Living with Industry

Context-Sensitive Regeneration of Active Industrial Neighborhoods
A Comparative Study of Turin and Luleå

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Master Thesis

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Context-Sensitive Regeneration of Active Industrial Neighborhoods
A Comparative Study of Turin and Luleå

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Their support played an important role in completing this thesis.

ABSTRACT

Industrial neighborhoods often experience spatial, social, and ecological isolation in many cities.
This thesis question is whether regenerative strategies can be transferred between different contexts or must be adapted to their specific spatial and social conditions.

To answer this question, we selected two active industrial neighborhoods in two contrasting morphological environments:

- Vanchiglietta in Turin, located within a continuous and compact urban fabric
- Ytterviken in Luleå, located within a dispersed, polycentric urban structure

We tried to understand the challenges that the areas are facing through spatial analysis, functional mapping, interpretation of user behavior, and contextual research. At the end we identified three shared challenges across both sites:

_Spatial Disconnection (Isolation)
_Social Fragmentation
_Fragmented Green Networks

However, while the challenges are the same, the causes are different:

In Vanchiglietta (Turin), spatial isolation emerges from physical barriers such as the Dora River, the cemetery wall, and poorly connected parks inside the area.

In Ytterviken (Luleå), isolation is shaped primarily by large-scale distances, polycentricity, and infrastructural edges—including the highway and surrounding forest—that separate the area from other districts.
The same applies to social fragmentation and fragmented green networks, which emerged due to each city's distinct user profiles, land-use patterns, and ecological structures.

These observations demonstrate that even when industrial areas share similar problems, their underlying reasons are different, and therefore the regenerative strategies for designing them cannot be universal, Instead, they must be context-sensitive, according to the morphology, scale, and social dynamics of each location and different urban contexts need different strategies.

Ultimately, the thesis argues that context-sensitive regeneration enables active industrial areas to become more spatially integrated, socially vibrant, and ecologically connected, contributing to healthier and more resilient urban environments.

INTRODUCTION

Industrial areas have always shown an important role in shaping cities, they have influenced cities spatial structures, economic development, and social life (Douet, 2012; Hatuka & Ben-Joseph, 2020). By evolving urban fabrics, many industrial neighborhoods—especially those within the city—have become spatially, socially, and ecologically disconnected from their surroundings. Vast part of literature argues the regeneration of post-industrial sites (e.g., European Commission, 2016; UN-Habitat, 2020), and there are fewer studies that examine active industrial districts and the challenge of integrating them into contemporary urban life without losing their productive function (Hatuka & Ben-Joseph, 2020).

This thesis argues that active industrial neighborhoods are increasingly isolated within cities—not only physically, but also socially and ecologically. However, the underlying reasons of this isolation are different based on the contexts. As Hatuka & Ben-Joseph (2020) demonstrate, the relationship between industry and city is strongly shaped by urban morphology, planning history, and land-use logics. Similarly, Chertow's (2000) work on industrial symbiosis shows that industrial–urban integration depends heavily on local resource flows and spatial configurations. These perspectives shows that even when industrial areas share similar problem of isolation, the mechanisms producing them can be different, meaning that regeneration strategies cannot be universally transferred (UN-Habitat, 2020).

In other words, industrial neighborhoods in different types of cities become disconnected for different reasons, and therefore require context-specific regeneration strategies. Understanding this is important for designing interventions that can reconnect industrial areas with the city socially, spatially, and ecologically (European Commission, 2016).

To investigate this question, we examine two active industrial neighborhoods located in contrasting urban contexts:

- Vanchiglietta in Turin, located within a compact, grid-based, historically layered European city (Bagnasco, 1990), and

- Ytterviken in Luleå, located within a dispersed, polycentric Nordic urban structure shaped by landscape and climate (Swedish National Board of Housing, Building and Planning, 2018).

Although both neighborhoods show similar problems—spatial disconnection, social fragmentation, and fragmented green networks—the morphological conditions that generate these problems are different. We identify both the shared challenges and the specific mechanisms that produce them in each context through spatial analysis, functional mapping, user-behavior interpretation, and ecological assessment. This comparative understanding helps us in evaluating which regenerative strategies can be adapted to each of these contexts.

Ultimately, the thesis demonstrates that the regeneration of active industrial neighborhoods must be context-sensitive. Industrial districts cannot be reconnected to their cities through universal solutions; instead, interventions must respond to the spatial structure, user dynamics, and ecological conditions of each context (Hatuka & Ben-Joseph, 2020; UN-Habitat, 2020). By using the comparative framework, the research contributes to develop strategies for creating industrial areas that are spatially integrated, socially active, and ecologically connected.

INDEX

01

LITERATURE REVIEW

In this chapter we outline the theoretical background of the Thesis. We review the key literature on industrial areas and their relation with cities and regenerative approaches.

1.1 Industrial Areas in Urban Contexts

Industrial areas have long been central to the economic and spatial development of cities. In many European and global cities, manufacturing and logistics districts grew alongside housing, infrastructure, and civic amenities. However, the expansion of cities and environmental awareness in recent decades have increased tensions between industrial functions and urban livability.

Historically, urban planning often treated industrial zones as separate from the city—functional areas meant to be buffered or hidden. But as cities aim for more integrated and sustainable development, the continued presence of industry within urban boundaries presents a valuable opportunity for mixed-function coexistence (Hall, 2002; Chertow, 2007). Active industrial areas, unlike abandoned post-industrial sites, remain productive, yet they require updated spatial strategies to reconnect with urban life.

they can continue their role in urban development.
Industrial areas are part of a city's identity, and they shouldn't become isolated and separated from the other part of the cities.

As James Douet (2012) explains in Industrial Heritage Re-tooled: The TICCIH Guide to Industrial Heritage Conservation, industrialization didn't just introduce new types of buildings, they shaped the structure of the cities and how they work. They played an important role in cities growth; they created a pattern that even now we can see their influence on the cities. These districts often developed near rivers, harbors, or railways because of their need to transport and energy resources. New neighborhoods emerged around industrial areas and streets, houses and public facilities were designed according to the need of industry.
It is not just the visible elements like buildings or landscape that gives industrial heritage meaning but also the intangible aspects of industry. The skills, traditions, and identity of the workers are the things that show the value of industry.
Douet also points out that industrial sites are different in types and scales; from large complexes to small workshops and lighter industry integrated into residential neighborhoods. However, all of them are Historically valuable and each of them shows a specific moment of history. analyzing them helps to understand how cities adapted to technological and social changes over time.
As TICCIH emphasizes, preserving industrial heritage is not just about keeping old buildings; it's about understanding how they can continue their role in urban development.
Industrial areas are part of a city's identity, and they shouldn't become isolated and separated from the other part of the cities.

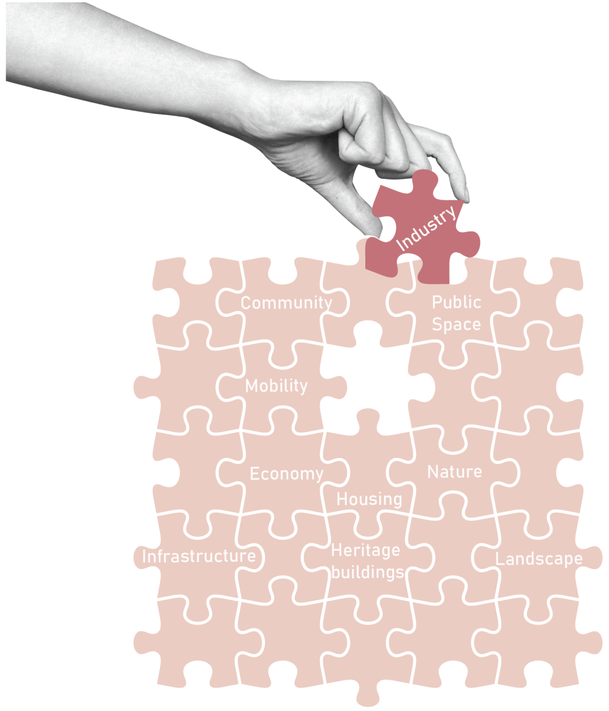


Fig.01. Diagram produced by the authors
The puzzle metaphor highlights the interdependence between industrial production and other urban layers

