine how the reuse of the OSI Ghia Factory could function as an economic and cultural hub, contributing not only to the local economy but also to a more inclusive and livable urban environment for Turin’s residents.

Research Questions

1. How can the adaptive reuse of the OSI Ghia Factory enhance the local economy through job creation and the introduction of new functional uses?
2. How can the redevelopment of the OSI Ghia Factory foster stronger connections within the neighborhood, promoting social cohesion and a more livable community?
3. What specific strategies can be employed in the OSI Ghia Factory's redevelopment to balance historical preservation with sustainable, modern functions?

Hypothesis

This study is based on the principles emphasized in the theories of sustainable urban development and adaptive reuse, which encourage efficient repurposing of the current infrastructure to better the economic and social results. The research will exploit a multiple strategy to solve all the tasks that are involved in the process of redeveloping industrial brownfields. A combination of different methods, which imply a deep analysis of the current environmental situation, the search for sustainable solutions, and cautious evaluation of economic and social repercussions, will be a focus of this study

Research Methodology

The methodology is designed in such a way as to investigate the adaptive reuse of the OSI Ghia Factory in Turin as the main goal for creating the financial benefit of the working place alongside building the community connections in the surrounding neighborhood. The research includes the theoretical perspectives, methods to deal with the problems, tools of the study, methods of data collection, data analysis, and the research area.

Theoretical Framework

This project looks into the re-creation of industrial sites into a green urban landscape by innovative reuse, environmentally friendly urban growth, and social interaction. The main point of Adaptive Reuse Theory (Bullen & Love, 2011) is that changing old industrial places into productive ones is the least polluting way of resource management.

Additionally, Urban Regeneration Theory (Roberts, 2000) underlines the importance of a balanced combination of environmental, social, and economic policies to optimize the well-being of the communities that we want to regenerate. Refurbishment and community empowerment are the focus, not merely maintenance.

Place-Making Theory (Ellery & Ellery, 2019) deals with the social aspect, as new, inclusive, and sustainable public spaces that will encourage social interaction and community belonging, are created. Redeveloping the OSI Ghia Factory is a good example of how these principles can be implemented to make the area more livable and facilitate its integration with the local community.

Approach to the Problem

This study employs a mixed-methods approach to tackle the specific economic and social challenges related to the redevelopment of brownfield sites. By integrating both qualitative and quantitative data, the research aims to comprehensively understand the project's impact on economic benefits, social inclusion, and environmental sustainability. Mixed-methods research enables the combination of statistical analysis and contextual insights, providing a robust framework for analyzing complex urban redevelopment processes (Creswell & Plano Clark, 2018; Bryman, 2006)

The main goals

The main reason for visiting the OSI Ghia Factory is to see if the adaptive reuse of the premises can contribute to an increase in the number of business opportunities and, therefore, the generation of financial benefits, which would lead to new income sources for the local economy.

First, we have to come up with ways to identify the neighborhood connection and public participation in the area that can be transformed into a lively and vital community asset. A further important issue is to re-establish the former industrial site to the other urban areas by transforming it into a local and integrated neighborhood. By improving the physical connections, such as accessibility and functional continuity with the surrounding districts, the redevelopment aims to defeat the isolation of brownfield sites. The interaction not only promotes the cohesiveness of the community but also stimulates sustainable urban growth and the long-term vitality of the area.

The main part of the paper includes a thorough analysis of other works and of crucial movements in the redevelopment of brownfields that generate financial viability through the model of adaptive reuse. This comparison will then be used as a model for the OSI Ghia project.

Scope of Study

The study is about the OSI Ghia Factory in the city of Turin and an area nearby, within which it will be carried out. The project will mainly be about the economic and social regeneration at a local level and will focus on the following areas:

Economic Scope: Small- and medium-sized financial aspects that come with adaptive reuse, such as job creation, local business opportunities, and neighborhood investment.

Social Scope: Making a positive change to community effectiveness and social harmony can be assisted through means such as creating an inclusive environment where there is a habit of public use; this is the channel through which the projects contribute to the cultural identity of the community.

Environmental Scope: The research concentrates on the adoption of sustainable practices for the revitalization of the built environment, focusing on viable solutions for adaptive reuse application. Green buildings, renewable energy, waste reduction, material reuse, and the inclusion of green spaces will be the main technologies and approaches.

Significance of Research

The sustainable urban redevelopment through the OSI Ghia Factory strikes a chord with both the environment and the economy. It also promotes neighborhood connectivity and represents an environmental breakthrough which has helped the area to triple green jobs and food shortage to be addressed (Smith & Jones, 2020).

Sustainable Urban Transformation: This research project highlights the OSI Ghia Factory as a perfect model of a brownfield being converted into an eco-friendly urban center. The launch of this green and economically viable initiative is a perfect demonstration of how a former industrial site may be restored and rebuilt into a comfortable, reachable urban space while still respecting environmental norms. Green and blue infrastructure are at the heart of environmentally conscious urban development goals which are correlated with the protection of the natural environment and the city's growth (Campbell, 1996; Beatley, 2000). This example has demonstrated success by bringing local unemployment down to zero, thus showing that economic and environmental benefits are actually feasible.

Economic Revitalization and Job Creation: The OSI Ghia Factory's social and economic benefits gained through new job opportunities have been the driving force behind its reuse. Motivations behind adaptive reuse initiatives certainly include the fact that they generate a large number of new jobs locally, local investment, and economic growth, thus turning abandoned lands into valuable community assets (Bullen & Love, 2011; Roberts, 2000). This example identifies ways in which the depressed urban areas can be revived to lead to economic development and social prosperity.

Social Connectivity and Community Engagement: In addition to changes in the physical and economic areas, the restoration also takes advantage of the human potential by fostering citizen-centered development. The utilization of sociological approaches facilitates public participation and helps to break down barriers of social disconnection, thus improving the livability of the local area (Ellery & Ellery, 2019). Community involvement is vital for redevelopment projects to be inclusive and have a lasting impact.

Impact of the Research

This study has both practical and conceptual value as it now offers city planners and policymakers evidence-based insights on how adaptive reuse could be a tool for boosting urban resilience and economic vitality. The OSI Ghia Factory's rejuvenation is a case of the local environmental and economic objectives being the main focus, such as improving social cohesion (Putnam, 2000), and encouraging the sustainable urban regeneration that is consistent with the inclusive economic growth (Roberts, 2000; Bullen & Love, 2011). Such ventures reveal ways to go about the integration of the environmental sustainability and the economic development for the contribution to safe, more connected, and economically vibrant urban communities (Beatley, 2000; Campbell, 1996).

CHAPTER 2

Historical Background

Historical Background

Urban and Industrial History of Turin

FIGURE 10 – *Map of Italy highlighting the Piedmont Region and the City of Turin*. Note. Map elaborated by the author based on administrative data of Italy.

Located in northwestern Italy, Turin — the urban center of Piedmont and known as the 'Automobile Capital' — carries a rich history spanning from Roman rule to industrialization and the challenges of the post-industrial era. The city was established as a *res publica*, or Roman colony, in the 1st century BCE during the reign of Emperor Augustus and was first named *Julia Augusta Taurinorum*. It was planned in a classical squared grid layout, following the Roman tradition of designing ideal cities. The basic street pattern of the original Roman town — the *decumanus* and the *cardo* — still survives in the city's historical center (Coarelli, 2014; Wallace-Hadrill, 1994).

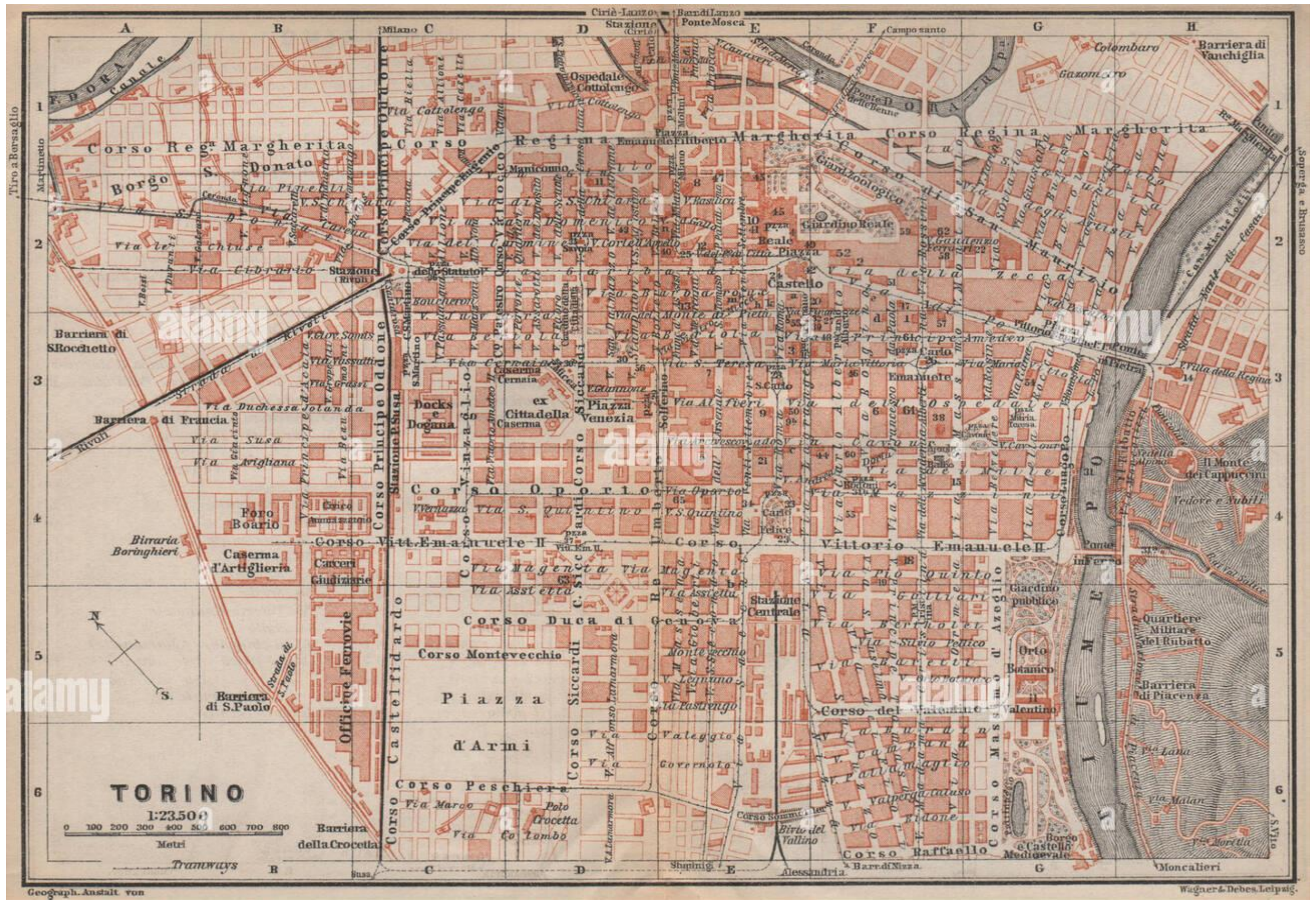
Turin is situated in northwestern Italy and acts as the urban center of Piedmont, which is also known as the 'Automobile Capital'. The city is famous for a history that covers from Roman times through industrialization to the challenging post-industrial era. The city was initially named Julia Augusta Taurinorum when it was founded in the 1st century BCE, during the time of Augustus. It was designed with a classical grid plan that is typical of Roman colonies. The decumanus and cardo, which were the principal street patterns of the Romans, are still visible in the historic center (Coarelli, 2014).

The position of Turin close to the Po River and the Alpine passes made it a major commercial and military crossroads, connecting the southern and central parts of Europe. The Po has always been a natural border and a waterway for the transportation of goods, thus the city has been able to develop and defend itself (Wikipedia, n.d.).

In the time of the Middle Ages and Renaissance, Turin became the capital of the House of Savoy. In the period between the 16th and 18th centuries, particularly under Duke Emmanuel Philibert, it was revolutionized by Baroque urban design, which gave rise to the grand avenues, piazzas, and palaces that characterize its consistent urban identity at present (UNESCO, n.d.).

FIGURE 11 – *Panoramic view of the city of Turin with the Mole Antonelliana at sunset*. Note. Photograph sourced from Barnimages (n.d.), a free stock photo repository.

History shows a turning point in Turin came when it became the first capital of the Italian Kingdom in 1861. Even though the capital was moved to Florence in 1865, the short period of this political prominence during the city's development had a lot of importance. After losing its political status, Turin focused its energy on the Industrial Revolution. The period between the late 19th century and the early 20th century was a period of rapid growth of heavy industry in the city, particularly in the toolmaking and car sectors. The establishment of FIAT (Fabbrica Italiana Automobili Torino) in 1899 was an event that sealed Turin as the center of the Italian industrialization (Encyclopaedia Britannica, 2025; Wikipedia, n.d.).



Map of Turin (Torino), 1899

FIGURE 12 – *Historical map of Turin city center (circa 1899)*. Note. Engraved map sourced from Alamy stock archive (n.d.).

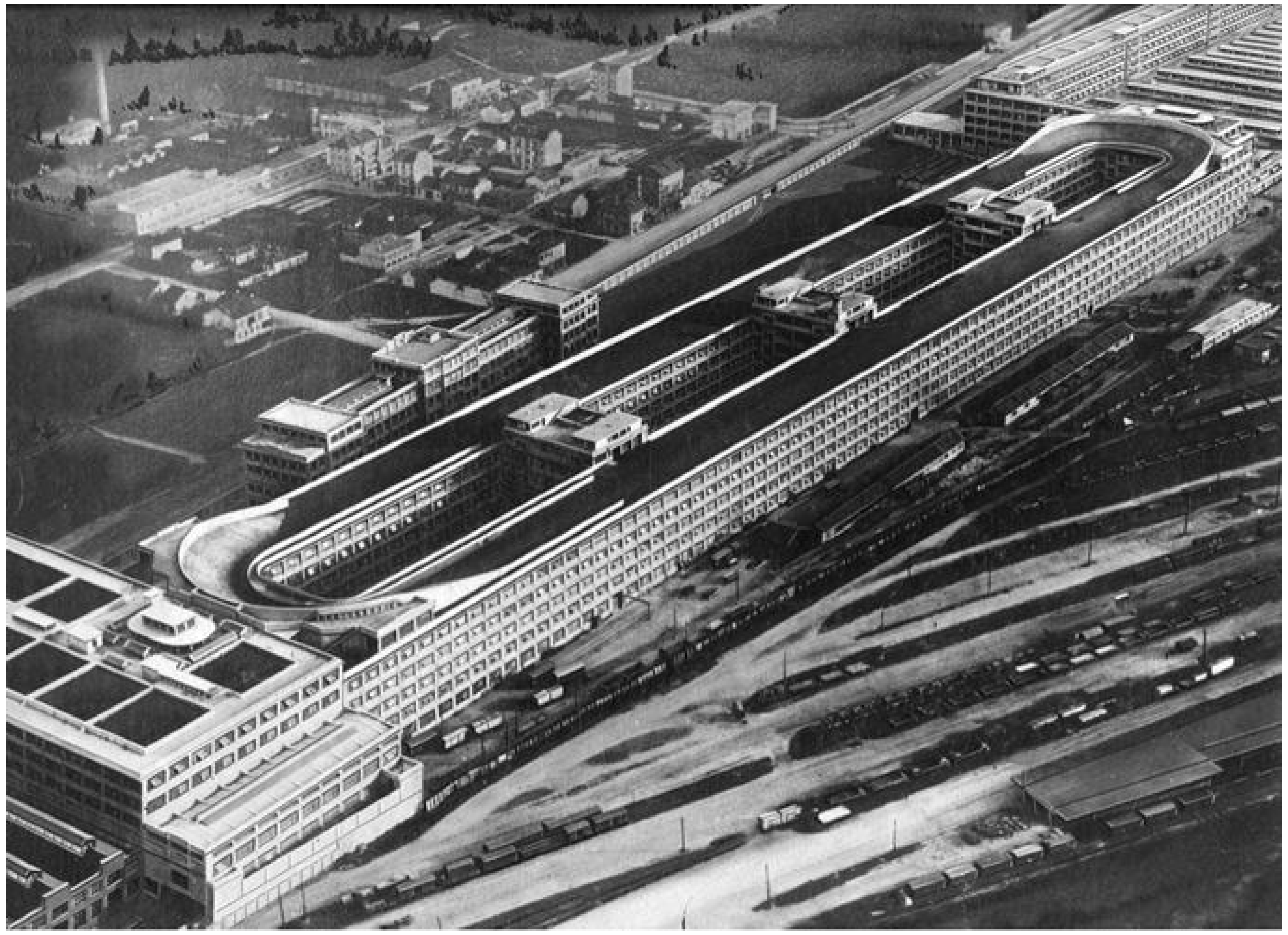


FIGURE 13 – *Aerial view of the Fiat Lingotto factory in Turin with rooftop test track (1966)*. Note. Photograph from the Fiat Historic Centre archive via Wikimedia Commons. The building features the iconic rooftop racetrack used for final vehicle tests (Lingotto building, 1966).

During the Fordist era, Torino was the industrial powerhouse of Italy and was labeled as the “Italian Detroit” several times. FIAT, together with other companies such as Lancia and Iveco, were the source of jobs for tens of thousands of workers, thus giving rise to a demographic boom and mass internal migration, particularly from southern Italy. The rapid industrial development not only created a working class but also radically transformed the city’s southern districts. Areas like Lingotto, San Salvario and Nizza Millefonti were turned into large industrial areas. In these neighborhoods the nature of the city's economy was dominated by manufacturing, with factory life and urban expansion being deeply intertwined (Vanolo, 2015).

Since the 1970s, however, Turin has changed dramatically because of the industrial decline of its city though it was still the same. The crisis in Fordism throughout the world, the boom of automation, and the changing of the economy led to the closure of many factories and the loss of jobs in a very large number. Places that were filled with industry were turned into wastelands and were neglected by the people who lived on the outskirts of the city. Therefore, Turin shifted its focus to a post-industrial development model which was based on cultural revitalization, heritage preservation, and the launching of new economic activities such as education, design, and tourism (Vanolo, 2015).

Presently, aside from its remarkable automobile history, the city enjoys being known for its never-ending cultural creativity, its architectural character (genius loci), and the good standard of living. The transformation from a single-industry economy to a more diverse urban community not only signifies the change of Turin's economic and social fabric but also a new urban strategy in Europe's more extensive post-industrial scenario.

FIGURE 14 - *Panoramic view of the historic center of Turin with the Alps in the background*. Note. Photograph sourced from Alamy stock photo archive (n.d.).

The Case of OSI-Ghia: Industrial Heritage and Decline

The OSI-Ghia industrial complex was an essential part of the economic life in the depression of Turin's southern industrial belt, the area of Via Nizza, Via Canelli, and Via Montefeltro. The site marks the beginnings of industrial Italy in the mid-twentieth century; it also represents its decline and serves as a valuable case to understand the challenges and opportunities for transformation through the adoption of this past century. Its spatial organization and evolution over time are typical of the general story of technological development, urban expansion, economic restructuring, and the reinterpretation of the socio-cultural context. We can learn much about the interaction between production, urban form, and collective memory within the city of Turin by tracing the center's full cycle from construction to present, along with the shared experiences that exist in the city.