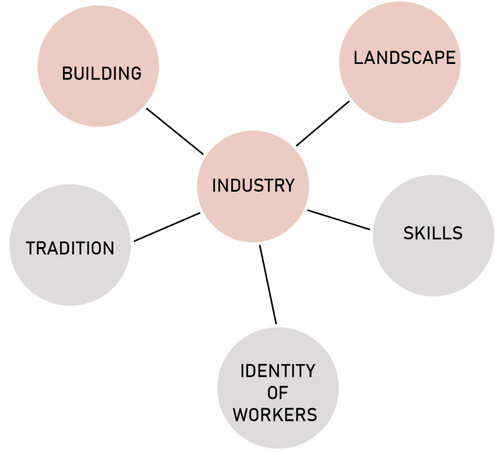


Fig.02. Diagram produced by the authors
Tangible and intangible elements that gives industrial heritage meaning

1.2 Historical Evolution of Industry and the City

Here we have the relationship between cities and industry that has evolved through four main phases:

Phase 1-The Industrial City (1750-1880)

This period marks the start of large-scale industrialization. With the introduction of steam power and automated production, industries clustered in cities to take advantage of labor, transport, and markets. In this phase, factories became urban landmarks, and industrialization reshaped city layouts, transforming compact merchant cities into compressed industrial masses. So far, this growth came at a cost: overpopulation and poor public health led to new debates about how production and living could coexist (Hoselitz, 1955; Rappaport, 2011).

Phase 2- The Search for the Ideal Industrial City (1880-1970)

Planners sought to balance industrial productivity with livable environments. The Garden City model by Ebenezer Howard envisioned self-contained towns integrating industry within a green urban structure (Howard, 1898). Other models, such as Tony Garnier's Cité Industrielle and the company towns of Pullman, Saltaire, and Essen, tested new spatial arrangements where work and housing coexisted more harmoniously. Over time, zoning became the dominant planning tool, charging the separation of industrial and residential functions, a type of separation that defined much of the 20th-century cities (Hatuka, 2011; Porteous, 1970).

Phase 3 Deindustrialization (1970s-2000s)

Globalization and technological shifts led to the decrease or relocation of manufacturing from Western cities. Large industrial zones were abandoned, leaving behind underused urban land and social disconnection. Industry moved to suburban or peripheral areas where land was cheaper, while city centers turned toward services, commerce, and culture. This phase deeply influenced urban regeneration strategies that focused on adaptive reuse of former industrial sites (Lever, 1991; Massey & Wield, 2004; Pike, 2009).

Phase 4- The Hybrid or Post-Industrial City (2000s-present)

With the emergence of cleaner, smaller-scale, and more flexible production, a new type of "industrial urbanism" have appeared. Advanced manufacturing, creative industries, and circular economies are reintroducing production into the city, which is challenging traditional zoning models. The hybrid city supports mixed-use environments where living, working, and making coexist, reducing commutation, strengthening local economies, and also restoring a material connection between citizens and production (Hatuka & Ben-Joseph, 2017; Schwab, 2015; Love, 2017; Rappaport, 2015).

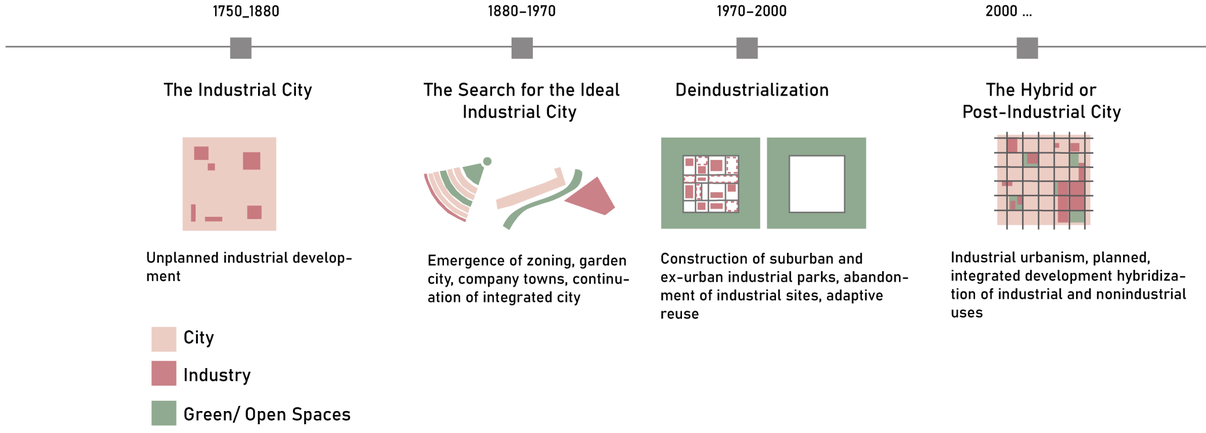


Fig.03. Industrial Development Patterns
Source: Hatuka, T., & Ben-Joseph, E. (2021). New Industrial Urbanism: Designing Places for Production and Innovation. Routledge.

1.3 Common Industrial Type
Patterns, Order and Geography

After the early twentieth century, the progress in transportation and the presence of the automobile changed the interaction between cities and production.
The presence of highways and cheaper truck shipping encouraged a horizontal expansion of industrial areas, leading to dispersed and varied spatial forms (Leigh & Hoelzel, 2012). Hatuka et al. (2014) identify three main spatial types that emerged over time—integrated, adjacent, and autonomous—each reflecting different planning philosophies and economic conditions.

1. Integrated Industrial Spaces (early 20th century – present)

Period: Appeared with the first wave of urban industrialization and remains visible in dense, mixed-use cities.

Key Idea: Living and working coexist; production is part of the city fabric.

Urban Effect: Generates local employment and compact growth, but also noise and traffic conflicts.

Examples:
Munich, Germany – BMW Werk München: founded in the 1920s, now surrounded by housing and commerce; expanded vertically after the 1970s.

2. Adjacent Industrial Spaces (mid-20th century)

Period: emerged with zoning-based modern planning that sought to separate housing and industry.

Key Idea: Physical separation yet geographical proximity; industries remain tied to city labor and infrastructure.

Urban Effect: Creates a buffer between production and residence; still economically linked but socially distant.

Examples:

Kiryat Gat, Israel – Intel plant: large high-tech industrial zone east of the city, spatially detached from residential districts.

3. Autonomous Industrial Spaces (late 20th century – present)

Period: Expanded after the 1970s with globalization and automobile dependence.

Key Idea: Large, stand-alone industrial parks located near highways, ports, or airports; minimal relation to the city.

Urban Effect: Encourages regional growth but isolates workers and weakens older urban districts.

Examples:
Lordstown, Ohio – General Motors Assembly (1966): self-contained complex surrounded by farmland and highways.

Overall Trends

Across these types, three long-term dynamics are evident:

Shift of industry away from city centers toward suburban or regional zones.

Centralization of management under large multinational corporations controlling entire industrial parks.

Rise of specialized, high-tech, and globally oriented environments designed as clean, context-free campuses.

These developments trace the movement from the integrated industrial city of the early 1900s to the autonomous industrial landscapes of today, revealing how production has gradually detached from everyday urban life—and why reconnecting them is a core challenge for contemporary sustainable urbanism.

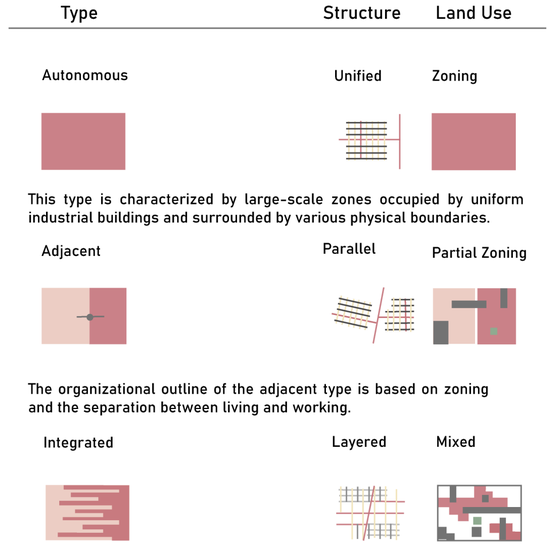


fig.04. Common Industrial Type: Patterns, Order and Geography
Source: Hatuka, T., & Ben-Joseph, E. (2021). New Industrial Urbanism: Designing Places for Production and Innovation. Routledge.

1.4 What We Mean by Active Industry

In this thesis, the term active industry refers to industrial areas where production is still operating, where companies continue to manufacture, repair, assemble, process, or distribute goods on a daily basis. Unlike post-industrial sites—which have been abandoned, relocated, or transformed into cultural or mixed-use districts—active industrial neighborhoods remain fully functional parts of the contemporary urban economy.

Why we study active industrial neighborhoods?

We chose active industrial neighborhoods because they represent a critically under-explored field in urban regeneration. Unlike post-industrial areas, they remain economically productive and embedded within the city, yet face growing challenges of spatial disconnection, social fragmentation, and ecological separation. Research shows that industrial morphology, logistics, safety needs, and mono-functionality create unique isolation patterns that cannot be addressed through conventional post-industrial strategies (Douet, 2012; Hatuka & Ben-Joseph, 2021; Chertow, 2007).
By studying two very different urban contexts—Turin's compact grid and Luleå's dispersed Nordic structure—this thesis examines how similar problems emerge from different causes and therefore require context-sensitive regenerative strategies.

Why This Distinction Matters for the Thesis?

Active industrial districts require different regenerative strategies because:

_Industry cannot be displaced
_Industry cannot be interrupted
_Noise, logistics, and safety must still function
_Streets and edges must support both productive and public uses

This is why case studies like Vanchiglietta (Turin) and Ytterviken (Luleå) offer important insights: both are productive territories that must remain productive, yet they suffer from isolation, fragmentation, and weak urban integration.

1.5 Regenerative Design

Concepts and Frameworks

The concept of regenerative design moves beyond sustainability's aim of "doing less harm" toward actively restoring, renewing, and revitalizing ecological, social, and economic systems. Rather than stabilizing existing conditions, regenerative design seeks to enhance the capacity of living systems — including cities — to evolve and thrive.
(Lyle, 1994; Mang & Reed, 2012; du Plessis & Brandon, 2014)

In an urban context, this means interventions that do not only mitigate negative impacts, but strengthen the long-term ability of neighborhoods, infrastructures, and communities to remain resilient and productive.
(Gibbons, 2020)

Key principles of regenerative design include:
1. Systems Thinking

Recognizing cities, neighborhoods, and industrial areas as dynamic, interdependent networks of people, ecosystems, infrastructures, and economies. Regenerative design works with whole-system relationships rather than isolated components.
(Capra & Luisi, 2014; Mang & Haggard, 2016)

2. Place-Based Design

Solutions must emerge from the unique ecological, cultural, and historical characteristics of each place, rather than applying universal or prescriptive strategies.
(Mang & Reed, 2012; du Plessis, 2012)

3. Co-Creation and Participation

Regenerative processes require ongoing participation from local actors — residents, workers, industries, planners — to shape shared goals and foster ownership. This collaborative method strengthens long-term stewardship.
(Gibbons, 2020; Lyle, 1994)

4. Long-Term Adaptability and Future-Proofing

Regenerative design emphasizes adaptability, enabling buildings, landscapes, and infrastructures to evolve as social or ecological conditions change.
(Haggard & Mang, 2007)

5. Positive Contribution (Net Positive Performance)

Instead of only reducing harm, regenerative systems aim for net-positive impacts: enhancing biodiversity, improving public health, strengthening social cohesion, creating circular resource flows, or restoring ecological functions.
(du Plessis & Brandon, 2014; Living Futures Institute, 2012)

1.6 Regenerative Approaches in Urban and Industrial Contexts

Regenerative approaches in urbanism have gained significant attention in recent years, especially in post-industrial contexts where large-scale deindustrialization has left behind obsolete factories, ports, and infrastructures (Doucet et al., 2011; Rius-Ulldemolins & Gisbert Oñate, 2018). Many well-known regeneration projects—such as HafenCity in Hamburg, the 22@ Innovation District in Barcelona, or King's Cross in London—demonstrate how abandoned industrial sites can be reimagined as cultural hubs or mixed-use districts.

However, the situation becomes fundamentally different when industry is still active. Instead of replacing industry with new programmatic layers, the challenge is to rethink how production can coexist with urban life (Hatuka & Ben-Joseph, 2014; Boix et al., 2015). This requires regenerative strategies that enhance environmental performance, spatial permeability, and human-centered use without compromising industrial operations.

Cities such as Zurich, Copenhagen, Amsterdam, and Vienna have begun experimenting with such models, exploring how productive functions can remain within the city rather than being relocated to the periphery (MA18 Vienna, 2019; Amsterdam Municipality, 2018; Stadt Zürich, 2020). These examples show that coexistence between industry and urban life is possible, but most initiatives remain pilot projects or small-scale interventions.

For this reason, studying active industrial neighborhoods—and exploring how regenerative design can be adapted to their specific constraints and opportunities—is essential (du Plessis, 2012; Mang & Reed, 2012; Gibbons, 2020). This thesis positions regeneration not as a post-industrial tool but as a proactive strategy for enabling healthier, more connected, and resilient industrial districts while keeping production alive in the city.

1.7 Regenerative Design as a Comparative Framework

Regenerative urbanism offers not only a set of design principles, but also a methodological lens for understanding why different urban contexts require different strategies. Unlike traditional regenerative approaches applied to post-industrial landscapes, regenerative development emphasizes place-based thinking, systems understanding, and context-specific interventions (Mang & Reed, 2012; du Plessis, 2012). This makes it particularly suitable for comparing active industrial neighborhoods that share similar challenges but originate from different morphological, ecological, and social conditions.

A regenerative framework supports comparison in three fundamental ways:

1. It focuses on underlying causes, not only visible problems.

Both Turin and Luleå exhibit spatial disconnection, social fragmentation, and fragmented green networks. However, regenerative theory stresses that problems emerge from the relationships within the system, not from the elements alone.
This allows us to analyze how different urban morphologies generate different forms of the same challenges.

2. It requires place-based strategies rather than universal solutions.

Regenerative design argues that interventions must emerge from the unique characteristics of each place — its history, morphology, climate, ecosystems, and human dynamics (Mang & Reed, 2012).

Therefore, the comparative analysis is not searching for a single transferable solution, but rather examining how the same goal (urban reconnection) must adapt to different contexts.

3. It introduces a multi-dimensional lens: spatial, social, ecological.

Regenerative design defines thriving neighborhoods as those where ecological systems, social systems, and urban form reinforce each other (Gibbons, 2020).
This aligns directly with the three KPIs used in this thesis:

_spatial disconnection
_social fragmentation
_fragmented green networks

Thus, the regenerative approach forms both the analytical structure and design direction.

4. It shifts the focus from "repairing" to "enabling potential."

Regenerative thinking encourages understanding what each place can become, not just what is missing.
This helps differentiate between:

Turin, where regeneration must overcome historical barriers and reconnect a dense urban fabric

Luleå, where regeneration must leverage natural assets and prevent future disconnection in a polycentric environment

1.8 Gaps in the Literature

Although the relationship between cities and industry has been widely studied, there are several important gaps in the existing researches.

1. Limited focus on active industrial areas

Most literature on industrial regeneration concentrates on post-industrial sites—abandoned factories, decommissioned ports, or brownfields (e.g., Chertow 2007; Couch et al., 2011).
These studies analyze adaptive reuse, cultural transformation, and redevelopment after production has ceased.

Much less attention is given to industrial areas that remain operational, where production, logistics, and repair activities still occur.
The unique challenges of coexistence—noise, heavy traffic, safety, spatial permeability, social integration—are not fully explored.