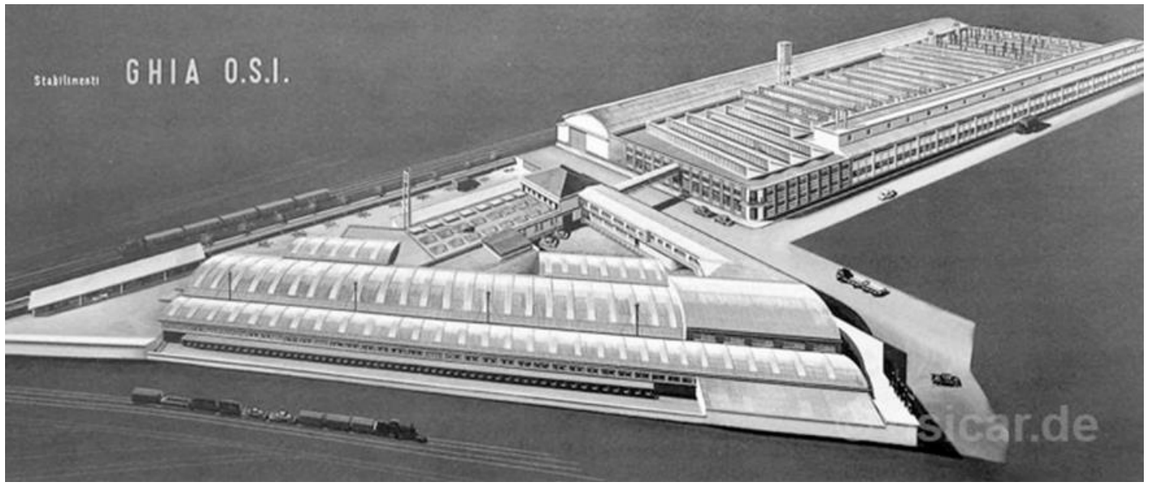


FIGURE 15 – ***Historical illustration of the OSI-Ghia industrial plant in Turin*****. Note. Engraved plan sourced from the Sicar.de archive (n.d.).**

From Fonderia Garrone to Early Modern Industry (1900s-1950s)

The OSI-Ghia location was the Fonderia Garrone's place of business and represented the start of its industrial reputation in the early 1900s, being the source of the mechanical and metallurgical industries in Turin. The foundry was the primary source of money to rail, vehicle, and agricultural manufacturing as the city became the "Detroit of Italy" (CafèBabel Torino, 2018).

The area was enlarged very much from 1908 to 1930, especially by architect Giovanni Antonio Porcheddu, who brought the Hennebique ferroconcrete method to Italy. This technique is still reflected in the industrial rationalism of the strong concrete pillars and the clinker-tile floors of the complex (MuseoTorino, n.d.; Wikipedia on Hennebique system, 2024).

The OSI-Ghia Chapter: Innovation, Identity, and Decline (1958-1968)

In 1958 after Carrozzeria Ghia, a car design company that is well-known, took over the complex the site's purpose and character were changed a lot. In 1960, Ghia merged with the newly created OSI (Officine Stampaggi Industriali), founded by Luigi Segre (the former president of Ghia) and Arrigo Olivetti. OSI was a company that specialized in building limited-run and concept car bodies, thus, it became a specialized entity with the dense automobile innovation ecosystem of Turin that was dominated by FIAT.

Although OSI's input was brief, it was very notable as it worked with car manufacturers Alfa Romeo, Ford, and Innocenti to come up with some of the most impressive models of all time, including the Ford 20M TS Coupé and OSI 1200S Coupé. This period was the best example of post-war years that were full of hope and technological experimenting, known in Italy as the "economic miracle" (Di Martino & Vasta, 2018).

FIGURE 16 – Archival image of the OSI 1200 S coupé, published in an automotive design catalog.

Source: Historic automotive publication, accessed online. No copyright claimed for academic use.

Despite the fact that the company was successful at the beginning, OSI still went through a rough patch financially because of short-term contracts, no vertical integration, and unstable markets. Production stopped in 1968, and the factory changed hands to FIAT's industrial network. Although the factory's activity has lessened, the physical structure, which is recognizable through features such as brick façades, clinker tiles, and modular construction, has remained mostly unchanged, thus retaining the spatial and architectural heritage of Turin's industrial period (Maspoli, 2012).

Architectural Legacy and Urban Fragmentation (1970s-1990s)

Following the abandonment of the OSI, the site has been through very similar situations to what some other former industrial areas have experienced: the buildings were only partly used, the area was illegally occupied and the structures were getting old. However, the facility remained strong as the very big halls and the well-spaced arrangement kept an architectural imprint.

In the 1970s and 1980s, Turin was in a great economic crisis, facing high unemployment and urban falling, which caused the southern industrial belt's disintegration and changed OSI-Ghia into a forgotten but still valuable brownfield site (Bottero, Caprioli & Berta, 2020).

The industrial nature of the location has led to one hand of people who are very committed to its upkeep and on the other hand of the local authorities who are still in doubt if the place is even part of the old industrial infrastructure or it is only a place where the collective industrial memory and the new identity still persist (Mangili, 2021).

From Brownfield to Creative Hub: Adaptive Reuse in the 21st Century

In the initial years of 2000s, the Municipality of Turin took over the OSI-Ghia complex and used it as a part of their grand urban renewal project that was aimed at redirecting the city's economy towards knowledge-based industries after the decline of traditional manufacturing .

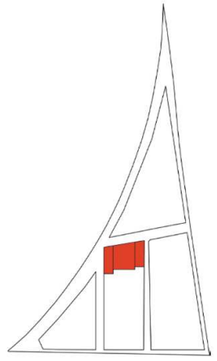
The 2006 Winter Olympics not only brought in a lot of fresh capital but also resulted in the renewal of infrastructure and brought about a change in urban identity. The developments have therefore facilitated the re-appearance of the industrial brownfield .

Mellano Associati came up with the masterplan for mixed-use redevelopment in 2008; but the realization of the project got hampered due to the global economic recession. The turning point in 2009 was the Toolbox Coworking inauguration—a pioneering venture that made the building of OSI-Ghia available as a co-working space for the digital entrepreneurs and creative industries. The project was realized by the famous architect Caterina Tiazzoldi, who adhered to the open floor plan of the old hall and left the base materials visible, adding only the parts necessary for the innovative work intended .

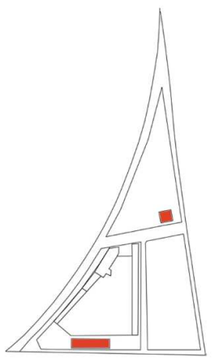
FIGURE 17 – Current view of the Toolbox Coworking and former industrial site in Turin.
Source: Internet image, accessed online. No copyright claimed for academic use.

A Site of Memory and Imagination: Looking Ahead

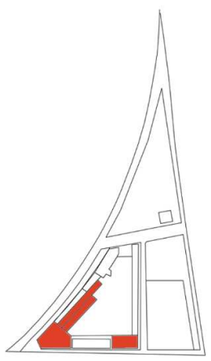
The site of the previous OSI-Ghia factory is still very much a place that represents different phases of history: it was at first, the time of bright aspirations which were the result of the first steps in the process of industrialization; afterwards, it was the period when technical development had a significant role in the era of the car industry; then, it was a time of crisis in the era of deindustrialization; and finally, it was the period of cautious optimism, hoping for some creative urbanism. Due to its location, not only space-wise but also symbolically and strategically, near Lingotto and other urban regeneration corridors, it makes it a key force driving change in the evolving urban landscape of Turin. The OSI-Ghia concept explores new ways of thinking about preservation as it is not only a shield that protects the heritage but it also represents the concept of productive heritage—where history becomes the source of new uses, and the architectural element is the means of transforming. Nowadays, when everything that is expected from things is having resilience and flexibility, this site is the example of the case when the old industrial ruins are not abandoned but are being given a new purpose—they become the infrastructure of the future (Dogan, Cuomo, & Battisti, 2023).



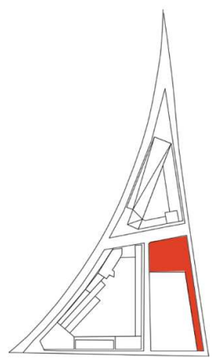
1915 - Expansion of the Garrone Foundry
A low-rise building was added along Bertini Street in 1912. By 1915, rising industrial demand led to the expansion of the foundry, as the existing space had become inadequate.



1931 - New Residential Building on Corso Dante
In 1931, a five-story residential building for the State Railways was constructed, which still retains its original structure today. Additionally, an office building, incorporating an industrial warehouse owned by the Miroglio brothers, was established in the northern section of the site



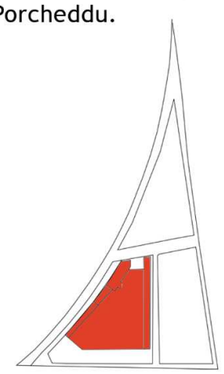
1947 – Construction of the Forges
In 1947, during a transitional period for the industry following World War II and the growth of OSI Ghia's industrial production, the final two expansions of the OSI West area, owned by Anonima Trafilati S.p.A., were completed.



1961 – OSI Building Expansion
After the 1960 merger of Ghia and OSI, the OSI East building between Via Montefeltro and Corso Dante was expanded and renovated to serve as OSI-Ghia's offices and warehouse.

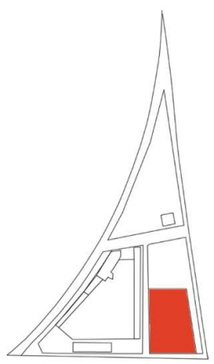
1923 - Major Expansion of the Foundry

As part of the foundry's significant growth, Via Roccabruna was incorporated into the site and consequently closed. This marked the most extensive expansion of the area, led by engineer Porcheddu.



1936 - Formation of Società Anonima Trafilati

In 1936, the former Garrone foundry was renamed Società Anonima Trafilati S.p.A., and a new production facility was established in the eastern part of the OSI site.



1958 – Foundation of Ghia
In 1958, architect Nicola Diulgheroff designed the Ghia industrial complex, featuring a two-story structure with a barrel vault roof. The complex was later expanded with low-rise buildings, covering a wide area.

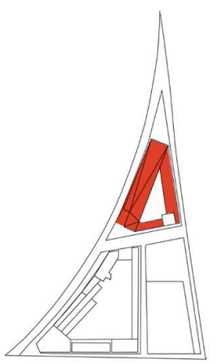


FIGURE 18 – Timeline of OSI-Ghia site development (1915-1961)

Source: Compiled by author based on historical data from Carrozzeria Ghia (German and Italian Wikipedia) and Officine Stampaggi Industriali (French Wikipedia). No copyright claimed for academic use.

CHAPTER 3

Case study Site : OSI-Ghia Ex-Factory

Case Study Site – OSI Ghia Ex-Factory

This chapter explores the spatial and morphological characteristics of the OSI-Ghia site within its urban context. Through a series of analytical steps, it identifies key patterns, constraints, and potentials that will inform future strategies for its sustainable transformation.

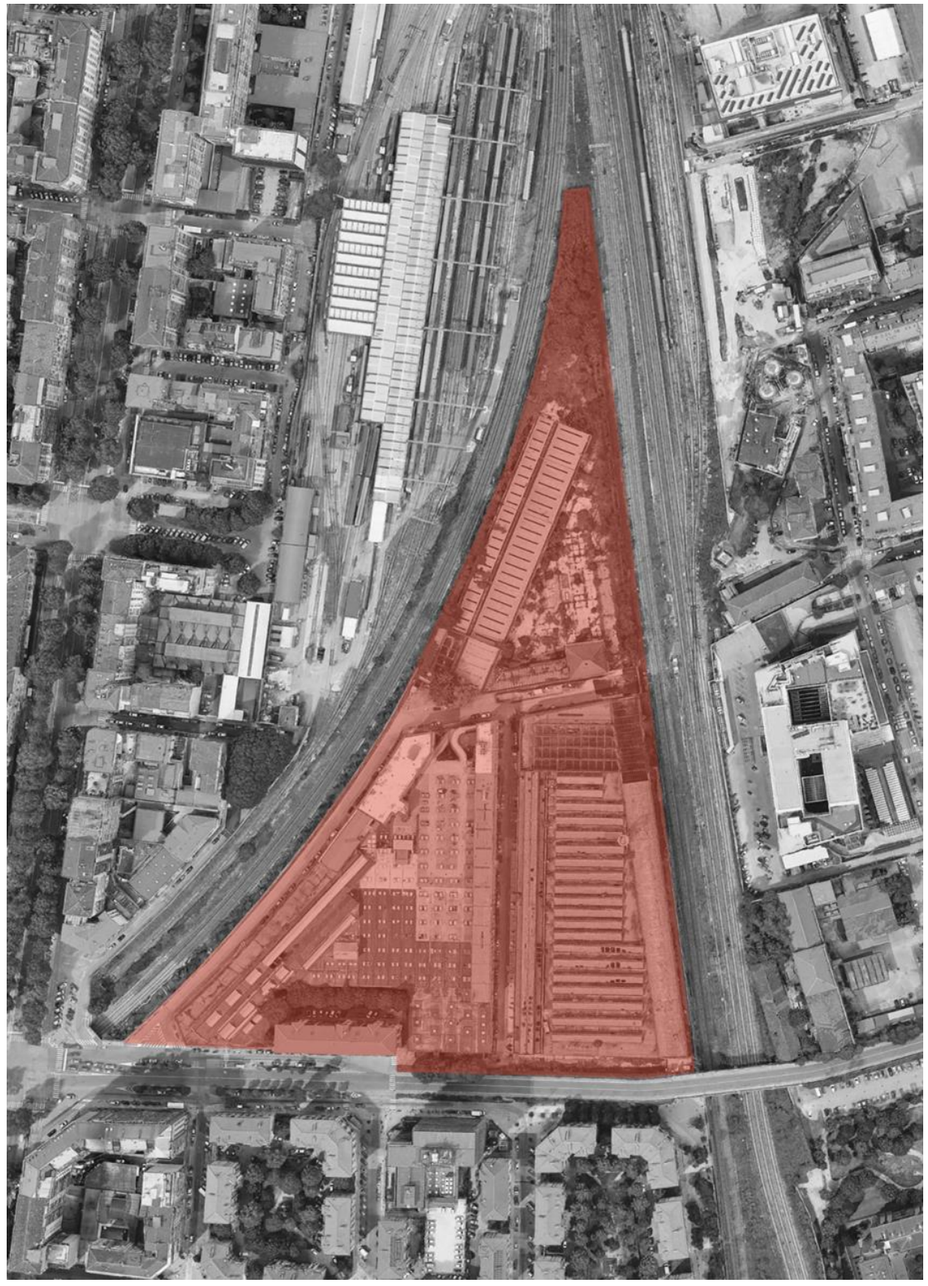


FIGURE 19 – Aerial view of the OSI-Ghia site (highlighted in red) within the urban fabric of southern Turin.
Source: Image edited by author based on Google Maps aerial imagery. No copyright claimed for academic use.

This chapter is dedicated to a deep spatial and contextual examination of the OSI Ghia Ex-Factory, which has been selected as the core study area of this research. The site is located in the southern region of Turin, in the Lingotto district, and is near many landmarks and crucial infrastructural nodes, such as the former FIAT Lingotto complex, the adjacent railway corridor, and several public transit lines. These factors, along with the site's specific industrial typology and spatial configuration, make it an ideal model for studying adaptive reuse strategies in post-industrial urban areas.

Location and Urban Context

The OSI-Ghia site is a prominent piece of Turin's urban fabric, positioned on Via Nizza—a street that was once lined with industrial buildings, which is now in the process of gradual revitalization. The area around the building is like a vast quilt of architectural styles and periods of the industrial age that are still in good condition as well as new residential areas, schools, and commercial functions. Its location offers a great advantage in terms of connectivity, as it is lying on the route between the Lingotto metro station and the metro interchange that is connected to the transit network of the city. This place allows easy access not only to the city center but also to the outer parts of Turin (SMAPROGETTI, n.d.).

Physical Characteristics and Site Layout

The factory complex consists of huge industrial halls, open yards that are connected, and smaller supporting structures. The factory is a perfect example of Italian Rationalism in mid-20th century industrial design, which is a style that emphasizes functional clarity and structural robustness. Although there are some deserted and damaged parts, the place still shows the features of large interior volumes, which are especially clean in the durable roofs and structural frames that are suitable for accommodating a diverse range of businesses, goods, and services (Archistart, 2018).

Environmental and Spatial Potential

Although the OSI Ghia site has been abandoned, it is still highly likely that it will go through a series of massive transformations that will ultimately turn it into a new resource for the city. The site's vast area, industrial-heritage significance, and strategic location—well connected with the surrounding urban fabric—are the main factors that make these changes possible. The redevelopment of the site can be carried out through the implementation of the mixed-use programs, green infrastructure, and activation of the public realm, which not only facilitate social cohesion but also contribute to environmental resilience (Bertolini, Le Clercq, & Kapoen, 2005).

This chapter, by providing the spatial and contextual characteristics of the site, sketches out a comprehensive design trajectory to uncover the new character of the OSI Ghia factory in Turin's cityscape (Bertolini et al., 2005).

Urban Scale Building Typology Analysis

To begin with, in order to grasp the urban activities taking place near the OSI-Ghia ex-factory, a vast survey has been carried out covering various parts of the city, mapping and classifying the building typologies. This study aims to relate the site's redevelopment process to the urban fabric of Turin and the evolving patterns of land use in the area.

Most of the time residential, commercial and other uses that are mixed in non-specialized and non-coded urban blocks are called "generic". The main type of "generic" represents the historical centre as well as the transitional zones going to the industrial outskirts. This typology is the most representative of the density and functional hybridity of Turin's urban morphology. Industrial sheds (capannoni) in dark green color are scattered mostly west and southwest of the city which is in accordance with the historical industrial axis and railway infrastructure. This spatial clustering supports the identification of former production zones, now often subject to adaptive reuse or redevelopment initiatives. In addition to these, the specialized building types comprising churches (orange), bell towers (cyan), villas (yellow), and terraced housing (light lilac) are scattered across the region but typically tend to concentrate in areas of low building density and residential. The presence of rural structures further south indicates residual agricultural land use or previously unregulated development zones. With an urban-scale view we can now see the OSI-Ghia site as a point not only of an industrial past but also of a complex system of historical building types and shifting urban priorities.