2. Lack of frameworks for integrating industry into the contemporary city

While emerging European examples (e.g., Copenhagen, Amsterdam, Zurich) test coexistence models, they remain pilot projects. There isn't widely adopted planning framework that explains:
how active industrial zones can be spatially reconnected,
how to reduce their social fragmentation,
how to integrate ecological systems without displacing production.

The gap is especially visible in small- and medium-scale industrial districts.

3. Limited comparative studies across different urban morphologies

Industrial regeneration research tends to focus on a single city or region, rarely comparing how the same types of problems (isolation, ecological fragmentation, social disconnection) manifest differently in different morphological contexts.

There is a gap in understanding:

How compact, historical cities (e.g., Turin) experience industrial isolation vs.

How dispersed, polycentric, landscape-driven cities (e.g., Luleå) experience the same issue.

Comparative analyses between contrasting urban forms are rare, especially regarding active industrial neighborhoods.

4. Lack of context-sensitive regenerative strategies

Regenerative design literature proposes high-level principles—systems thinking, co-creation, net-positive outcomes (Mang & Reed 2012; du Plessis 2012)—but few studies operationalize these principles in active industrial districts.

Specifically missing are:

methods for adapting regenerative strategies to different morphologies,

design tools for balancing industrial functioning with urban integration,

frameworks for translating regenerative principles into spatial interventions.

5. Insufficient attention to social fragmentation in industrial neighborhoods

While environmental and economic impacts are well documented, social dynamics in industrial districts—workers, residents, daily users—are understudied.
Many studies overlook:

how social fragmentation differs across urban typologies,
how user behavior influences regeneration potential,
how active industry shapes (and limits) social life.

6. Ecological fragmentation in active production areas is rarely examined

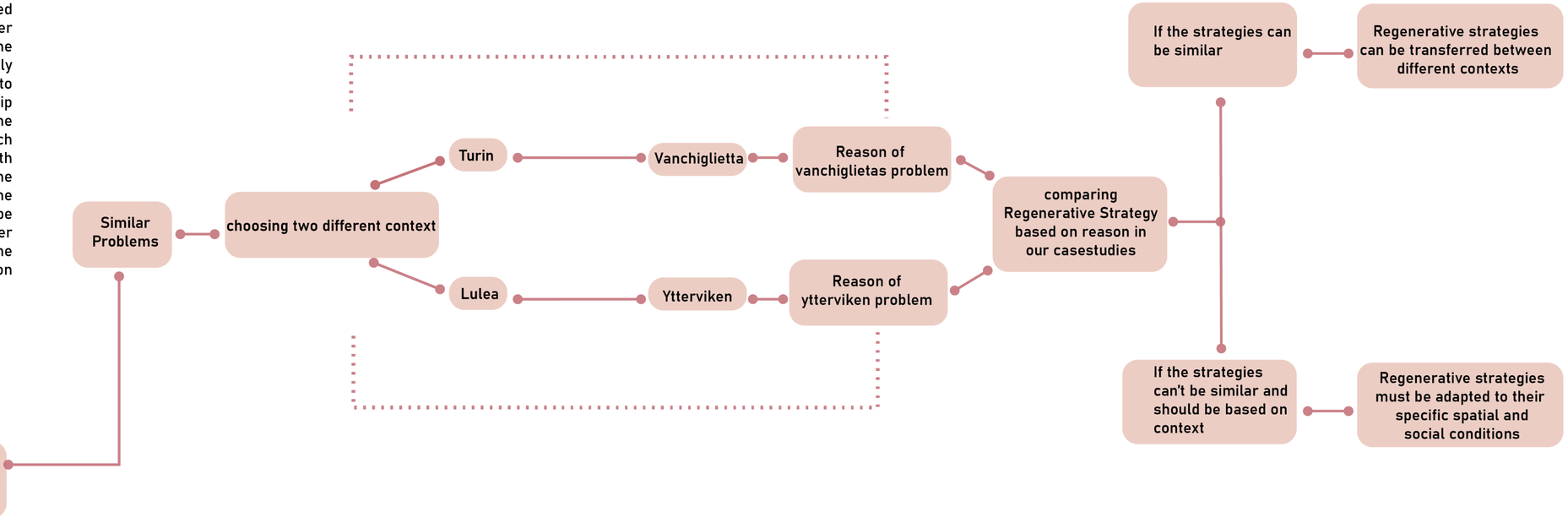
Existing green infrastructure research focuses on parks, corridors, and urban forests, but not on working industrial lands, where biodiversity, pollution buffering, and climate resilience are often weakest.

There is limited research on:

how industrial functions disrupt ecological continuity,
how green infrastructure can be integrated without compromising operations,
how ecological strategies differ in contrasting climates (Mediterranean vs. Arctic).

1.9 General concept and framework of Thesis

In this section, we explain the conceptual framework of our thesis using the insights gained from the literature review. The question is how different urban contexts influence the strategies required to integrate active industrial neighborhoods into the city. To find the answer to this question, we identified two neighborhoods that share a common problem; both suffer from a lack of integration with the urban fabric. Although the problem is shared, the two case studies are intentionally selected from different urban contexts. This helps us to compare these two case studies to find the relationship between cities and the problem of these neighborhoods and the potential answer. The process starts with studying each neighborhood to find the causes of its lack of integration with the city, and these causes become the foundation of the regenerative strategies. After this step, we compare the strategies to understand whether the strategies should be highly context-sensitive or if they can be used for the other neighborhood. This framework evaluates not only the neighborhoods but also the cities and their role in reintegration and revitalization of these neighborhoods.

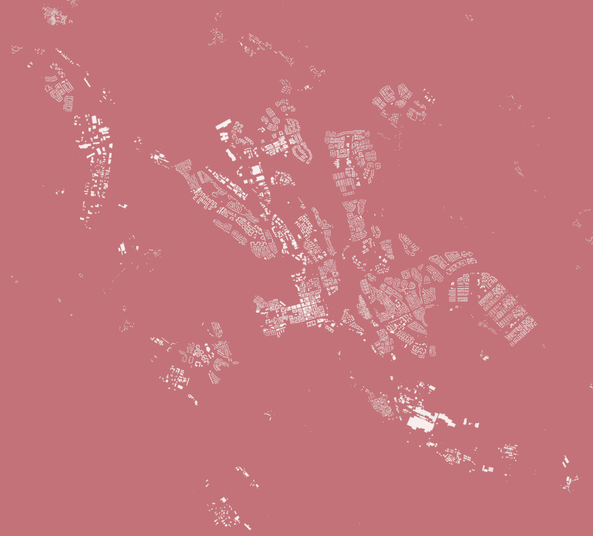


02

SITE SELECTION AND CONTEXTUAL ANALYSIS

n this chapter, we introduce the sites and their urban context.
We start from the urban scale to understand and analyze the cities of Turin and Luleå, and in the next step, we introduce and analyze the neighborhoods of Vanchiglietta and Ytterviken.

Turin



Lulea

URBAN SCALE

2.1 Introduction to the Case Studies

As discussed in Chapter 1, this thesis investigates how active industrial neighborhoods can be regenerated in ways that respond to their specific urban contexts. To explore this question, the research examines two distinct case studies located in contrasting morphological, climatic, and spatial conditions:
Vanchiglietta in Turin (Italy) and Ytterviken in Luleå (Sweden).

Although both neighborhoods contain active industrial functions and experience similar challenges—spatial disconnection, social fragmentation, and fragmented green networks—the reasons behind these challenges differ significantly. This chapter introduces the two cities and the selected case-study areas to establish the contextual background necessary for the comparative analysis.

The chapter begins with an overview of Turin and Luleå at the urban scale, focusing on their historical development, industrial evolution, morphological structure, and current spatial dynamics. It then presents the two case-study neighborhoods, outlining their physical characteristics, land-use patterns, environmental conditions, and user profiles.

By situating Vanchiglietta and Ytterviken within their broader urban contexts, this chapter provides the foundation for understanding how industrial areas behave differently across cities, and why context-sensitive regenerative strategies are necessary. The site descriptions that follow form the baseline for the comparative framework developed in Chapter 3 and the design proposal in Chapter 4.

2.2 Why Turin and Luleå?
Case-Study Selection Rationale

The selection of Turin and Luleå is connected to the morphological intention of this thesis: to examine whether it is possible to transfer regenerative strategies for active industrial neighborhoods across different urban contexts, or whether these strategies should be adapted to each context and its local morphological, social, and ecological conditions.

To find the answer to this question, it was essential for us to choose cities that:

both have industrial characteristics,

share similar problems, and

are strongly different in the structural conditions that produce those problems.

Turin and Luleå offer this combination. Both cities are industrial cities, and most of the industrial neighborhoods in them share similar problems such as isolation. At the same time, they are very different from the point of view of urban morphology: Turin is a compact, historically layered, grid-based European city, where industrial areas are within the continuous urban fabric. Luleå, on the other hand, is a dispersed, polycentric Nordic city shaped by climate, topography, and a modern planning logic of separated functions.

They also differ in terms of industrial trajectories. Turin is a post-industrial city undergoing long-term structural transformation; many former industrial areas are abandoned or have undergone adaptive-reuse strategies. Luleå, however, still relies on active industry as a central part of its economy, with ongoing steel, storage, and technology-related production.

The combination of these differences, together with their industrial backgrounds, helps us through the comparative analysis to identify the reasons behind each problem that the districts are facing, and as a result, to find the appropriate regenerative strategies and understand the limits of transferability

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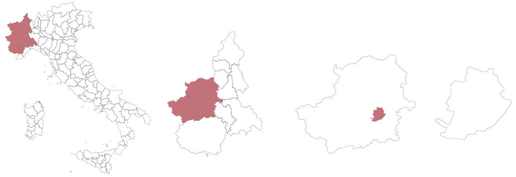
2.3 Turin

fig.05. Turin Source:Morosinotto, 2020

Turin is the capital of the Piedmont region in northern Italy, historically recognized as an industrial powerhouse, particularly during the 20th century with the rise of FIAT and the automotive sector. Its urban form and socio-economic development were significantly shaped by industrialization, followed by a phase of deindustrialization that left many neighborhoods fragmented and underutilized



	Italy	Piemonte Region	Province of Turin	Turin
Total land area		~25.386,7km²	~6.827km²	~130,01km²
Total inhabitants		~4.251.623	~2.211.114	~848.748

fig.06. are and population. Source: ISTAT. (2024, June 2).

2.3.1 General Information

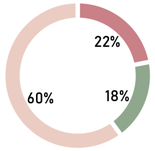


fig. 07. Age Structure of Turin's Population
Source: ISTAT. (2024, June 2)

Over 65
Age 20-65
Under 20

20 sqm per person public space

fig.08. Total square meters of public space per inhabitant
Source: Comune di Torino. (2021)

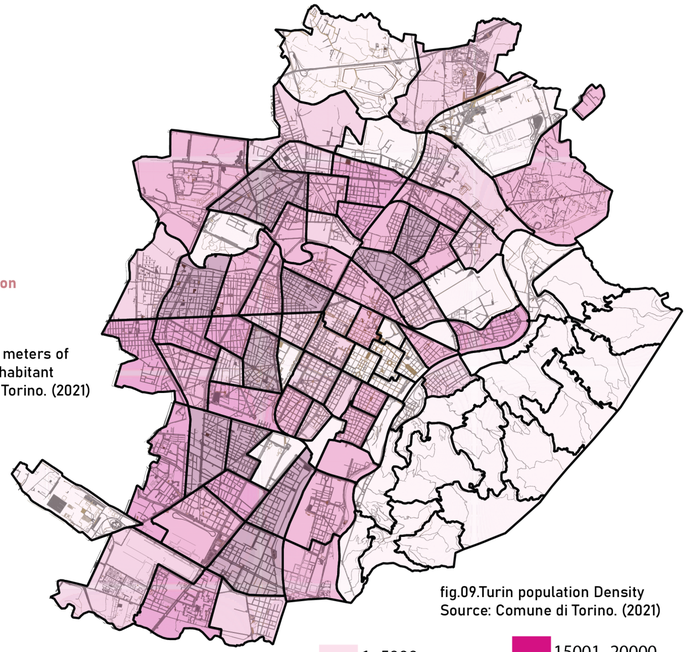


fig.09.Turin population Density
Source: Comune di Torino. (2021)

According to a report by the Comune di Torino, as of December 31, 2021, Turin's population density is approximately 6,526 inhabitants / km². The high density number shows turin's compact urban form .

2.3.2 Historic Urban Development

Turin's urban evolution reflects its transformation from a Roman camp to a Baroque capital and later into one of Italy's major industrial cities.

Roman and Medieval Foundations.
Founded as Augusta Taurinorum in 28 BC, Turin was designed with a Roman orthogonal grid that still shapes the historic center today (Rossi, 1999; Caravello, 2011). During the Middle Ages, the city remained compact and fortified, expanding slowly while preserving narrow streets and small blocks—most visibly today in the Quadrilatero Romano (Comoli Mandracci, 1995).

Baroque Expansion.
In the 17th–18th centuries, Turin underwent major growth as the capital of the House of Savoy. Architects such as Guarini and Juvarra introduced monumental squares, axial boulevards, and porticoed streets, establishing the Baroque order and walkable urban character that define the city's identity (Portoghesi, 1998; Vitale, 2018).

Industrial Transformation (19th–20th Century).
After Italian unification in 1861, Turin industrialized rapidly. New factories, rail infrastructure, and workers' housing expanded the city toward the north and east, creating an industrial belt that contrasted with the historic core (Bagnasco & Pini, 2010; Bonfantini, 2017). This period laid the foundation for the spatial and social divisions that later shaped Turin's post-industrial challenges.

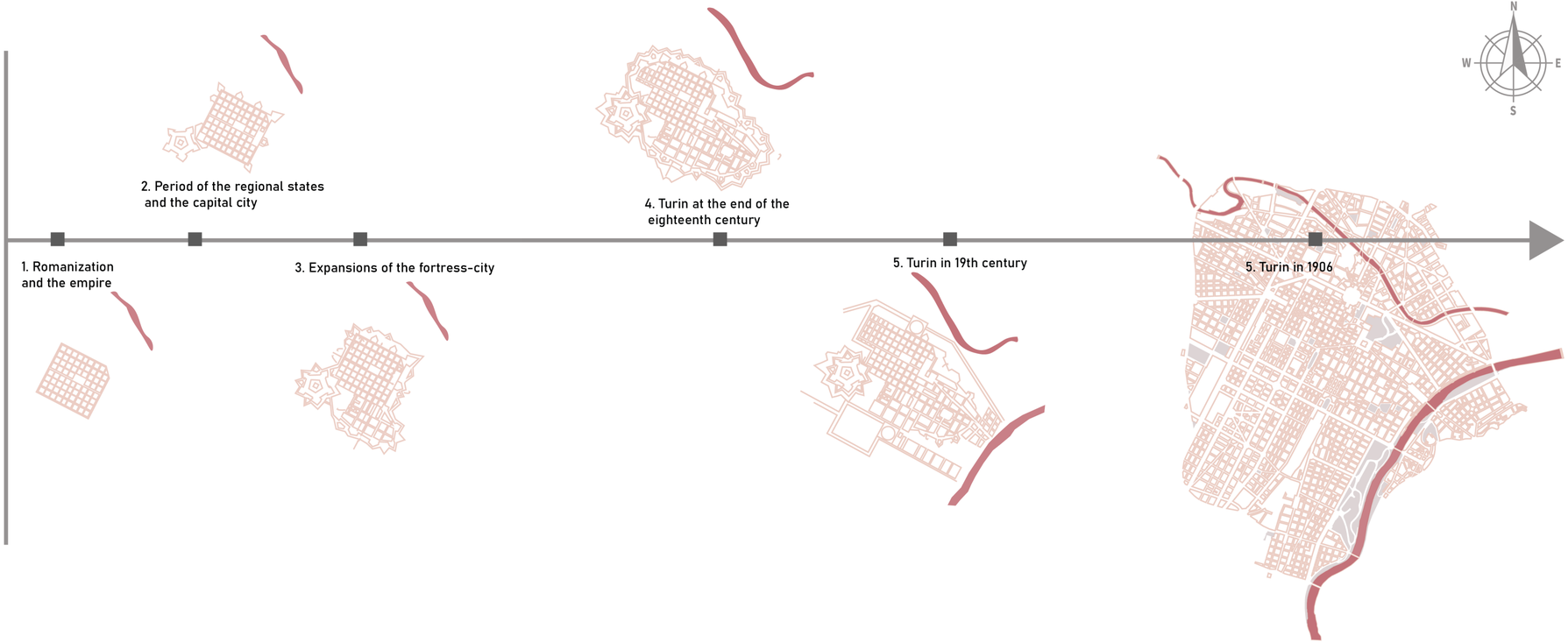


fig.10. Timeline_Historic Urban Development Of Turin Source: Cultor. (2021)