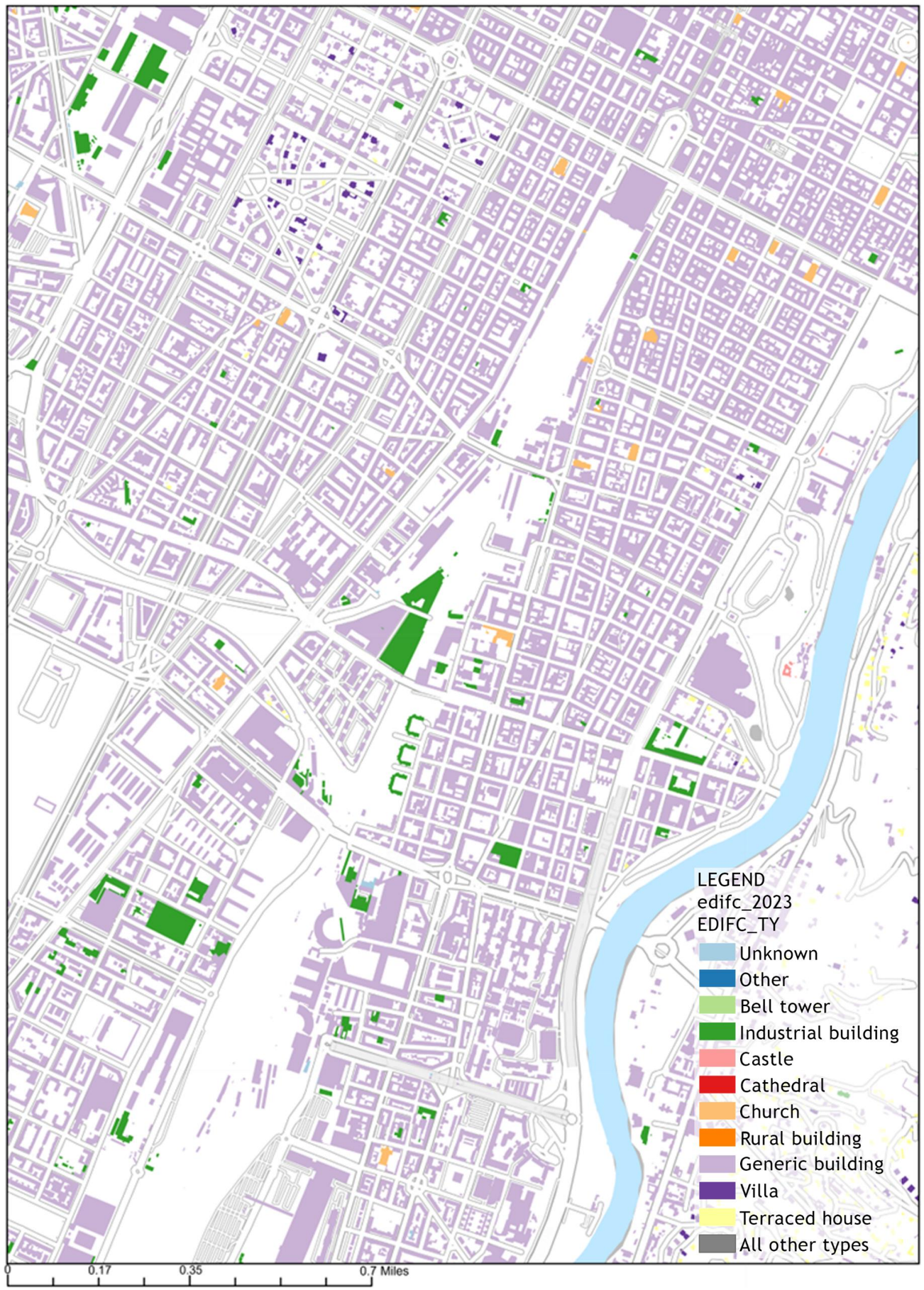


FIGURE 20 - Land use typology and building classification in central Turin.

Source: Generated by author in QGIS using the edifc_2023 layer from the BDTRE dataset. Data retrieved from Geoportale Piemonte. No copyright claimed for academic use.

Urban Green Infrastructure Analysis

Knowledge of the spatial distribution of urban green infrastructure is necessary for measuring environmental quality, urban resilience, and available open spaces. The metropolitan-scale map shows that green areas make up most of the central and southern parts of Turin. Green zones are heavily concentrated along the Po River, particularly in the east, where big parks like Parco del Valentino are most visible. These green belts provide the local communities with the ecosystem services they need—flood mitigation, biodiversity corridors, and urban cooling—besides additionally functioning as recreational and cultural services. In comparison, southwestern and western areas now have grasslands and tree clusters that are located along the old industrial corridors and railways, which are the places where the changes towards post-industrial green reclamation have occurred. On the other hand, the dense historical core of the city does not have any big green spaces, it is just small gardens that are located inside the residential blocks, this clearly shows the empty spaces and the necessity of targeted greening. In general, this mapping serves as a base for further studies about the OSI-Ghia ex-factory's ecology, walkability, and green accessibility in its local urban context.

FIGURE 21 – General green space coverage across central Turin.

Source: Generated by author in QGIS using the ar_vrd_2023 layer from the BDTRE dataset. Data retrieved from Geoportale Piemonte. No copyright claimed for academic use.

Figure-Ground Morphology Analysis

Knowledge of the spatial distribution of urban green infrastructure is necessary for measuring environmental quality, urban resilience, and available open spaces. The metropolitan-scale map shows that green areas make up most of the central and southern parts of Turin. Green zones are heavily concentrated along the Po River, particularly in the east, where big parks like Parco del Valentino are most visible. These green belts provide the local communities with the ecosystem services they need—flood mitigation, biodiversity corridors, and urban cooling—besides additionally functioning as recreational and cultural services. In comparison, southwestern and western areas now have grasslands and tree clusters that are located along the old industrial corridors and railways, which are the places where the changes towards post-industrial green reclamation have occurred. On the other hand, the dense historical core of the city does not have any big green spaces, it is just small gardens that are located inside the residential blocks, this clearly shows the empty spaces and the necessity of targeted greening. In general, this mapping serves as a base for further studies about the OSI-Ghia ex-factory's ecology, walkability, and green accessibility in its local urban context.

FIGURE 22 - Built-up area map of central and southern Turin (2023).

Source: Map produced by author using the EDIFC_2023 layer from the BDTRE dataset (Geoportale Piemonte, 2023), visualized in QGIS. No copyright claimed for academic use.

Urban Circulation Network Analysis

This map depicts the typological distribution of urban circulation networks covering a large part of Turin, allowing us to survey the city's accessibility, movement hierarchy, and multimodal infrastructure. The color-coded routes illustrate the types of roads from main streets to pedestrian corridors, making it easy to distinguish different urban mobility systems.

The dominance of main road segments (tronco carreggiata), in dark purple, indicates the historically structured street grid, especially in central and northern sectors. These routes represent high vehicular flow connecting key urban corridors and forming the basic mobility framework.

Walking routes, in bright pink, represent a more dispersed network but are strategically located around major nodes—particularly near riverbanks, green areas, and high-density residential zones. Their presence marks walkable areas inside the car-dominated network, aligned with public realm development focused on non-motorized movement.

Ramps and interchanges, especially at bridge crossings and peripheral nodes, are seen as the top layer in the city’s transportation system. Internal service lanes, mainly in industrial or mixed-use districts (in area di pertinenza), show how circulation varies with land use. These paths often support localized access, loading, and off-street connectivity—essential for assessing urban permeability.

This macro-level study situates the OSI-Ghia site within a broader urban circulation logic, outlining primary access routes, multimodal potential, and infrastructural integration, and supporting further research on pedestrian movement, vehicle hierarchy, and soft mobility’s role in regeneration.

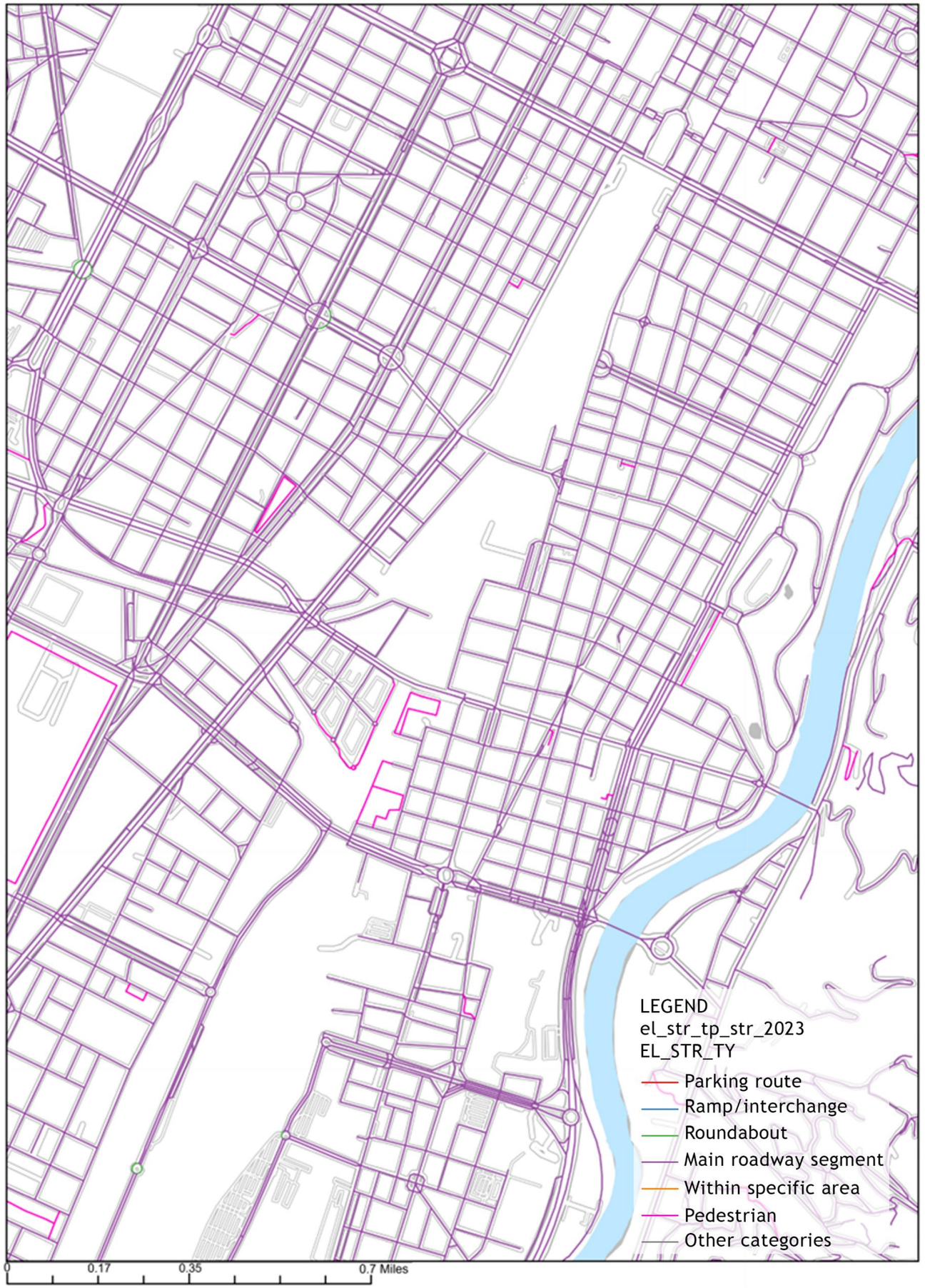
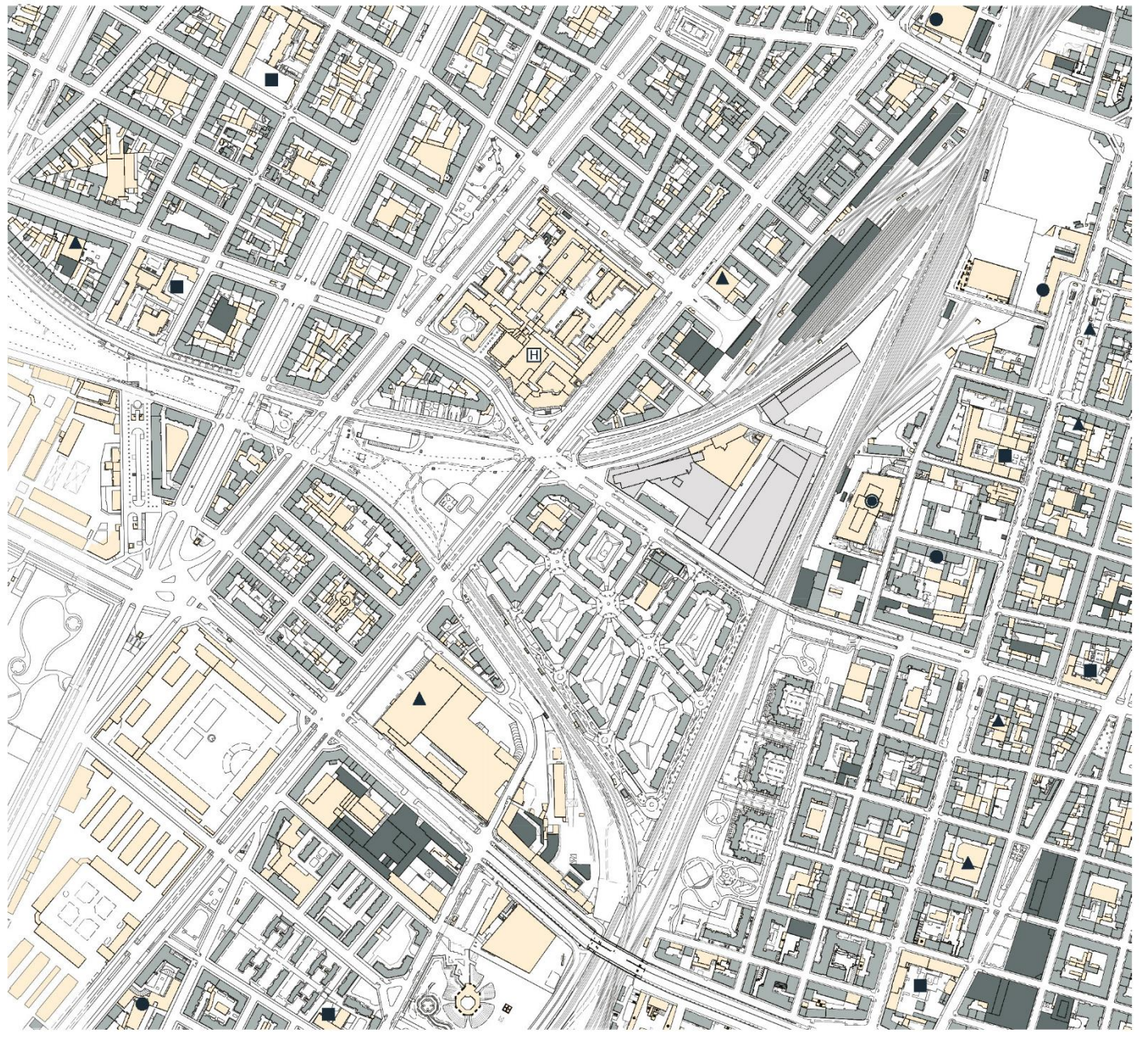


FIGURE 23 – Road network classification map of central Turin.

Source: Generated by author in QGIS using the el_str_tp_str_2023 layer from the BDTRE dataset. Data retrieved from Geoportale Piemonte. No copyright claimed for academic use.

Micro-Scale Land Use Analysis

This map shows land use patterns in the vicinity of the OSI Ghia site which present the site's functional makeup and its regeneration prospects. The area is predominantly residential, which implies a cohesive urban environment that is community-oriented and supports mixed-use opportunities. But, no dominant functional core appears to exist indicating that the OSI Ghia zone could be the possible location of the new urban center. Public services such as schools, cultural institutions, hospitals, and markets still exist although they are scattered to a considerable degree thus they would have to be better integrated to meet the needs of future development. The continuity of the urban landscape is interrupted by the presence of abandoned or monofunctional industrial buildings on and near the site thus spatial permeability is reduced. The rejuvenation of OSI Ghia, via mixed-use development, the ground level activation improvement, and the public services expansion, may not only alter the area's character but also enable the new civic and functional center for that part of Turin to be established.



Source: Geoportale, Comune di Torino

FIGURE 24 – Urban land use classification in the OSI-Ghia district, Turin.

Source: Extracted from the thesis "Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-Ghia Industrial Site" by Lousineh Khachatourian Saradehi and Arin Khachatourian Saradehi, Politecnico di Torino, Academic Year 2021/2022. Originally elaborated using cartographic layers from Geoportale, Comune di Torino. Reproduced for academic reference. No copyright claimed.

Micro-Scale Green System Analysis

An analysis of the green infrastructure surrounding the OSI Ghia site reveals a fragmented and discontinuous network of open spaces. Though there are a range of green spaces, such as public, private, and sports areas, their disconnection limits the nature and social networks. The northern and eastern boundaries of the site are particularly under-served if green zones are ones that can either be inaccessible or underused. The map also indicates the protected heritage and landscape features, thereby providing the potential for linking linear parks and green buffers not only to improve continuity but to also eliminate the visual noise and cool the environment by regeneration. Upgrading this system is crucial for the environmental health and urban resilience.

Source : Geoportale, Comune di Torino

FIGURE 25 – Green infrastructure and protected assets in the OSI-Ghia district, Turin.

Source: Extracted from the thesis "Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-Ghia Industrial Site" by Lousineh Khachatourian Saradehi and Arin Khachatourian Saradehi, Politecnico di Torino, Academic Year 2021/2022. Originally elaborated using cartographic layers from Geoportale, Comune di Torino. Reproduced for academic reference. No copyright claimed.

Micro-Scale Urban Morphology: Fill and Void Analysis

The Fill and Void study of the OSI Ghia district shows a patchy urban pattern, with the western and southern boundaries displaying residential blocks that are dense and well-organized, however, the location itself is still fragmented and irregular. Huge spaces that are unused—mainly because of railway tracks and industrial lands that are no longer in use—have negative influence on the scenery and space; they also restrict the accessibility and disrupt the continuity with the neighboring areas. Furthermore, the lack of clear urban edges and the absence of multiple layers of structures also contribute to this effect as they make the place even more isolated from nearby areas that have mixed use. Besides, the high number of big buildings with only one function that are being dominant is a reason for permeability and human-scale interaction to become very limited. Nevertheless, the location still has a considerable capacity for restoration. Targeted infill, vertical mixed-use, and better connection through walkable infrastructure are some of the potentials that can make OSI Ghia a vibrant place. The aspect of porosity, diverse functions, and the continuation of the area are pivotal for re-balancing the space and enabling sustainable urban vitality to be maintained.