2.3.2 Historic Urban Development

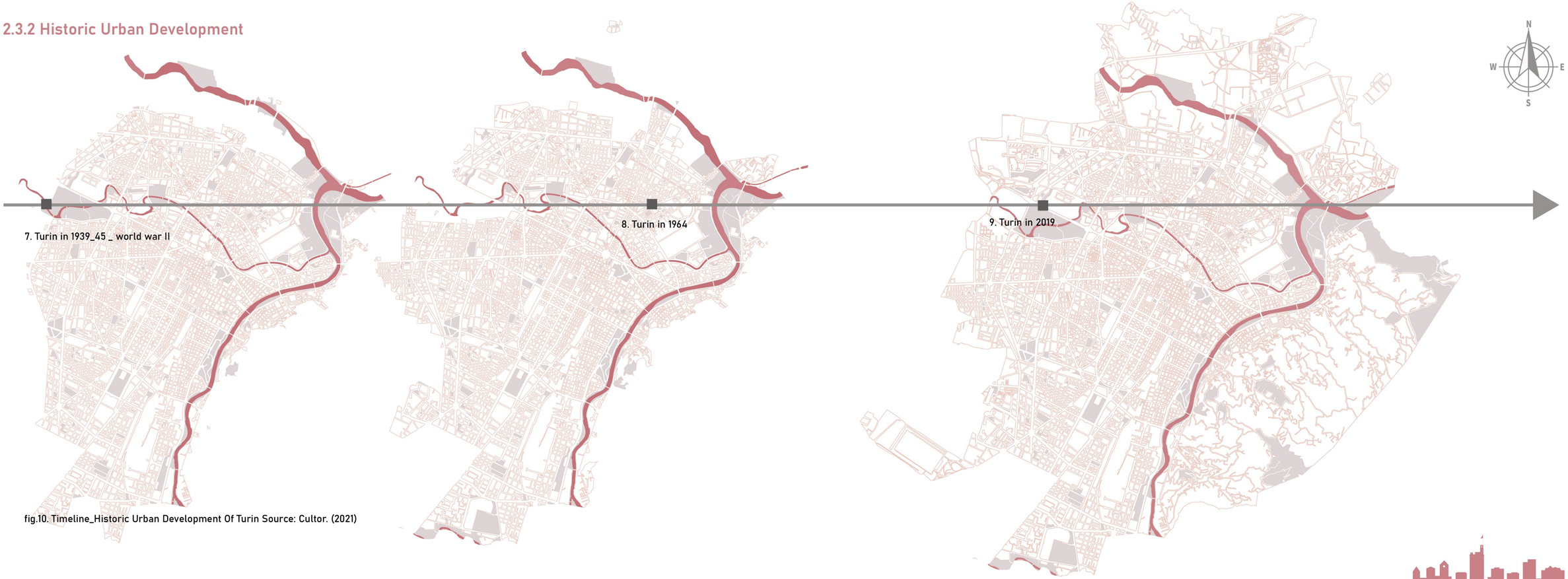


fig.10. Timeline_Historic Urban Development Of Turin Source: Cultor. (2021)

2.3.3 urban form: Built and street network

Turin: a compact, grid shape city

When we look at the built and Network map of Turin, we can understand that its urban form is **Compact, continuous**. The city core still shows its Roman castrum grid shape, and even later expansions continued this shape. Beyond the historic center, industrial expansion also followed the same compact logic with **closed blocks**, **narrow streets**, and **dense built edges**. This creates small blocks, walkable distances, and clear, readable spaces. Turin's connectivity system also complements its compact form. The city shows dense walkable streets, high pedestrian permeability of pedestrians, and several intersections. Another advantage of the urban form of Turin is offering multiple points of access to most neighborhoods, making urban movement easier and more flexible.

fig.11. Built Map of Turin (GIS-based) Scale:1/100,000
Source:(Città Metropolitana di Torino, n.d.)

fig.12. Built Map of Turin (GIS-based)
Scale:1/100,000
Source:(Città Metropolitana di Torino, n.d.)

2.3.4 The morphology

The morphology of urban blocks in Turin
can indeed be categorized into three distinct types:

Perimetral Blocks (Closed Blocks) :Buildings form a continuous perimeter around the block, enclosing internal courtyards.
Characteristics: 1. A balance between spatial continuity and openness. 2. Encourages a dialogue between buildings and their context, often incorporating semi-public spaces.

Open Blocks (Freestanding Buildings) : Buildings are independent structures placed within the block, with no continuous perimeter. Open spaces dominate, often used for gardens, parking, or undefined communal areas.
Characteristics: 1.Lack of visual or spatial continuity in the urban fabric. 2.Often associated with modernist planning and suburban developments. 3.Large setbacks from streets, with reduced interaction between buildings and pedestrians.

Hybrid Blocks: A mix of the perimetral and open block types.
Buildings partially define the edges of the block while leaving significant open spaces, creating opportunities for interplay between built structures and empty areas.
Characteristics: 1. A balance between spatial continuity and openness. 2.Encourages a dialogue between buildings and their context, often incorporating semi-public spaces.

2.3.5 Industrial Development

1. Roman and Baroque Foundation (Up to 18th Century)
Turin began as the Roman Augusta Taurinorum with a grid plan. It was transformed in the 16th–18th centuries into a Baroque capital under the House of Savoy, marked by axial roads, squares, and royal monuments.

2. Early Industrial Growth (19th Century)
Following the Napoleonic era, Turin expanded with rail infrastructure and early factories, particularly along the Dora River. Residential areas grew to support the proto-industrial economy.

3. Industrial Boom (1880s–1970s)
Turin became Italy's industrial heart, led by Fiat. New neighborhoods like Mirafiori and Lingotto emerged, shaped by grids, zoning, and railway lines. The urban form grew rapidly, especially southward and northward.

4. Deindustrialization (1970s–1990s)
Factory closures triggered economic decline, unemployment, and urban fragmentation. Large industrial zones and rail yards were abandoned, and parts of the periphery became marginalized.

5. Post-Industrial Regeneration (2000s–Today)
The 2006 Winter Olympics catalyzed urban renewal. Former industrial areas were transformed into cultural and residential zones. Green infrastructure, public transport, and adaptive reuse became central to Turin's sustainable vision.

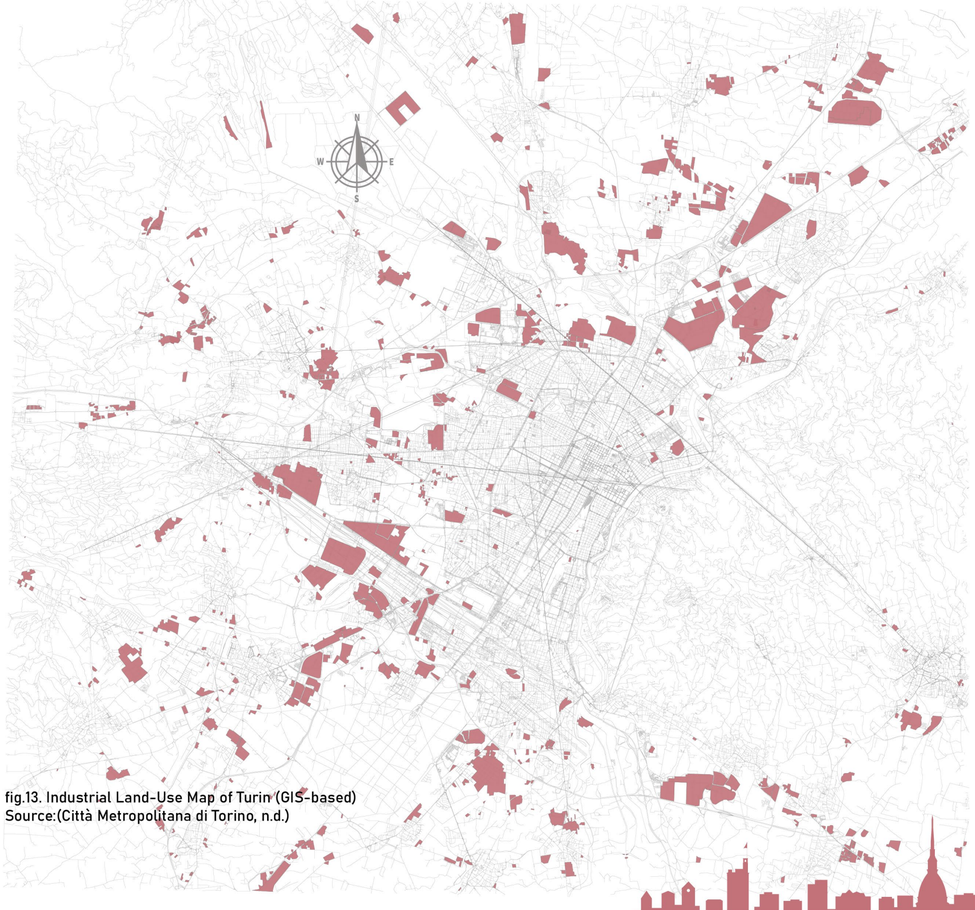


fig.13. Industrial Land-Use Map of Turin (GIS-based)
Source:(Città Metropolitana di Torino, n.d.)

2.3.6 Natural Landscape Layers: Green Areas and Watercourses

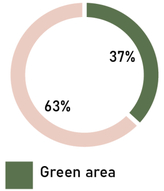


fig.14. Green area percentage
Source: Comune di Torino. (2021)

fig.15. Total number of trees in urban and forest contexts
Source: Comune di Torino. (2021)

When we look at the natural landscape map of the turn, we see the strong presence of greenery, water, and the surrounding landscape. The Po River forms the city's southeastern edge, while the Dora River crosses the northern part of the city. Together, they create a system of river corridors that, in the past they supported the industry and now they structure the ecological networks. Along the Dora River, Turin has developed a series of linear parks, and Parco Colletta (near Vanchiglietta) is one of the major green areas. The city also benefited from the natural hills to the east that made forested slopes and panoramic viewpoints.

fig.16. Green land use map of Turin Source:Comune di Torino.

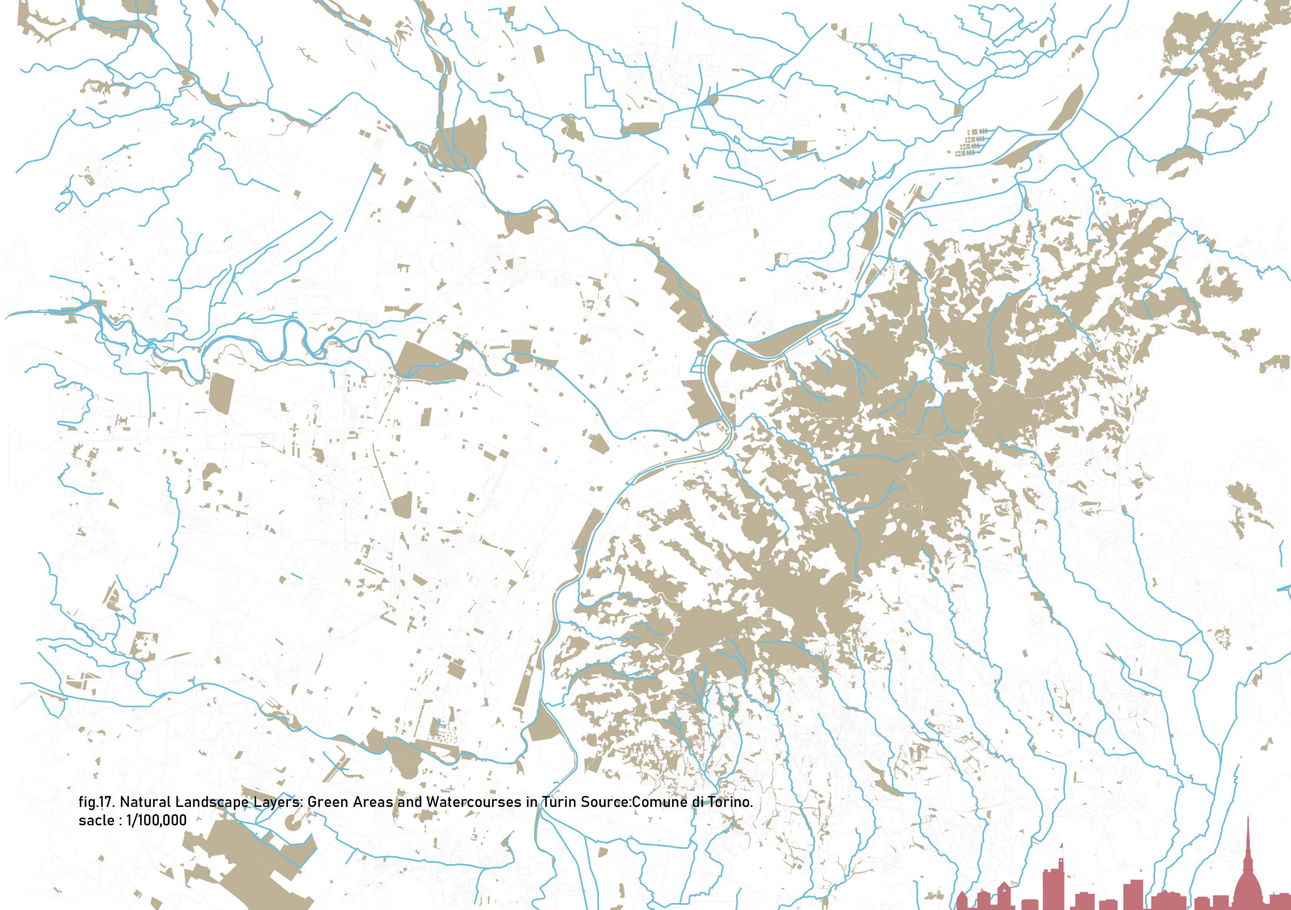
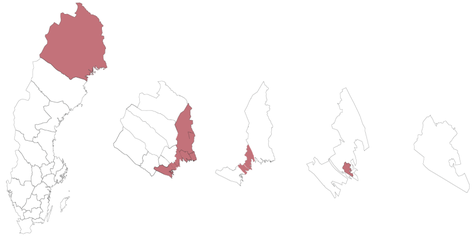


fig.17. Natural Landscape Layers: Green Areas and Watercourses in Turin Source:Comune di Torino.
sacle : 1/100,000

2.4 Luleå

fig.18. Turin Source:(Luleå kommun, n.d.)

Luleå Capital of Norrbotten County and located just below the Arctic Circle in northern Sweden.
As the capital of Norrbotten County, Luleå has evolved from an industrial port town into a hub for digital innovation and sustainable development. This transformation, coupled with its compact urban form and challenges of fragmentation, makes it a compelling context for this research.



	Sweden	Norrbotten County	Luleå kommun	Luleå (city)
Total land area			2.110 km²	~29,09 km²
Total inhabitants			~79.645	~48.728

fig.19. Population and land area
Source:(Luleå kommun, n.d.)

2.4.1 Genral Information

Fig. 20. Luleå — Ice track on the bay.(Visit Luleå, n.d.)

Fig. 21. Luleå — The Northern Lights. (Visit Luleå, n.d.)

fig.22. In Luleå (Sweden), a frozen river becomes an accessible playground for all winter activities. Photo: C. I. Beaulé, 2018.