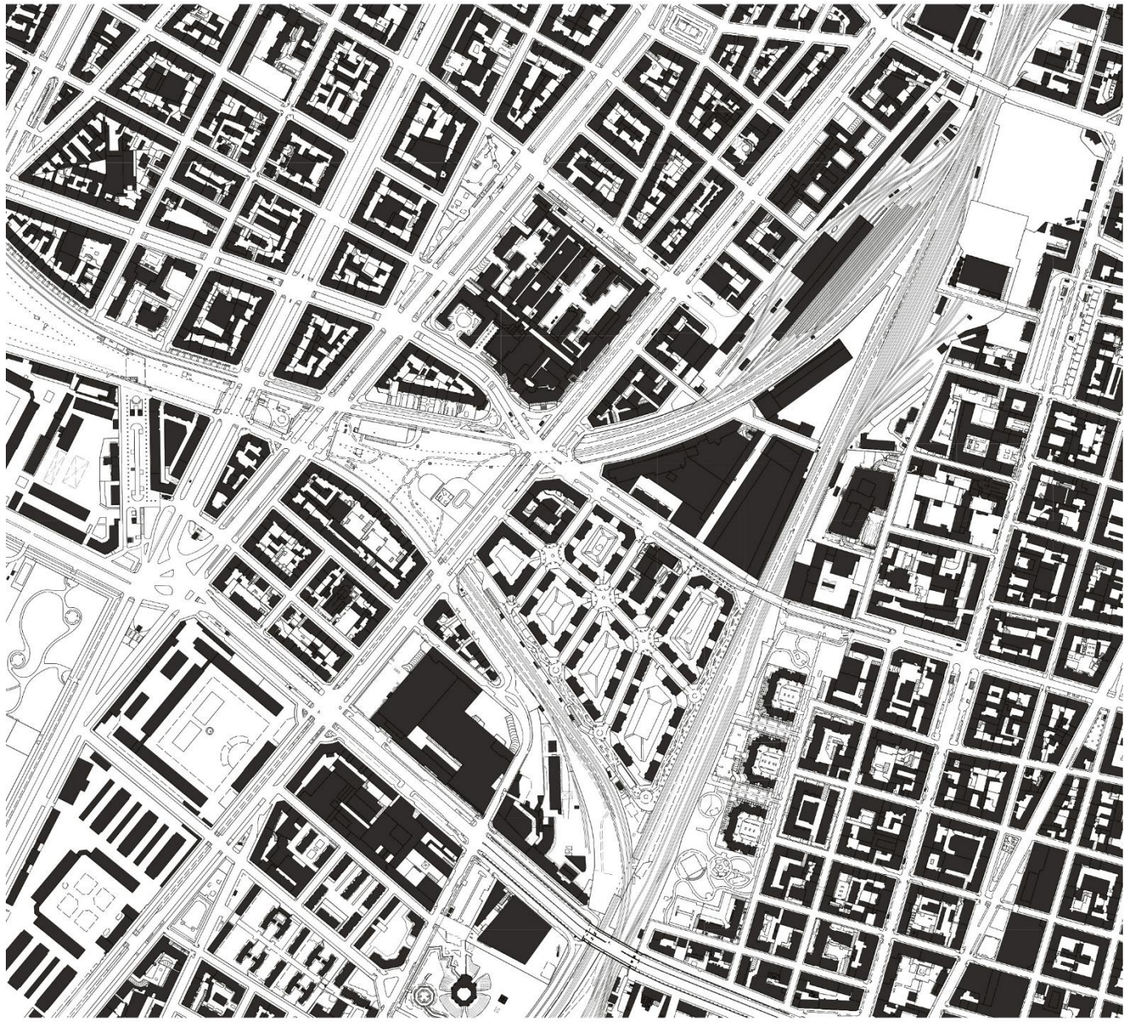


FIGURE 26 – Fill and Void analysis of the OSI-Ghia district, Turin.

Source: Extracted from the thesis "Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-Ghia Industrial Site" by Lousineh Khachatourian Saradehi and Arin Khachatourian Saradehi, Politecnico di Torino, Academic Year 2021/2022. Originally elaborated using cartographic layers from Geoportale, Comune di Torino. Reproduced for academic reference. No copyright claimed.

Micro-Scale Accessibility Network Analysis

The OSI-Ghia project explores a transport-rich location with a multimodal network, thus being the perfect place for sustainable redevelopment and urban integration. It is supported by a local road grid that is well connected, metro stations at Corso Turati and Corso Dante which are active, and also bike lanes that help to make the whole city more accessible. The new underground and train stations planned at the East end of the city also indicate that the connectivity in the area will be improved. However, the implementation of the bike lanes within the site has not yet been completed and it should be improved—together with the addition of the e-bike docks, and the EV charging stations—so that it can be in line with sustainability goals. The central railway is still a major barrier dividing the site, and thus, the only way to overcome the fragmentation is to apply the design strategies, which are needed to bring about spatial cohesion and functional regeneration.

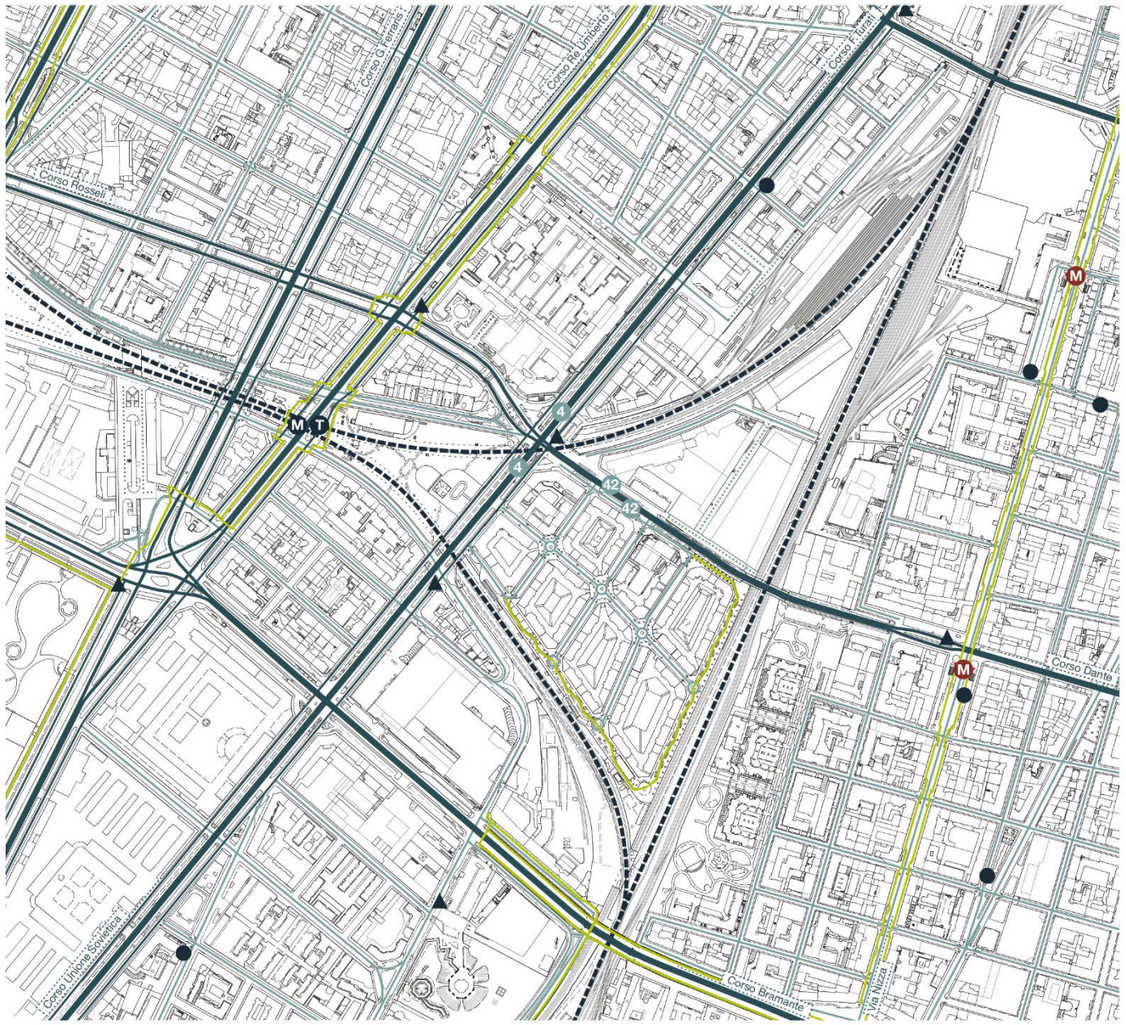


FIGURE 26 – Mobility infrastructure and connectivity elements in the OSI-Ghia district, Turin.

Source: Extracted from the thesis "Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-Ghia Industrial Site" by Lousineh Khachatourian Saradehi and Arin Khachatourian Saradehi, Politecnico di Torino, Academic Year 2021/2022. Originally elaborated using cartographic layers from Geoportale, Comune di Torino. Reproduced for academic reference. No copyright claimed.

Existing Condition – OSI Ghia Site

In this section, the floor plans of the existing buildings within the project area are presented in detail to provide a clearer understanding of the volumes, spatial capacities, and interior spaces, aiming to reveal the full potential of the current condition.

The drawings and plans have been compiled or reproduced based on archival data and on-site observations.

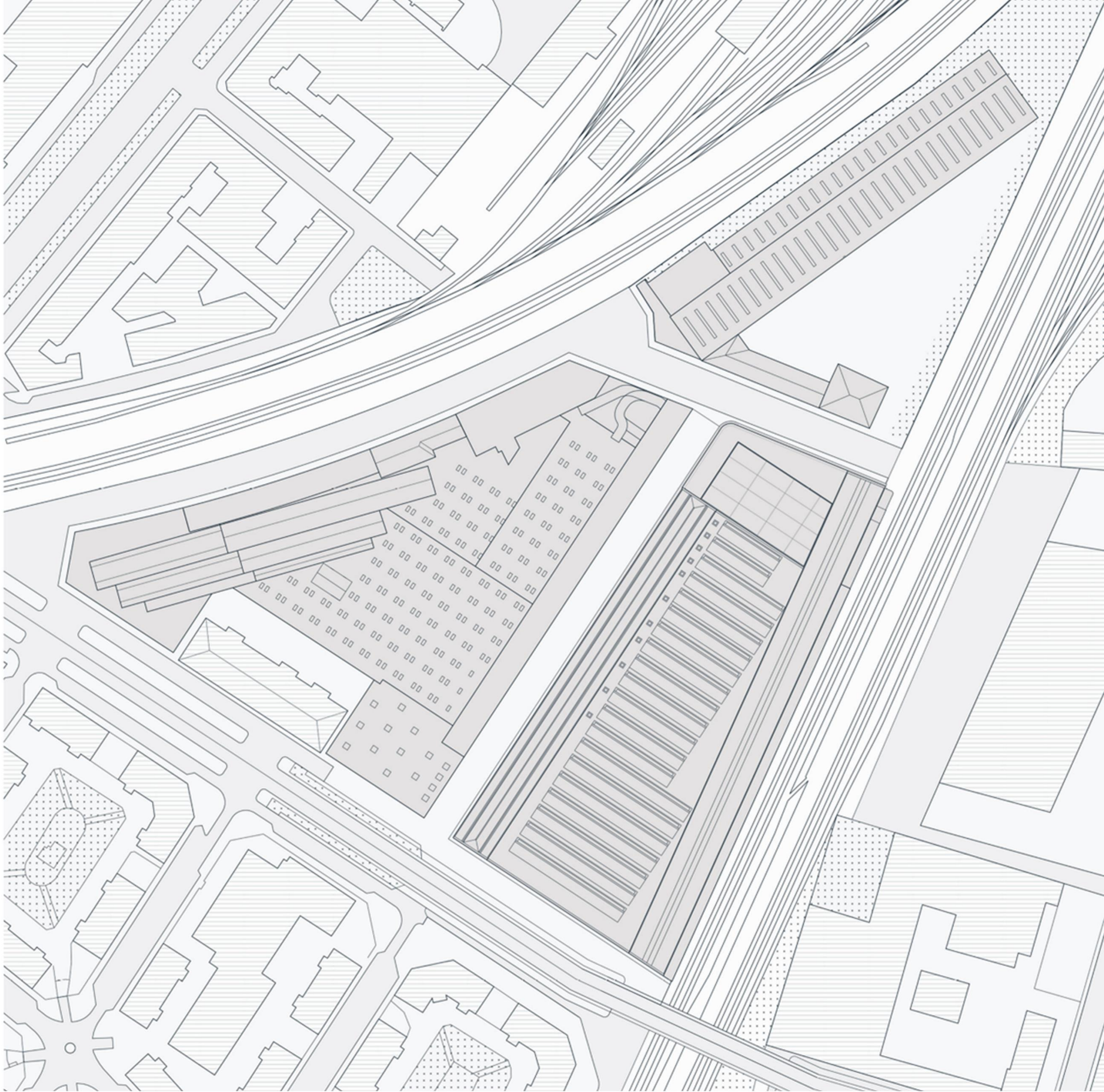


Figure 29: Roof Plan, Existing Situation
Source: Adapted from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino, p. 154.
Original data credited in the thesis to: Historical Archive of the City of Turin: PE1920_0195, PE1923_0747, PE1920_0233, PE1915_0397, PE1919_0098, PE1923_0707, PE1936_1_10179, PE1978_01_10563, PE1987_01_01079, PE1989_01_04033, PE1991_0097, PE1996_0084, PE1998_0008. Porcheddu Archive: Pratica n°5990, 5989, 5988, 5869, 5937.

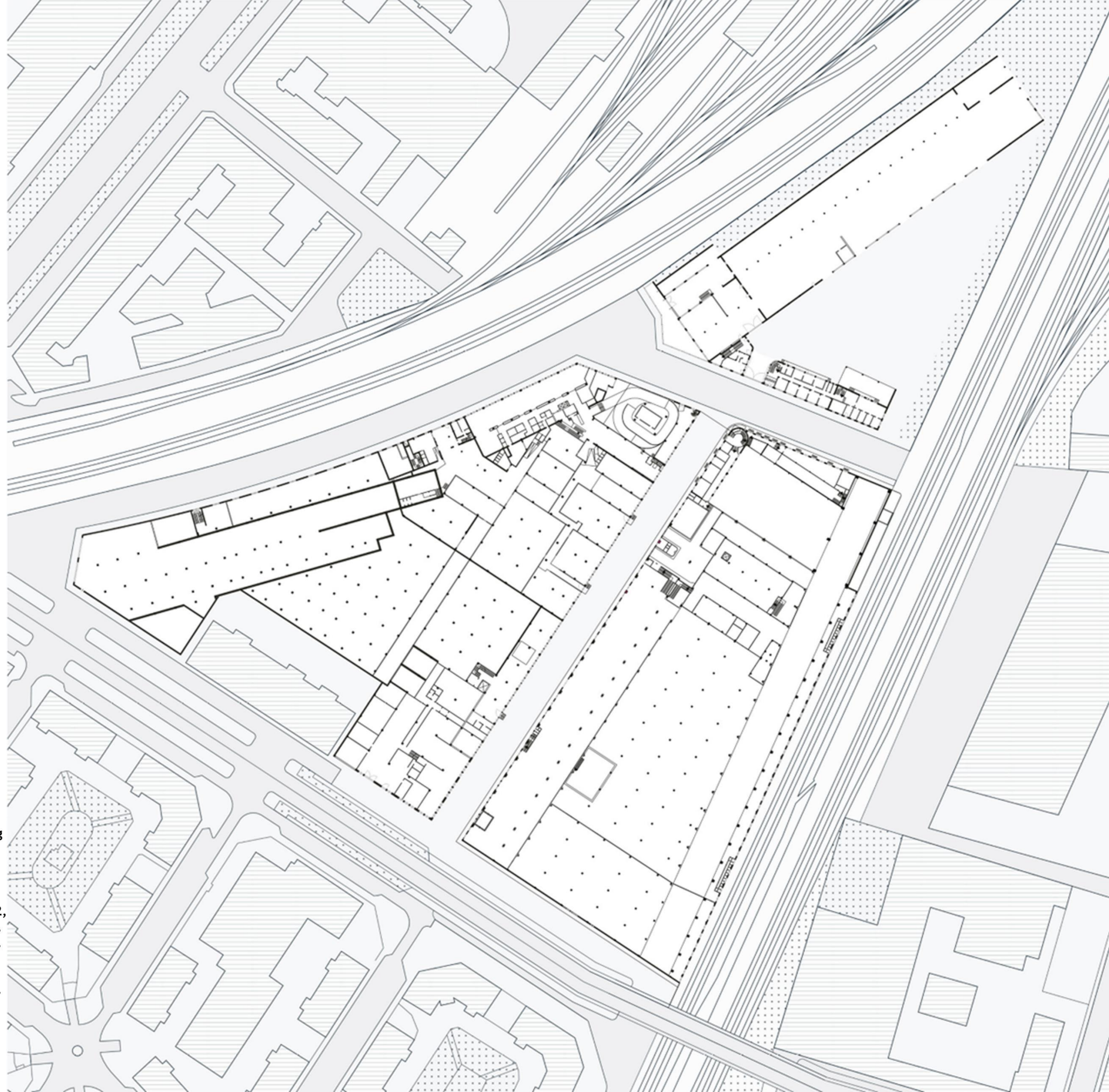


Figure 30: Ground Floor Plan, Existing Situation
Source: Adapted from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino, p. 157.
Original data credited in the thesis to:
Historical Archive of the City of Turin: PE1920_0195 TAV_01, PE1920_0195 TAV_02, PE1920_0195, PE1923_0747, PE1920_0233, PE1915_0397, PE1919_0098, PE1923_0707, PE1947_1_110017, PE1978_01_10663, PE1978_01_0097, PE1989_01_04033, PE1915_0397, PE1998_0008, PE1923_0707, PE1936_1_10179.
Porcheddu Archive: Pratica n°5990, 5989, 5988, 5869, 5937, 5989, 5988, 5869, 5937.

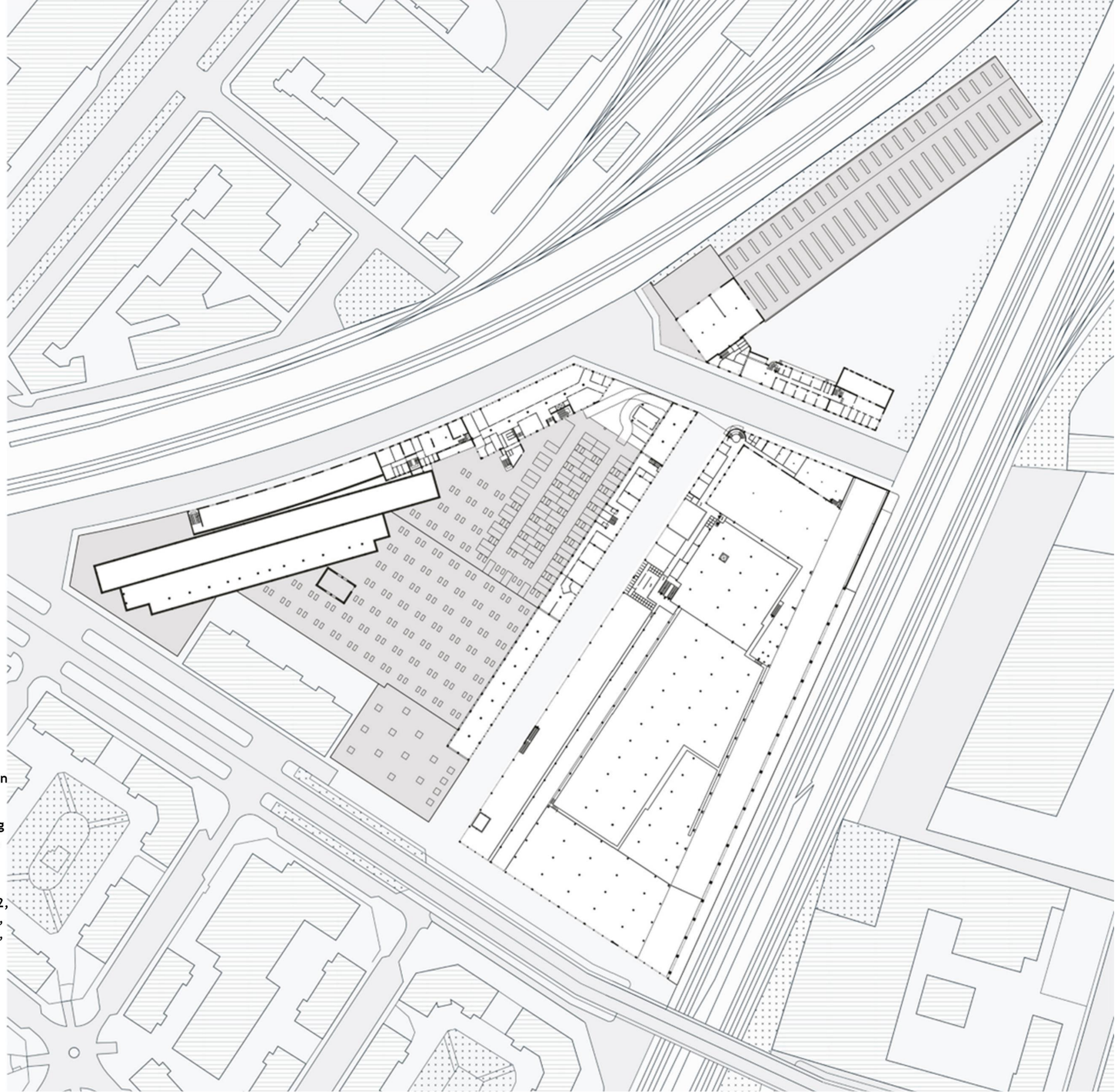


Figure 31: First Floor Plan, Existing Situation
Source: Adapted from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino, p. 156.
Original data credited in the thesis to:
Historical Archive of the City of Turin: PE1920_0195 TAV_01, PE1920_0195 TAV_02, PE1920_0195, PE1923_0747, PE1920_0233, PE1915_0397, PE1919_0098, PE1923_0707, PE1947_1_110017, PE1978_01_10663, PE1978_01_0097, PE1989_01_04033, PE1915_0397, PE1923_0707, PE1936_1_10179.
Porcheddu Archive: Pratica n°5990, 5989, 5988, 5869, 5937.

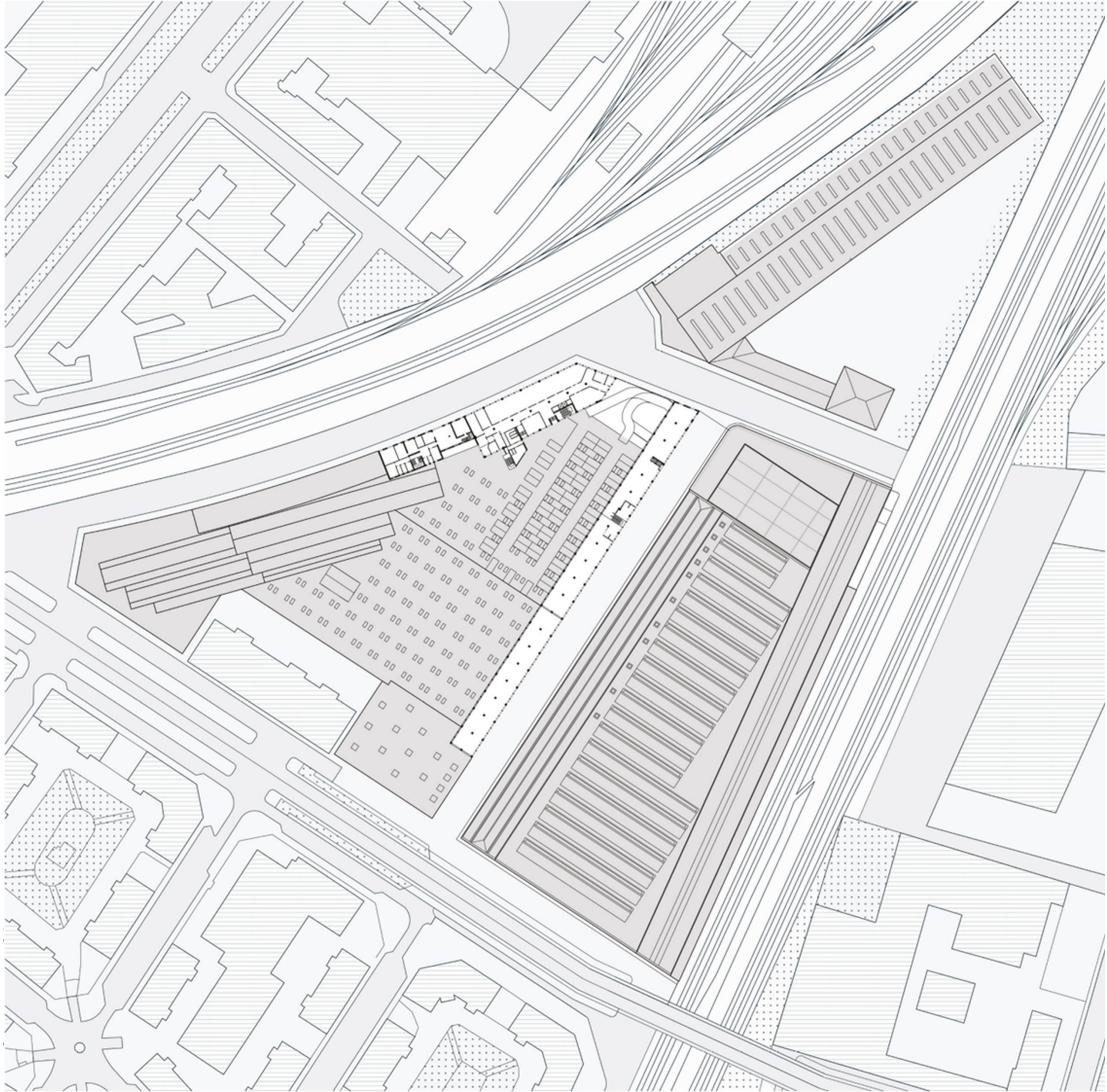
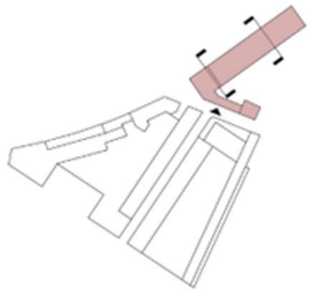
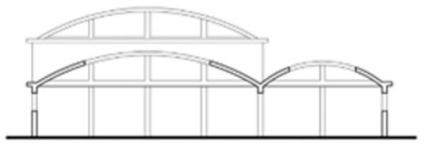
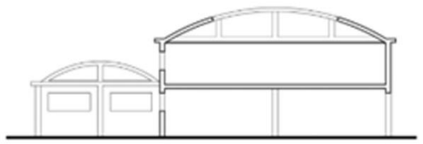


Figure 32: Second Floor Plan, Existing Situation
Source: Adapted from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino, p. 155.
Original data credited in the thesis to:
Historical Archive of the City of Turin: PE1920_0195 TAV_01, PE1920_0195 TAV_02, PE1920_0195, PE1923_0747, PE1920_0233, PE1915_0397, PE1919_0098, PE1923_0707, PE1947_1_110017, PE1978_01_10663, PE1978_01_0097, PE1989_01_04033, PE1915_0397, PE1919_0098, PE1923_0707, PE1936_1_10179.
Porcheddu Archive: Pratica n°5990, 5989, 5988, 5869, 5937.

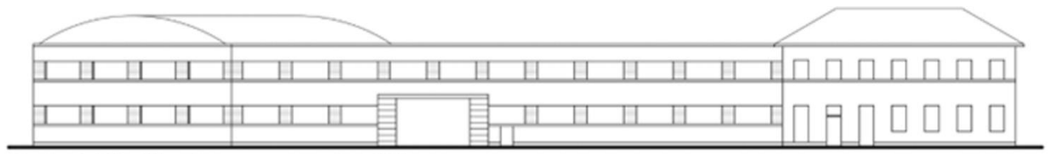
Figure 33: Interior View and Technical Drawings of the GHIA Hangar
Source: Reproduced from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Drawings based on archive documentation: Building Archive of the City of Turin: PE1958_1_10493.







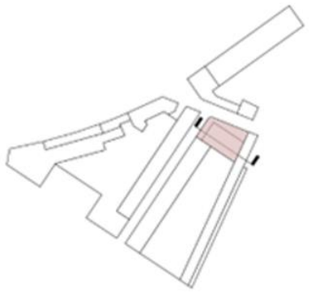
Sections scale 1:500



Via Montefeltro Elevation scale 1:500

Figure 34: Actual Condition of the Southern Edge of GHIA Industrial Site
Source: Reproduced from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Original image credited in the thesis to: Karaca, M., Merve, K. (2021); Iannetti, D., Morini, S. (2019).

Figure 35: Existing Section of the OSI Building Area
Source: Adapted from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Original technical drawing based on: Building Archive of the City of Turin, PE1961_1_60017.



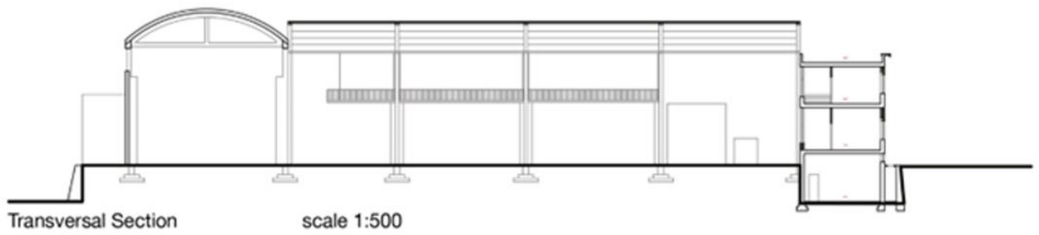


Figure 36: Interior and Exterior Views of the OSI-East Area
Source: Combination of images reproduced from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Interior images originally credited in the thesis to: Karaca, M., Merve, K. (2021); Iannetti, D., Morini, S. (2019).
Exterior photographs documented by the thesis authors.

Figure 37: Exterior and Interior Views of the OSI-East Area
Source: Reproduced from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Exterior images documented by the thesis authors.
Interior images originally credited in the thesis to: Iannetti, D., Morini, S. (2019).

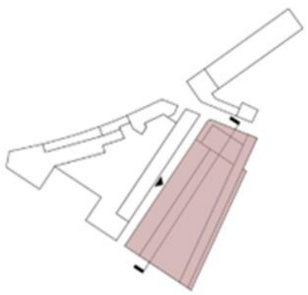
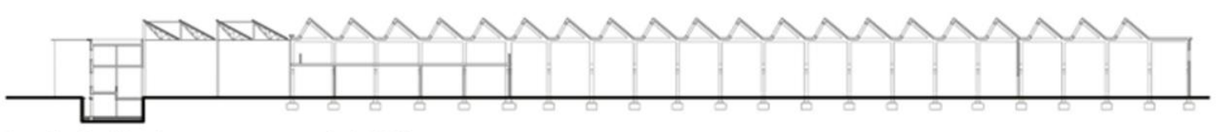
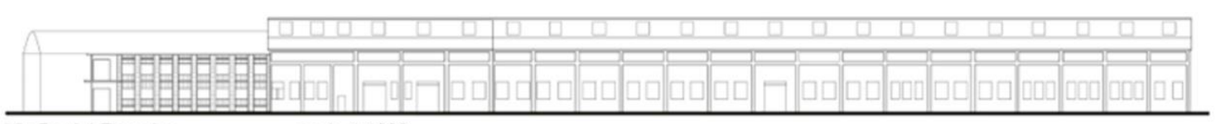


Figure 38: Existing Sections and Elevation Drawings of the OSI Area
Source: Reproduced from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Based on documentation from:
Historical Archive of the City of Turin: 1936_1_10179
Building Archive of the City of Turin: 1961_1_60017, 1980_01_10596, 1936_1_10179.



Longitudinal Section scale 1:1000



Via Bertini Elevation scale 1:1000

Figure 39: Existing Condition of the OSI-West Area
Source: Photographs taken and documented by the authors of Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.

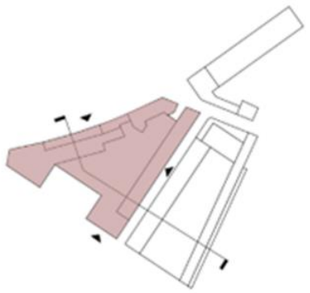
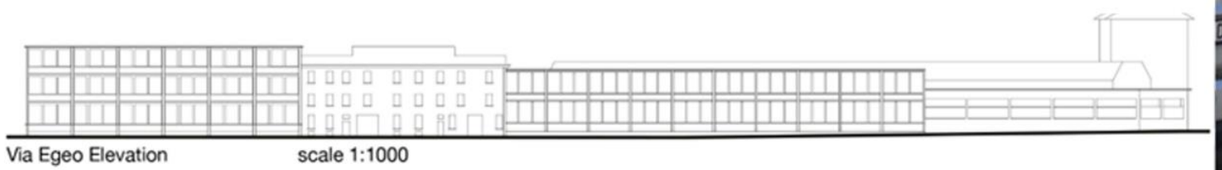
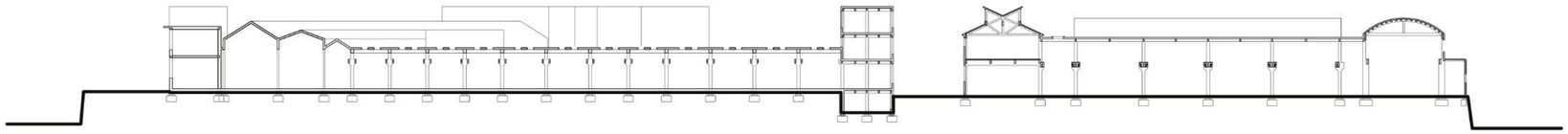
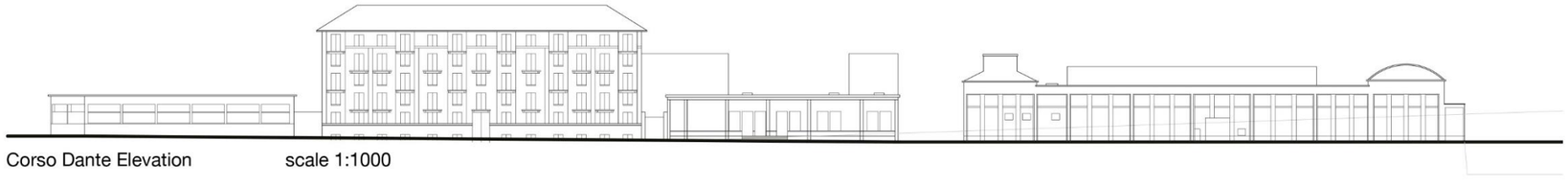


Figure 40: Historical Sections and Elevations of the OSI Area
Source: Reproduced from Khachatourian, L. & Khachatourian, A. (2022). Nature-Based Solutions for Urban Adaptivity: Regenerating Former OSI-GHIA Industrial Site, MSc Thesis, Politecnico di Torino.
Based on documentation from the Historical Archive of the City of Turin: PE1915_0397, PE1919_0098, PE1923_0707, PE1947_1_110017, PE1978_01_10563, PE1987_01_01079, PE1989_01_04033, PE1920_0233.





Section scale 1:1000



Corso Dante Elevation scale 1:1000

S

Great Access Location: Being close to the Lingotto metro station, main urban roads, and public transit corridors creates a strong link to the site and enhances mobility.

Great Industrial Heritage: The architectural and historical heritage of the OSI Ghia buildings forms a strong cultural and morphological basis upon which adaptive reuse can take place.

Diversity of Existing Building Volumes: The broad, open industrial halls accommodate interior spaces that are not only multifunctional but also modular and easily adaptable for redevelopment.

Qualitative Urban Potential: The site is in close proximity to densely populated areas where increased mixed-use development can take place, benefiting local residents.

W

Fragmented Urban Fabric: The formation of disparities in the existing built and non-built environment creates spatial and visual incoherence that becomes difficult to understand.

Mono-functional Typology: The prevalence of single-use, obsolete industrial buildings not only hinders social interactions but also seriously limits the movement of people and airflow.

Limited Green Infrastructure: A small number of widely spread and disconnected green areas not only fail to provide ecological or recreational continuity but also do not serve aesthetic or local sky visibility purposes.

Divisive Rail Infrastructure: The railway corridor, both from a physical and perceptual point of view, divides the location, thus interrupting overall connectivity.

O

Adaptive Reuse Potential: The factory's good condition, especially its central location, makes it ideal for a cultural, commercial, or residential mixed-use conversion.

Green Connectivity: A possibility to create green pathways, buffer zones, and public spaces that will blend with and further the ecological layout.

Urban Densification: The possibility of transforming vacant and underused land into a multifunctional and inclusive urban environment, with human-scaled public spaces that foster community interaction and spatial continuity.

Community Hub Creation: Ability to develop a functional core that interconnects the currently isolated services and strengthens neighborhood identity.

Smart Infrastructure: Utilization of renewable energy systems, green transportation (bicycle lanes, e-charging), and smart, energy-efficient technologies.

T

Risk of Gentrification: Without planning for access for all citizens, new development can push out the indigenous population and change the social profile.

Planning Fragmentation: Involvement of various stakeholders and the absence of a single governmental body can prolong the implementation process and give rise to inconsistent results.

Structural Deterioration: Existing constructions may require a complete facelift due to long-term wear that has gone unnoticed.

Economic Uncertainty: Investor hesitancy may arise from concerns about market instability or perceived project risks.

Environmental Contamination: Possibility of soil pollution or the presence of industrial waste posing health hazards.

CHAPTER 4

Reimagining OSI Ghia : Design Proposals

Reimagining OSI Ghia: Design Proposals

The reuse of the OSI Ghia Factory in the project of urban reactivation is the main project that focuses on architectural transformation as well as being a project that understanding of the site's historical journey, spatial challenges, and regeneration potential rooted in the community and now the site being reactivated in the urban context. The earlier chapters had already demonstrated how the factory serves as a point of convergence between Turin's industrial heritage and the city's current needs in the urban sector. Its location, which is very favorable, considerable morphological footprint, and underutilized condition make it an ideal place for a comprehensive rejuvenation.

The design techniques that are outlined in this chapter are the means which were set out to be the ways in which the main objectives of the study that was conducted on the site and the urban context can be attained such as making it safer, creating better connections with the adjacent areas, practicing environmental sustainability, and generating economic opportunities with jobs.

The objective of the safety promotion is definitely not narrow in scope since it restricts itself merely to the reduction of crime or the increase of surveillance but rather concentrates on the formation of the existence of the belonging, visibility, and permanence psychologies. One of the principal methods of the adaptive reuse strategy is therefore to inject the residential typologies of the character that will provide the necessary means for achieving the purpose of the strategy. Mixed residential activity-generated "eyes on the street" are a necessity for urban safety and liveliness (Bullen & Love, 2011). In the case of OSI Ghia, the operation will be carried out not only by changing sections of the edifice to live-work units and student housing but also by ensuring that there is a continuous presence of people thus the area will be made safer simply due to the presence of people (Humphrey et al., 2017).

Most importantly, the reestablishment of OSI Ghia with its fragmented urban fabric is of equal significance. With the help of the Accessibility and Fill-Void analyses, it is seen that the railway corridor physically cuts the area into two parts and also causes discontinuity not only in the physical but also in the perceptual aspects. The suggested plan strives for carrying out the utilization of bridges, green corridors, and active public spaces not only to absorb the traffic but also to fix the lacking of the space caused by the railway. This method takes the werk of Landschaftspark Duisburg-Nord as an example (Latz & Partner, 1991). Moreover, the establishment of the new bridge on the railway will not only be the most straightforward way to reach both the east and the west of the site, but it will also give the area both a symbolic and a functional unity.

From the point of view of sustainability, the new design is in line with the shortage of green infrastructure in the neighborhood, as mapped out by the Green System Analysis, which exposed the patchy character of the existing green network. As an attempt to fill this gap and provide ecological solutions and socially integrative spaces, green corridors, linear parks, and permeable surfaces have been proposed. This is in line with a statement by De Sousa (2006) that “brownfield redevelopment, if green infrastructure is the planning basis, not only improves the ecological condition but also the urban liveability.”

It is quite significant that some of the disseminated functions here are established to provoke the economic regeneration as well. In the course of the literature review, Shipley, Utz, and Parsons (2006) were cited who wrote, “Adaptive projects of recycled buildings can serve as the driving force for economic revitalization through attracting investments, diversifying local economies, and creating jobs.” The co-working spaces for businesses, cultural venues, and food markets in the OSI Ghia complex that are going to be set up deliberately will not only go along with local entrepreneurship but will also generate the employed people that will be needed. The newly launched functions not only exploit the spatial benefits of industrial halls, as they have large dimensions and are modular, but also agree with Turin’s general aims in terms of economic diversification in post-industrial districts.

The vision, therefore, is no longer a mere nostalgic attempt aimed at preserving industrial ruins nor an exclusively commercial project, but rather a strategic repositioning of OSI Ghia as a new urban node which is capable of maintaining its historic identity while at the same time satisfying the needs of the modern world. The junction of safe residential sectors, infrastructural reconnection, green design, and economic activities all together collectively aspires to convert OSI Ghia into a lively, reachable, and productive part of Turin’s urban environment.

Bullen and Love (2011) give the primary emphasis on the fact that adaptive reuse is not only responsible for the preservation of the built heritage but also for the regeneration of social and economic networks within the urban context. Plevoets and Van Cleempoel (2011) are of the opinion that “adaptive reuse is not merely about saving architecture, but also about the infusion of new meanings and allowing future generations to become familiar with the past.” The design suggestion is this concept—it intends to just restore the building as well as to reclaim its position within the urban, economic, and social networks of the city.

Design Strategies

1-cultural centers : are the main intervention points of the OSI Ghia site, here are the places where they want to give new life to the culture, stimulate creative industries and enable local people to express themselves. Instead of concentrating the whole cultural functions of the site in one building, the strategy is aimed at creating a distributed network of spaces. These might be artist studios, exhibition halls, performance niches, or outdoor gathering areas. The network of spaces is what activates the different parts of the site. Besides these centers that are located inside the industrial buildings, they are also present in the open spaces that give them a chance to reinterpret the spatial memory of the site while also allowing the new uses to be part of it. Hence, by hosting a series of diverse events like installations, concerts, local exhibitions, or public participation, these centers remain the places that the neighborhood's social identity can be best strengthened (Evans, 2009; Landry, 2012).

2-Multi functional spatial framework : are generally accepted as a vital way for converting the urban sites like OSI Ghia. This strategy does not, however, rely on a single dominant function but rather on a layered program of therefore co-working and educational spaces, cultural venues, green public spaces, local markets and residential units. Such spatial diversity is not just a scattergun approach but strategically distributed to balance social life, economic activity, and environmental quality (Jacobs, 1961). The mix of work, leisure, learning, and community uses makes it possible for the regeneration to turn into a vibrant and inclusive urban space that operates well throughout the day and is suitable for various user groups This sort of integration does not only enhance the site vitality and safety but also corresponds to global sustainability goals as it encourages walkability, reduces the need for commuting, and supports local economies (Talen, 2012). In addition to this, the multifunctionality of the site is it that it guarantees long-term flexibility thus making OSI Ghia a resilient node in Turin's changing urban landscape (Beatley, 2011).

3- Linking Divided Zones, Bridge Strategy : The OSI Ghia site railway has been a physical and psychological barrier that has divided the city. It has caused the surrounding areas to be very negatively affected. The railway has, however, historically been a barrier that physically separated and psychologically divided the city, and it has extended the negative impact to the areas around it (Cervero, 1998). The adaptive reuse of the site acknowledges the railway as the major issue (Cervero, 1998). The main goal of the project is to rebuild the separated parts of the city, and to do so, the team has come up with the idea of deploying not only a major public transport infrastructure but also two multi-modal bridges—one to the east and one to the west—that are supporting the uninterrupted car, bike, and pedestrian traffic. In this way, they are creating a shared and sustainable mobility situation (Pojani & Stead, 2015). These bridges will serve as continuations of the major public transport infrastructure and at the same time, as local regenerators for the lost connection of the areas. Both the eastern bridge and the western bridge allow for free and uninterrupted access to cars, bikes, and pedestrians, thus making the most of green mobility possible. The eastern bridge gives direct access to transit hubs and public squares, while the western bridge opens up residential neighborhoods and community services. These two bridges not only increase the number of options for traveling around in the area, but they also ensure the comfort of the journey, and at the same time, they create a better relationship between people in the neighborhood (Gehl, 2011).

4- Inclusive Access and Green Mobility Network :

The Inclusive Access Strategy and Green Mobility Network are new environmentally friendly and equitable transport systems that are being implemented in the OSI Ghia area. It illustrates the development of not only pedestrian-friendly but also bicycle-friendly routes that haul connection multiple new access points to the site and think-two new bridges that integrate the site with the neighboring communities. The design commits to clean transportation by guaranteeing that all main roads within the site are safe, continuous, and well-connected for green transport modes (Banister, 2008). An access ramp has also been put up to increase the comfort of those who are coming by car from the upper part of the slope and mitigate the need for car use by facilitating active travel (Gehl, 2010). Thus, the actions taken become not only the access and connectivity improvement but also the energy-saving and human-oriented urban design promotion, which consequently becomes a part of the sustainable regeneration of the site (Pucher & Buehler, 2010).

5- Flexible Event Infrastructure : Flexible event infrastructure is a novel design strategy that energizes the outdoor spaces of the OSI Ghia location throughout the year by utilizing versatile and modular components like fold-up stages, mobile kiosks, tensile pavilions, and retractable shading systems. The ability of these flexible installations to cater to a wide range of temporary uses, such as seasonal street markets, cultural festivals, public workshops, food truck events, and open-air screenings, not only creates a friendly setting for small businesses but also increases the social interaction (Whyte, 1980). This method of work is consistent with changes of the daily public life, it is vibrant and full of interaction while still environmentally friendly and multi-purpose in the use of the area (Farr, 2018).

6- Interactive Street Furniture:

is definitely a feature in human scale for the urban area that energizes the public places. It was definitely not limited to simple benches only. The whole range of activities is included in the modular seats, kinetic installations, play structures, and digital elements that are suitable for physical, social, and creative interaction. Elements such as solar lighting and responsive movement components not only provide the convenience of lighting but also serve as the playfulness aspect, thus being the embodiment of sustainable and inclusive urban design (Farr, 2018). In a similar tone, Whyte (1980) points out that even small interactive elements can go a long way in turning public spaces into vibrant places by providing opportunities for spontaneous social engagement.

7- Green buffers :

Green buffers serve as transitional zones that help to moderate conflicts between industrial and residential areas. At the OSI Ghia location, these green corridors not only facilitate the movement of species through the landscape, but also absorb and mitigate noise and air pollution and create more favorable microclimates in the vicinity of the railway (Farr, 2018). Apart from the environmental advantages, they also give an impression of security and comfort for the eyes. In Whyte's (1980) words, small-scale green efforts can invigorate public life and improve urban livability.

8- Linear parks :

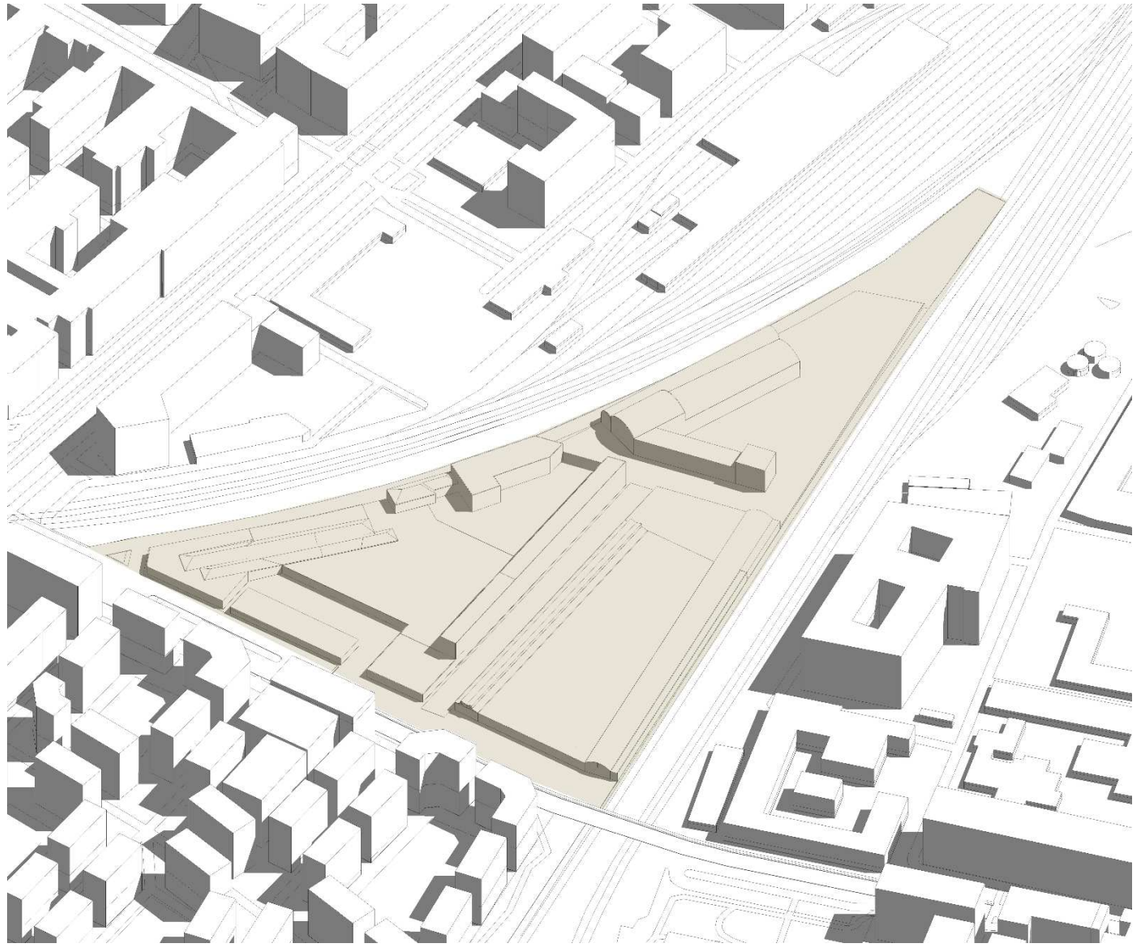
Linear parks are the green corridors that connect broken urban areas, hence, they not only create the continuous routes for pedestrians but also the new social and recreational spaces. These parks, in the OSI Ghia adaptive reuse project, not only support the biodiversity but also are the inclusive environments for all ages. They not only recover the environment, but also provide opportunities for the social interaction (Farr, 2018; Whyte, 1980).

9- Water Management Features :

Water conservation elements form a major part of the OSI Ghia redevelopment project, which aims at improving the climate resilience, biodiversity, and the use of eco-friendly landscape methods in the region. These measures target stormwater runoff minimization, urban flood risk reduction, and soil-water regenerative interactions (Farr, 2018). The incorporation of such characteristics is not only an integral part of the site's environmental wellness but also the process of adjusting to climate change (Farr, 2018; Whyte, 1980).

Rain Gardens: Rain gardens along pedestrian lanes and open promenades are shallow planted trenches that help collect and treat rainwater locally. By means of native plants that soak up extra water and clean contaminants, these gardens not only encourage biodiversity but also educate communities on sustainable water cycles (Farr, 2018). Additionally, this kind of green infrastructure nourishes the ecological education sector and also enables urban resilience (Whyte, 1980).

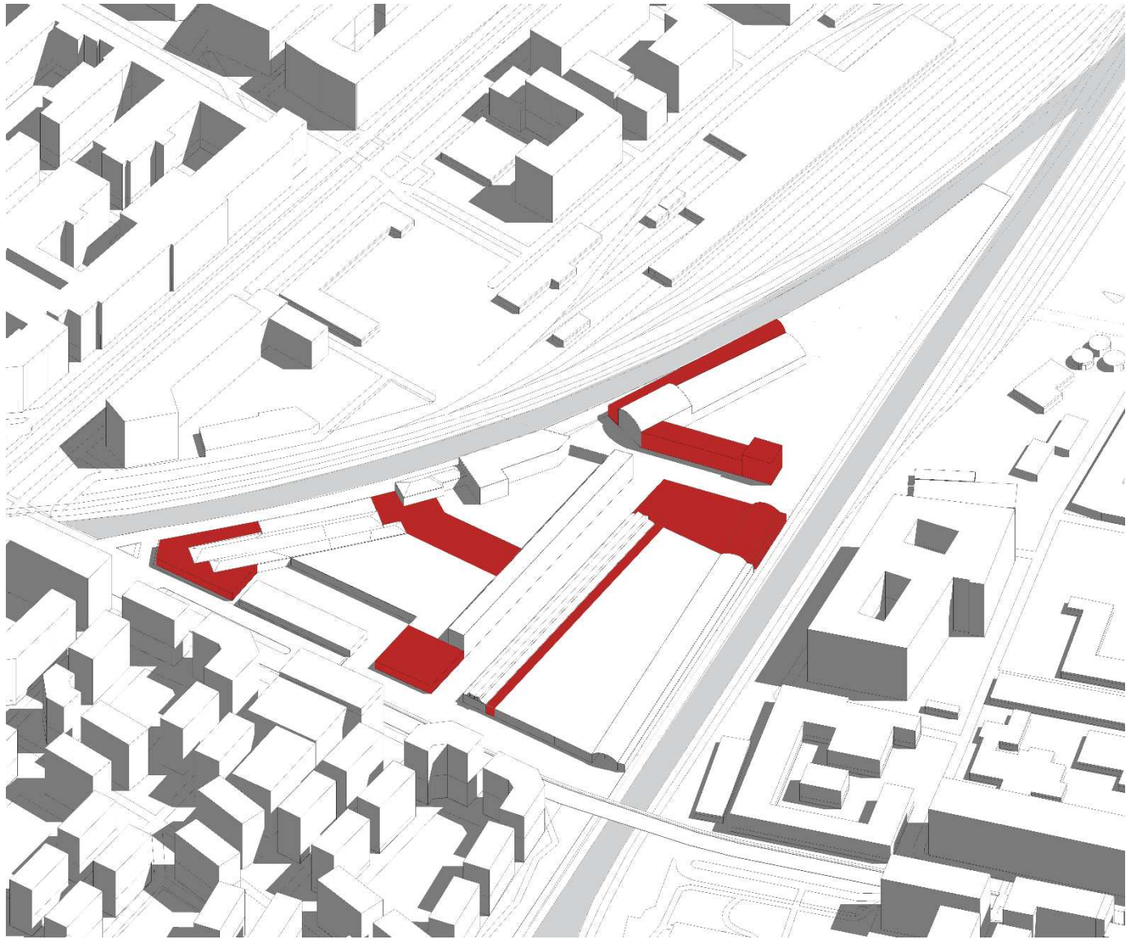
Increased Permeability: By substituting impermeable surfaces with permeable ones like gravel paths, permeable pavers, and open soil plazas not only enables water to be absorbed naturally by the soil, but it also recharges aquifers and reduces the burden on stormwater drainage systems (Farr, 2018).



Design concept

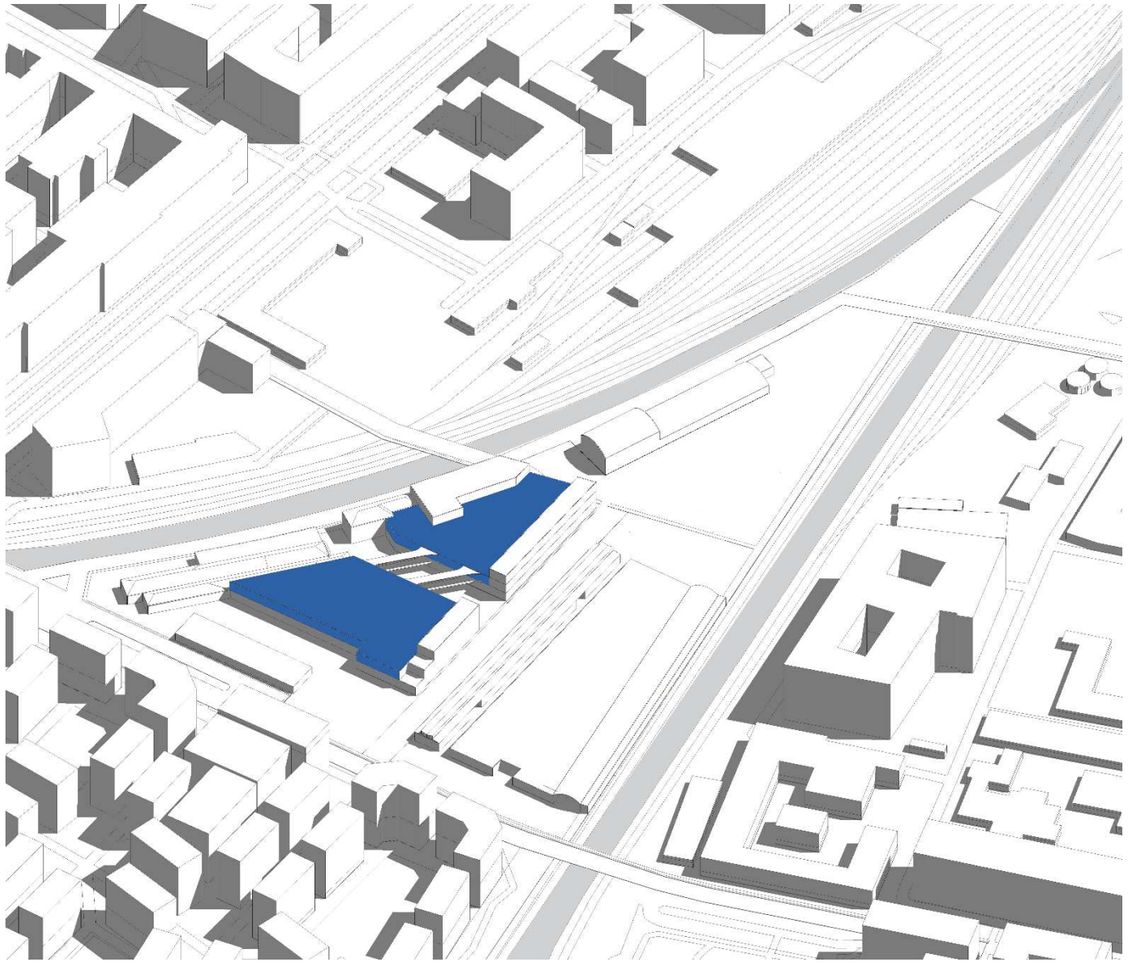
Existing Site

According to the analysis in the previous chapter, the project site is made up of three big enclosed industrial buildings that have very little open space between them. These buildings are quite isolated in terms of their function and space and they have no connection with the surrounding urban fabric. Furthermore, they are very densely packed all over the site, thus creating a huge blockage of space in the locality.



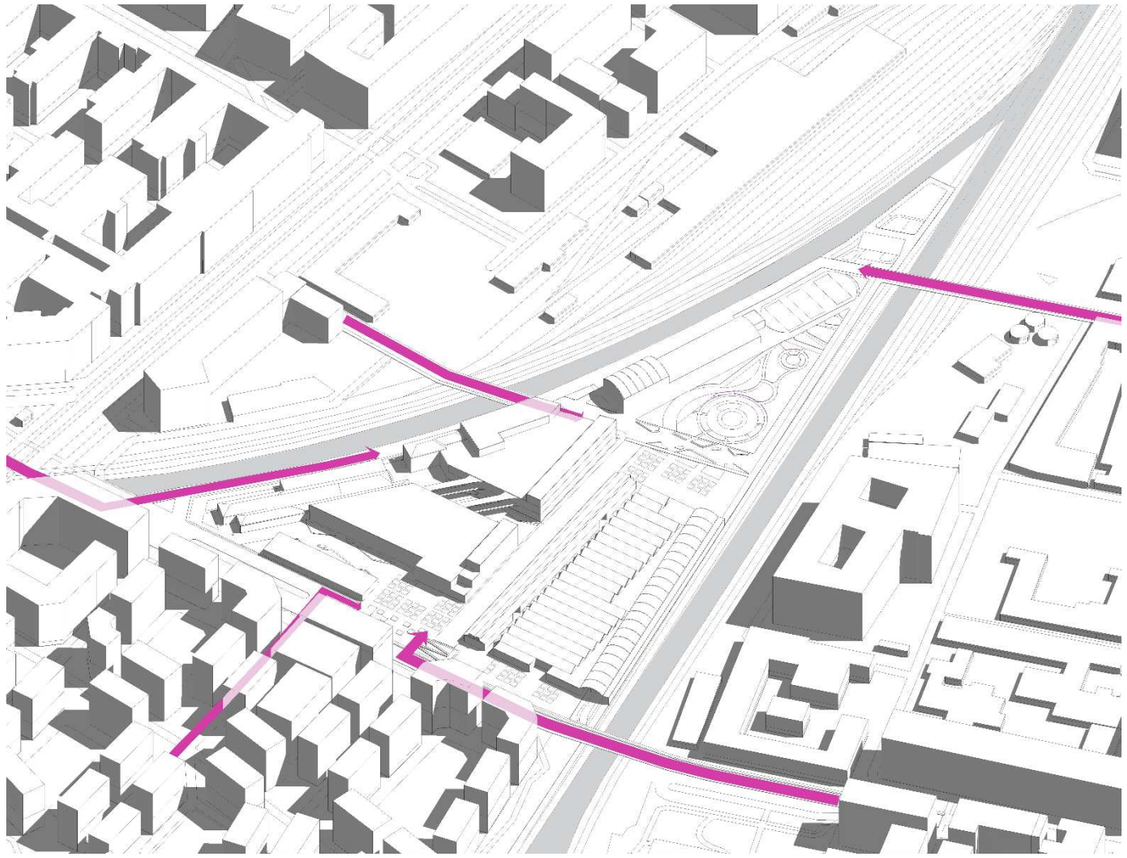
Demolished parts

For the purpose of improving spatial permeability and also opening up the site for new functions and connections, a number of old structures have been marked for demolition. These parts, shown in red, are mainly enclosed and disjointed industrial volumes that not only hinder pedestrian flow but also visual continuity.



Newly Added parts

As a result of the site's functional regeneration, the regions marked in blue indicate the newly suggested constructed masses. These new elements are installed in a strategic manner to fill in and reinforce the commercial zone, especially the shopping mall.



Accessibility

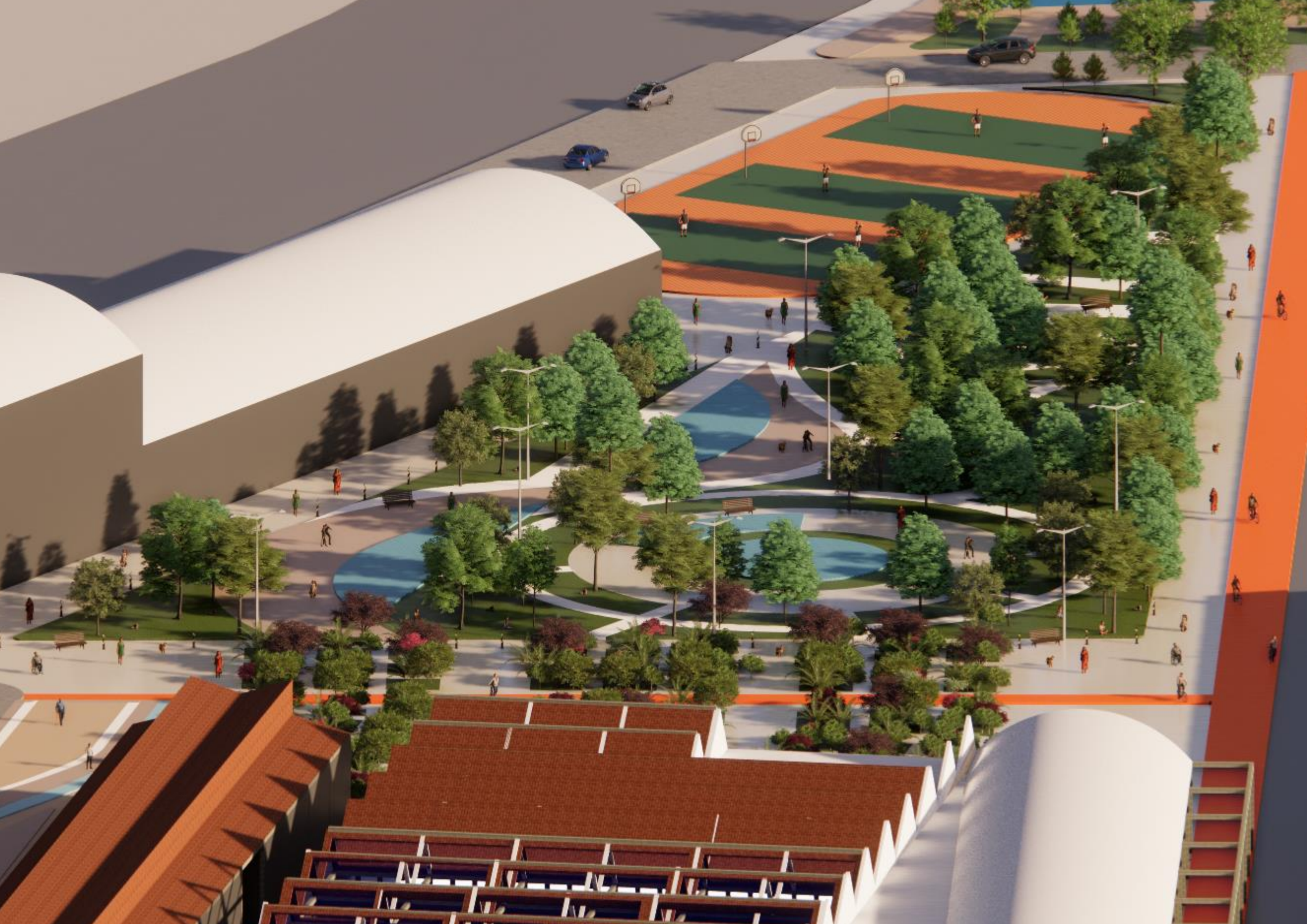
In order to enhance the accessibility and establish a better connection between the OSI Ghia site and the neighboring areas, the infrastructure has been upgraded by adding two new bridges, thus creating an overpass across the railway. Besides, the new entrance ramp on the south side makes the entrance more convenient and inclusive for pedestrians and cyclists. These new links not only facilitate the integration of the site with the neighborhood but also allow for more barrier-free and easier movements across the area.

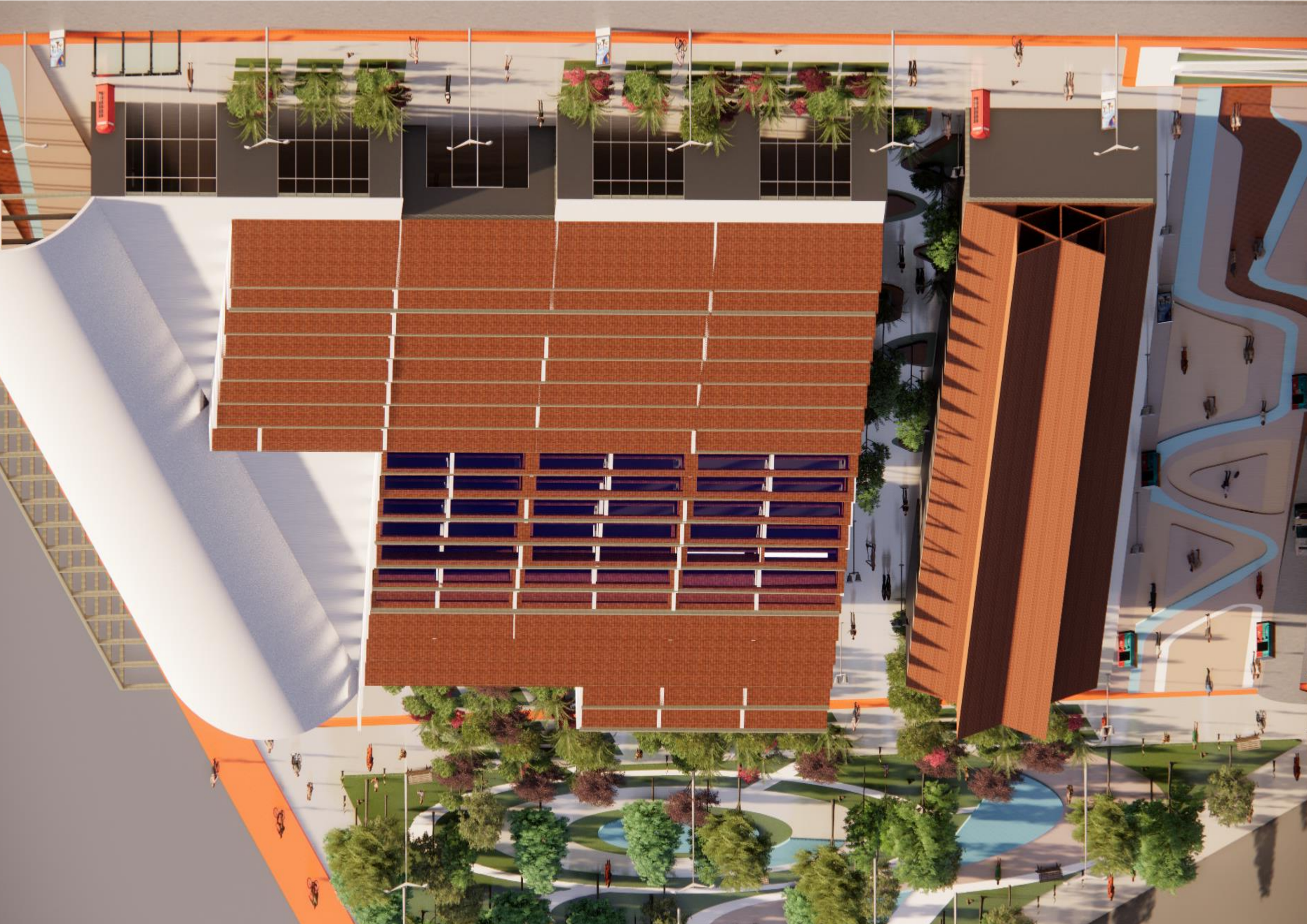
Enhancing the Site's Greenness

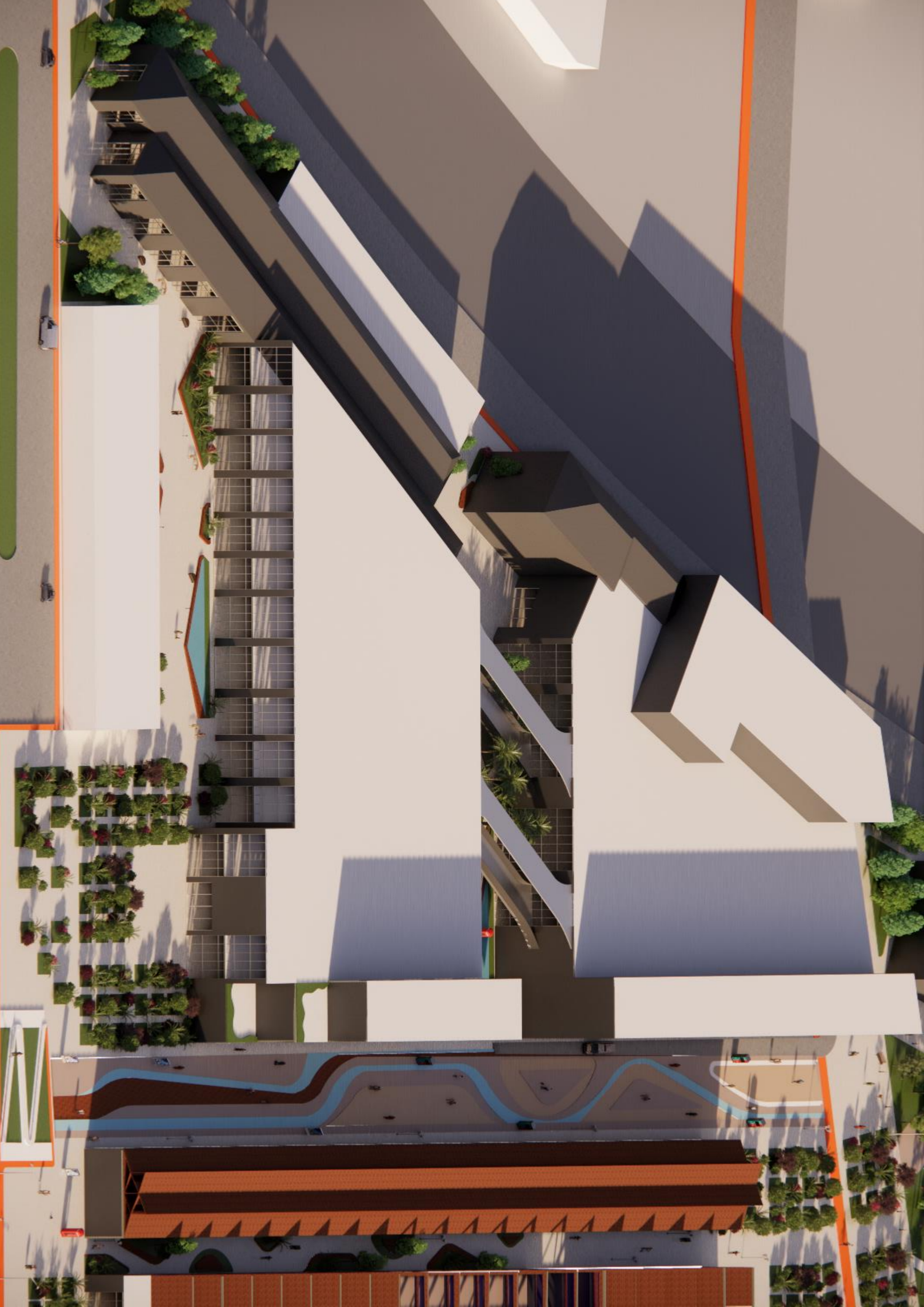
The newly created green spots, represented in light green, are the main agents in the metamorphosis of the OSI Ghia area from a closed, industrial environment into a more breathable and green city. These green patches are co-ordinated in such a fashion as to cover the whole area visually, to be able to bring about better microclimate conditions, and to enable the formation of natural changes in the transition between the built and the open areas. Furthermore, green areas contribute environmental regeneration as they create conditions for the biodiversity, they help with the absorption of rainwater, and they provide places that are cool for the comfort of pedestrians.

Various Functions

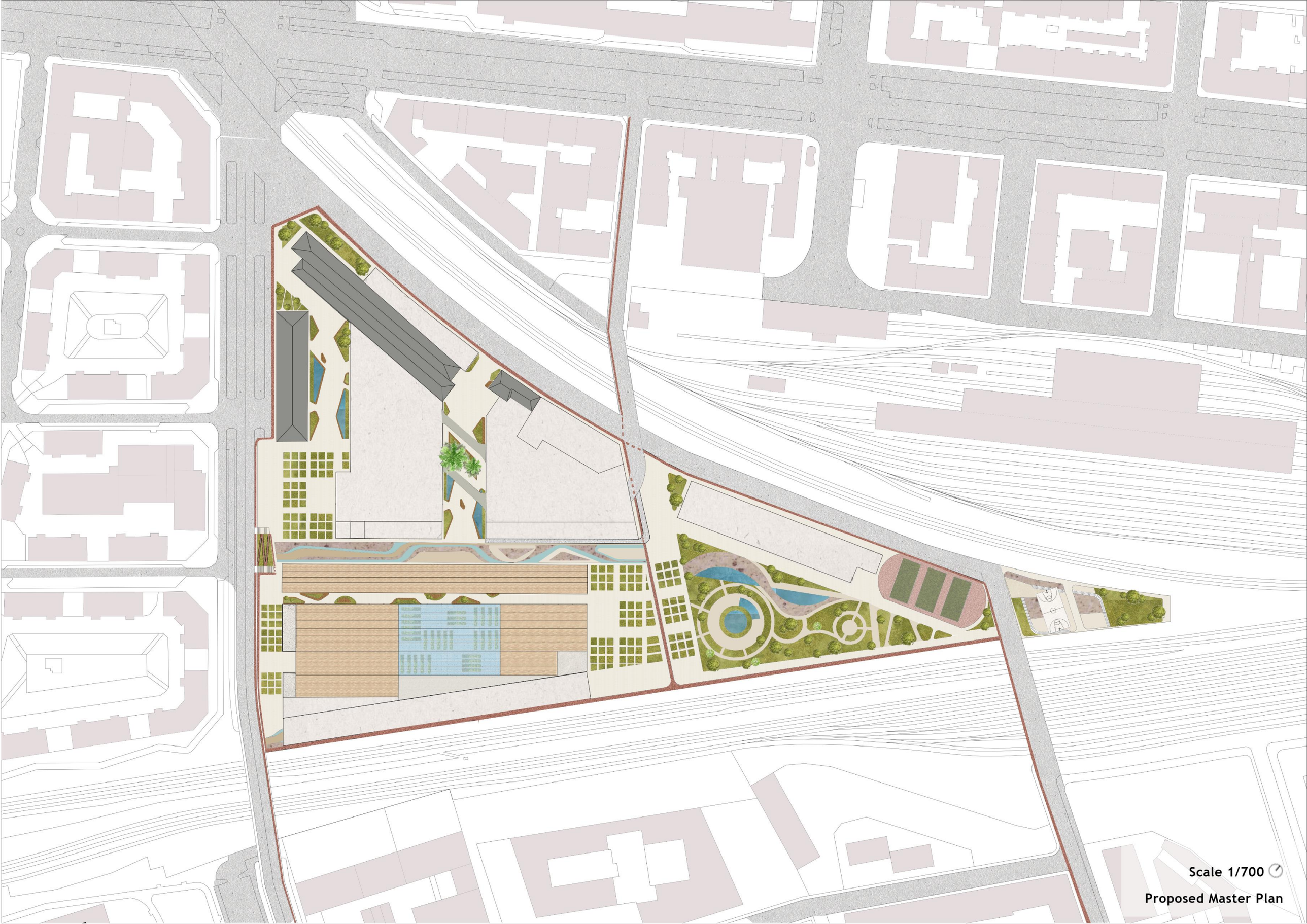
The OSI Ghia area is a location that is mainly residential and it doesn't have active public spaces that are able to meet the daily needs of the neighborhood. The intervention that is proposed here tries to bring the place that has been left underutilized back to life by providing the place with functions that are both diverse and adaptable and thus able to attract not only the local community but also visitors from the greater city. The project, through the incorporation of multifunctional and adaptable spaces—places that can be used for various different activities such as social, cultural, and business—endeavors to raise the site's vibrancy, encourage diversity, and also be part of the overall positive change of the urban quality








LIVE MUSIC



Scale 1/700

Proposed Master Plan

1- Shopping Center
• Cinema and Indoor Entertainment Zone

2- Supermarket (ground floor)

3- Gym (upper floors)

4- Toolbox

5- Student Residence

6- Co-working Space

7- Indoor Greenhouse

8- Multipurpose Hall

9- Shaded Pedestrian Trail

10- Restaurants and Food Court

11- Garden-Park

12- Outdoor Sports Zone

1

4

1

2 - 3

5

6

7

8

9

10

11

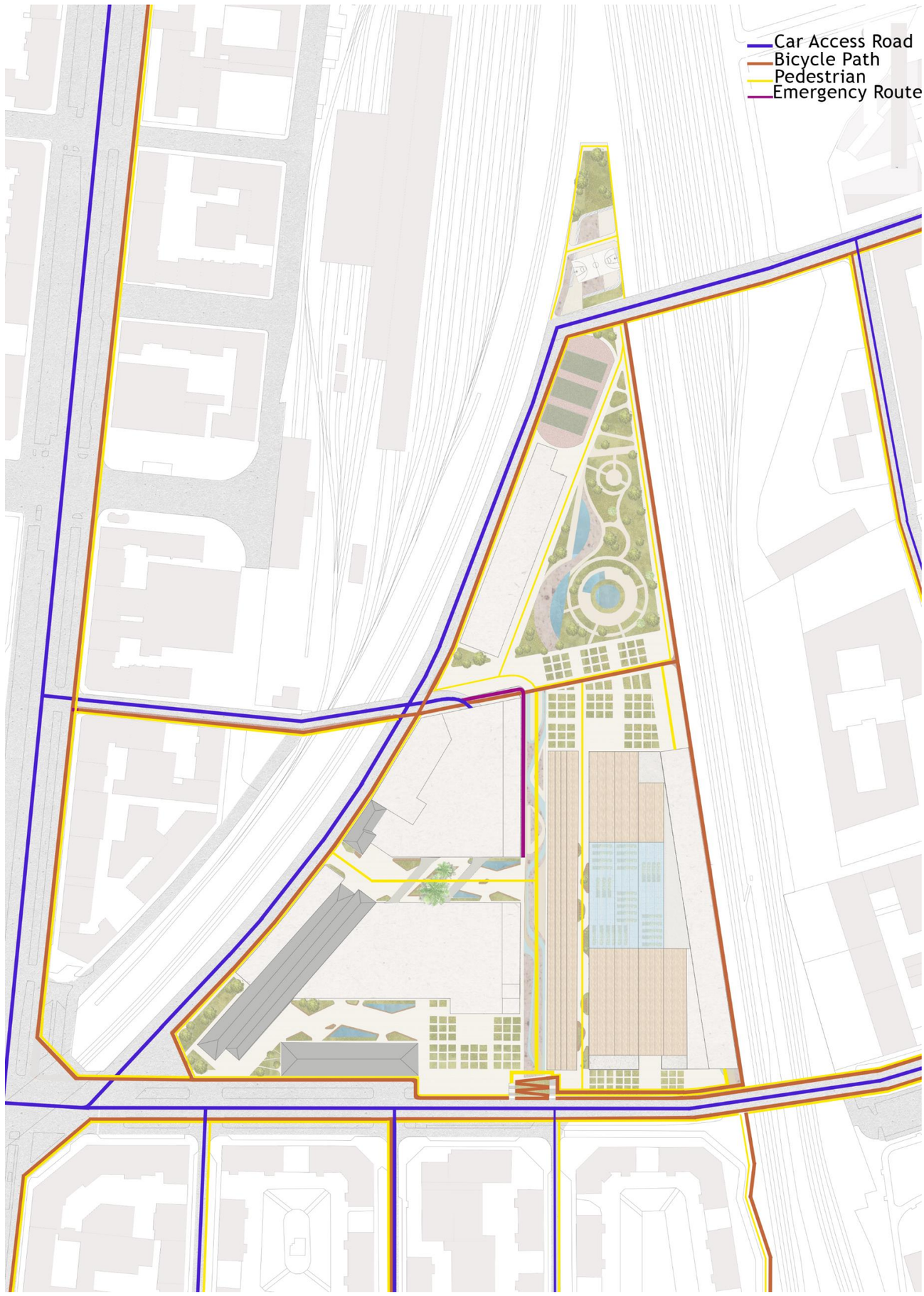
12

Scale 1/700

Functional Layout of the Proposed Master

Circulation Strategy and Site Accessibility

The OSI Ghia site mobility framework has been thoughtfully crafted to bring out the best multi-modal connectivity and facilitate a smooth blending with the nearby urban area. The circulation system is made up of four main path typologies: yellow lines signify pedestrian routes, orange lines stand for bicycle paths, blue lines show vehicular roads, and purple lines designate emergency access routes specifically designed for ambulance circulation within the site. Besides strengthening external links, the proposition also puts stress on the establishment of a dense and continuous pedestrian network within the site itself, thus making going on foot and moving around the open areas easier and more enjoyable. An array of two new bridges and a ramp greatly facilitate access by not only physically connecting but also visually marking the locations from where all the transport modes—walking, cycling, and driving—can enter the site. The bridges act as raised links that cross the railway tracks, whereas the ramp is a barrier-free access entry point especially for pedestrians and cyclists. In this way, these new parts of the site not only enable smooth traffic towards the southern, eastern, and western parts of the district but also increase the number of route options and make it easier for the site to blend in with nearby urban areas.



Plan Drawings OF OSI GHIA SITE

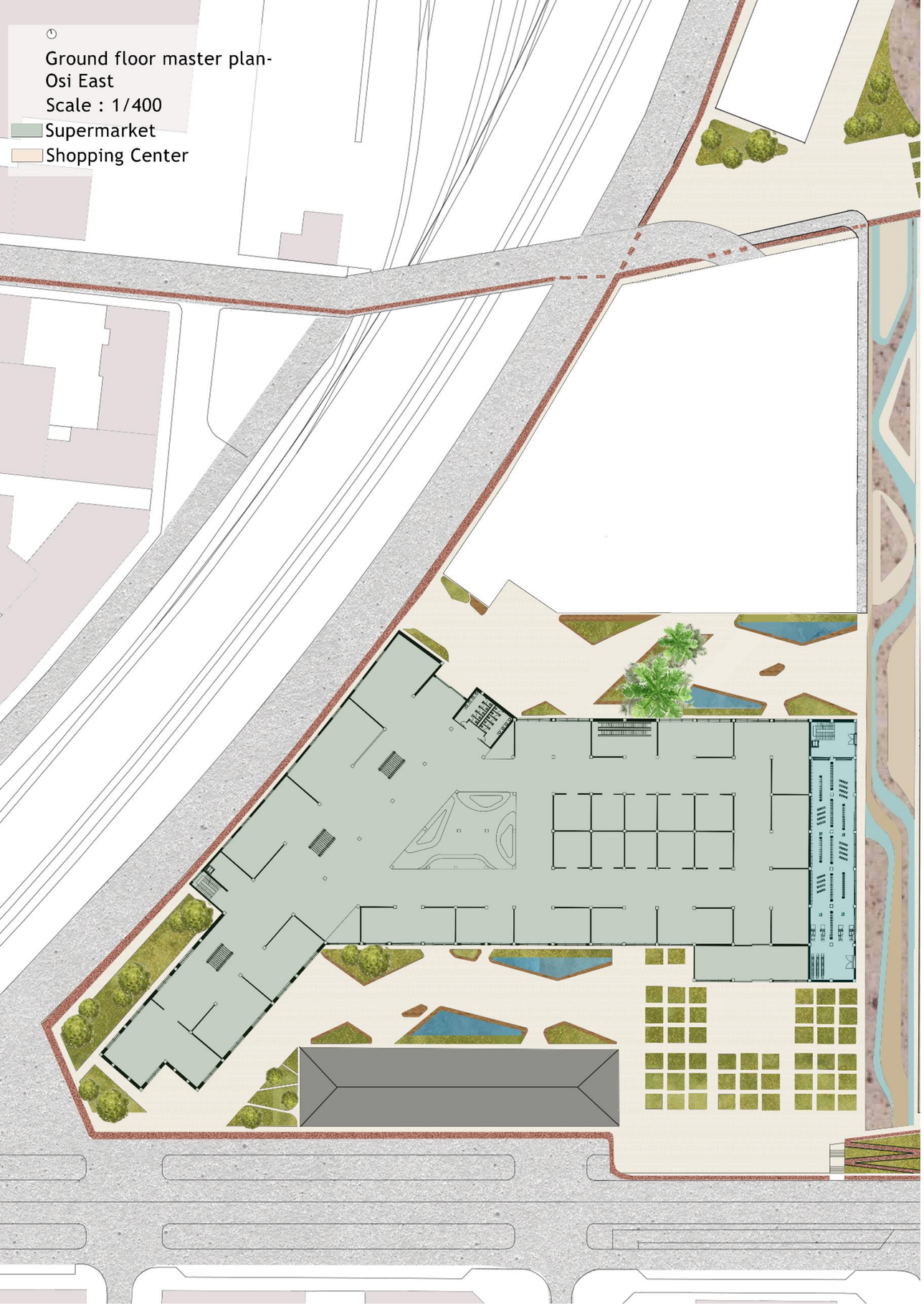
Ground floor master plan-
Osi East
Scale : 1/400

- Student Residence
- Multipurpose Hall
- Indoor Greenhouse
- Co-working Space
- Shaded Pedestrian Trail

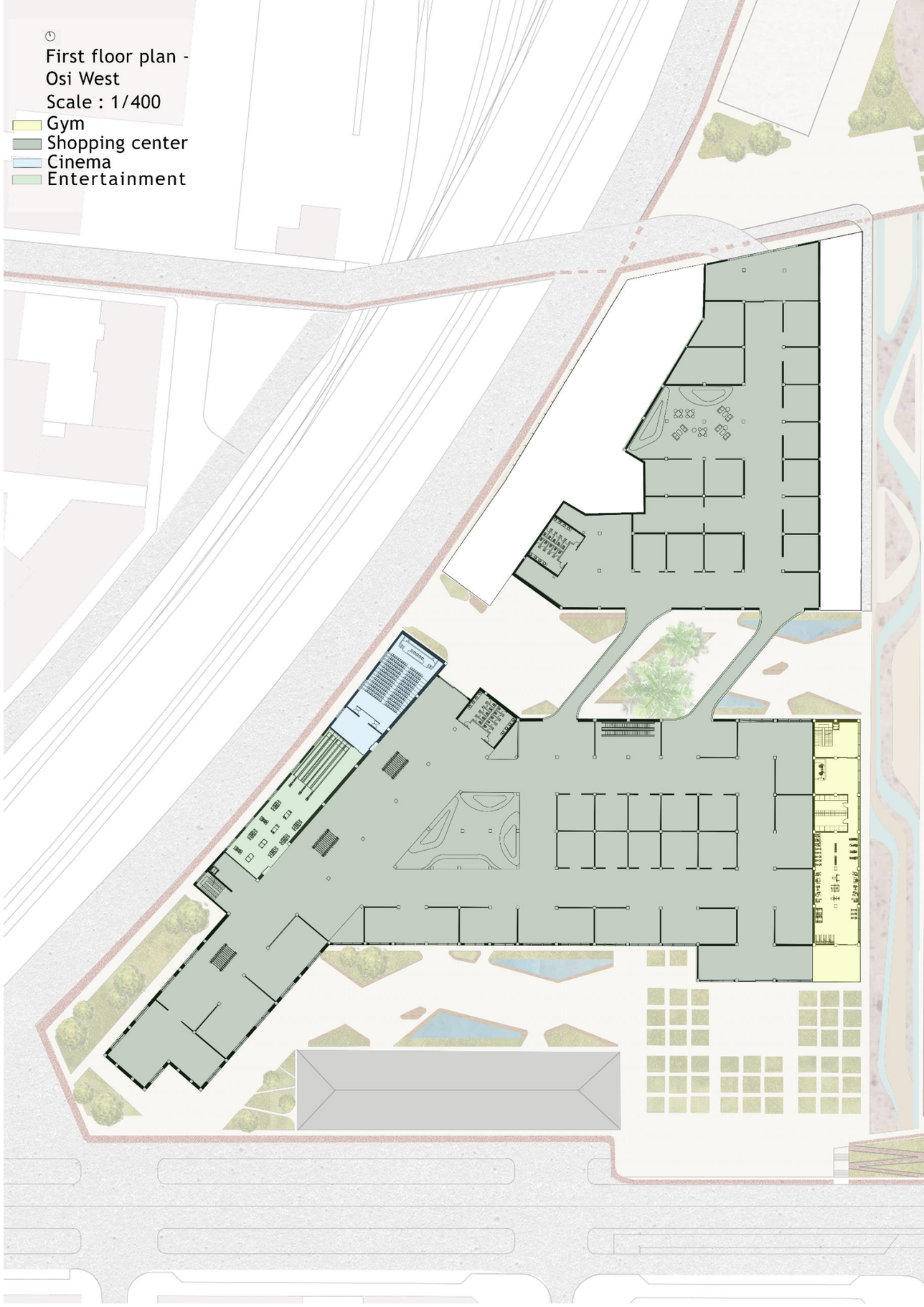
First floor Plan -
Osi East
Scale : 1/400

- Student Residence

Ground floor master plan-
Osi East
Scale : 1/400
Supermarket
Shopping Center



First floor plan -
Osi West
Scale : 1/400
Gym
Shopping center
Cinema
Entertainment



Conclusion

The OSI Ghia Ex-Factory in Turin has been adaptively reused to be more than just a design challenge—it's a pivotal opportunity to rethink urban sustainability in the industrial heritage legacy. This study has shown that post-industrial brownfields, if they are dealt with in a good way such as being sensitive to the history, context, and community, can be the main sources of renewal and resilience.

In the thesis, the OSI Ghia site has been probed for not only the part that it played in Turin’s 20th-century industrial boom and bust but also as a ground for experimental strategies which aim at ecological awareness, spatial inclusion, and economic regeneration. The proposed action is based on the idea that heritage structures should not only be saved as unchanging entities but be converted into vibrant places that meet the needs of modern urban life.

Three guiding questions framed the project:

Economic revitalization through adaptive reuse

The findings of the study have shown that, through the implantation of multifunctional programs such as coworking spaces, the place can be brought back to life as a hub for the creative industry and entrepreneurship. These functions not only create jobs but also turn the post-industrial economy of Turin into a more diversified one, thus, they enable the development of a more resilient local ecosystem. Apart from these productive functions, the integration of commercial and recreational ones is necessary to energize the local economic cycle. The latter can be in the form of shopping mall, cinema, entertainment areas, restaurants, supermarket, fitness center, and even greenhouses. Such facilities, in addition to being a response to the needs of the community, also turn into employment generators and activate financial flows in the area, thus, they become a continuous source of jobs and economy to the site in the long run.

Social cohesion and neighborhood reintegration Initially

The project is aimed at the elimination of the spatial gaps that occur due to the factory's disuse. Thus, by making spaces more accessible, introducing cultural venues, and creating pedestrian-friendly connections, the design encourages the inclusive participation of the public, helps cement the feeling of being part of the community, and regains the textile site's surroundings as a coherent urban fabric. The addition of residential elements such as student housing has a tremendous impact on the livability of the site's. The residential element makes it possible for the area to draw a younger population and become a place that is lived in around the clock. This can bring a new vibrancy to the area, increase not only the passive surveillance but also the perception of safety, the sense of community, and the continuous activity of the area. The very human focus of this concept is what drives it to become an integral part of the site that is no longer isolated from everyday life and social interaction.

Balancing heritage conservation and sustainability Instead of simply getting rid of the old, the project has chosen to work with it. The proposal shows how the past can be linked to the present through the conservation of the main architectural features and passive design, the use of sustainable materials, and climate-responsive landscapes, which are all environmentally friendly and at the same time it is the history.

The study was undertaken with the successes of various local and international examples—also Landschaftspark Duisburg-Nord, Menomonee Valley, and Parco Dora—in mind. Yet, the paper still recognizes Turin's distinctive spatial features and socio-economic conditions as the basis for the new design. The decision-making is not here, transported solutions, but rather local adaptations, which correspond to the special tasks and opportunities of the place.

Speaking personally, this project has allowed me to go deeper into the concept of architecture as a tool for calling up change—not only through space reshaping but also in memory, identity, and the collective of the future. Adaptive reuse of the OSI Ghia Factory, as put forward here, is nothing more than a dream of a new pattern of urban renewal where the three concepts of sustainability, inclusiveness, and cultural continuity form a single basic unit.

Summing up, the OSI Ghia site's repurposing demonstrates the potential of adaptive reuse to create a powerful cure for the wounds and at the same time, the fount of opportunities in the industrial-metropolises. The author suggests that architecture can be a connecting link between the memories of the past and the present, a link between the disintegration of the old and the new and can nobly lead the way to more interconnected, full of life, and more easily adaptable cities.

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