2.4.2 Historic Urban Development

Luleå was first founded in Gammelstad in 1621, but rapid land uplift made the harbor too shallow, leading to the relocation of the town to its current coastal site shortly afterward (UNESCO, 1996; Ranta, 2010). The new settlement grew slowly through the 1600s–1700s, facing repeated fires and economic hardship, yet key civic buildings—such as the 1667 church—helped consolidate its urban core (Forsberg, 2004).

During the 19th century, Luleå strengthened its regional importance with the arrival of the County Administrative Board in 1857 and the formal establishment of municipal governance in 1864. Maritime trade and port activity supported steady growth (Luleå Municipality, 2019).

The 20th century brought major modernization: a public water system (1905), bridges and transport upgrades (1950s), and suburban housing development. The 1969 municipal reform unified Luleå, Gammelstad, and surrounding settlements, while the founding of Luleå University of Technology in 1971 reshaped the city's structure (Luleå University Archives, 2020).

Since the 2000s, Luleå has expanded through digital industries, renewable energy, and Arctic urban development, reaching over 78,000 residents by 2019 (Statistics Sweden, 2020). Today, the city balances its historic roots with a dispersed, polycentric Nordic urban form.

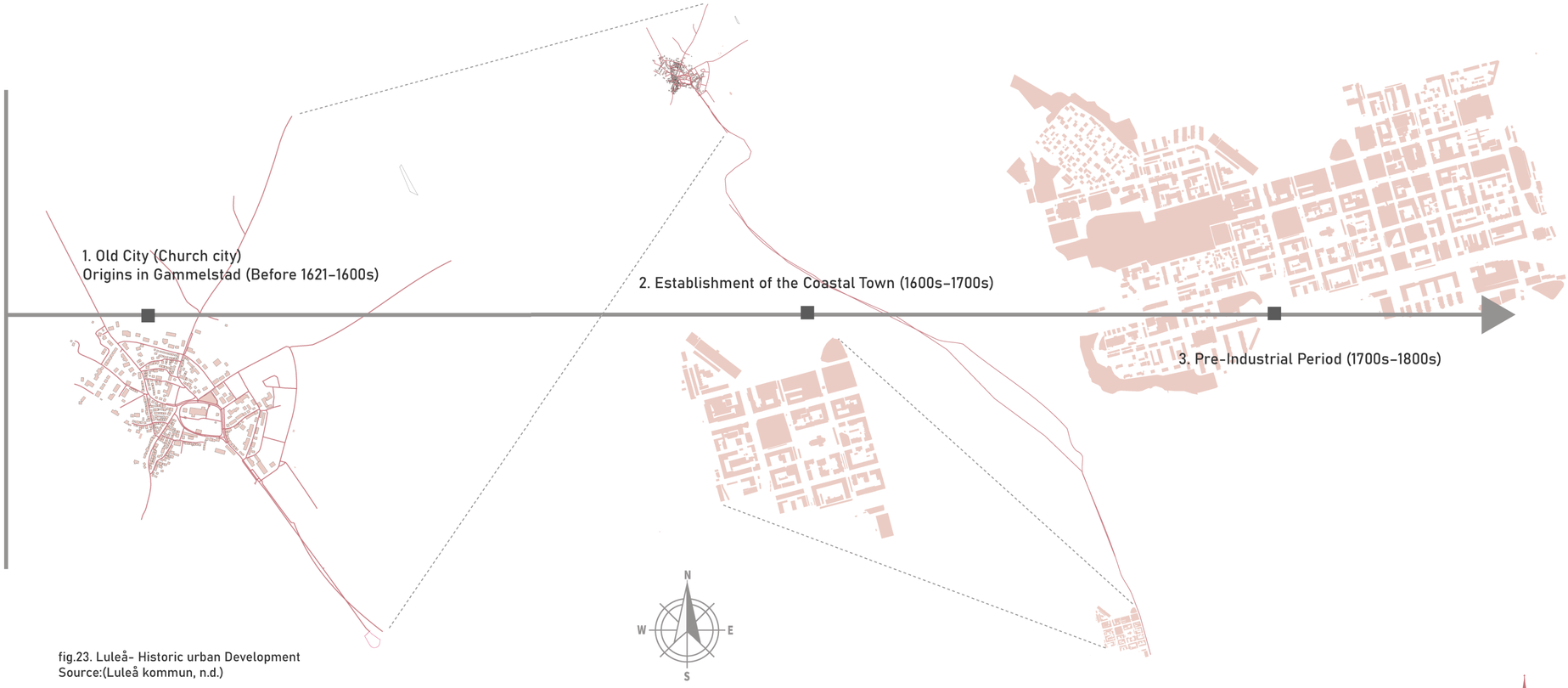


fig.23. Luleå- Historic urban Development
Source:(Luleå kommun, n.d.)

2.4.2 Historic Urban Development

4. Modernization and Social Expansion (1900–1960)

5. Municipal Integration & Suburban Growth (1960–1970)

6. Contemporary Arctic Urban Identity (2000–Today)

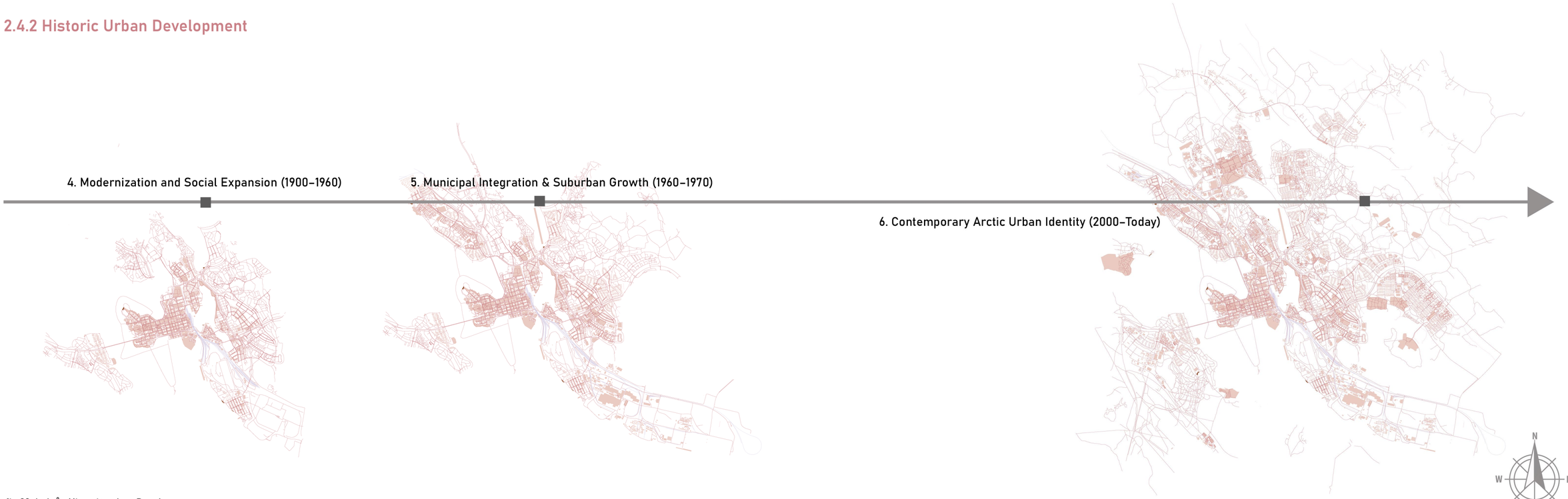


fig.23. Luleå- Historic urban Development
Source:(Luleå kommun, n.d.)

2.4.3 Urban form: Built and street network

When we look at luleå's built map, we can see that luleå is not a compact city like Turin. Its built areas are distributed into distinct nodes that are separated by forests and water. There are several natural separators in its urban pattern, which lead to its dispersed built form. It has multiple centers, such as the city center and university, with large distances between residential, industrial, and commercial zones. It shows suburban-style housing with low building heights and large plot sizes. What is interesting in the road network structure of luleå is its seasonal dependence, meaning winter conditions shape movement patterns. In winter, when the water is turned to ice, it would be walkable so many areas that were not connected during summer, in winter become connected.

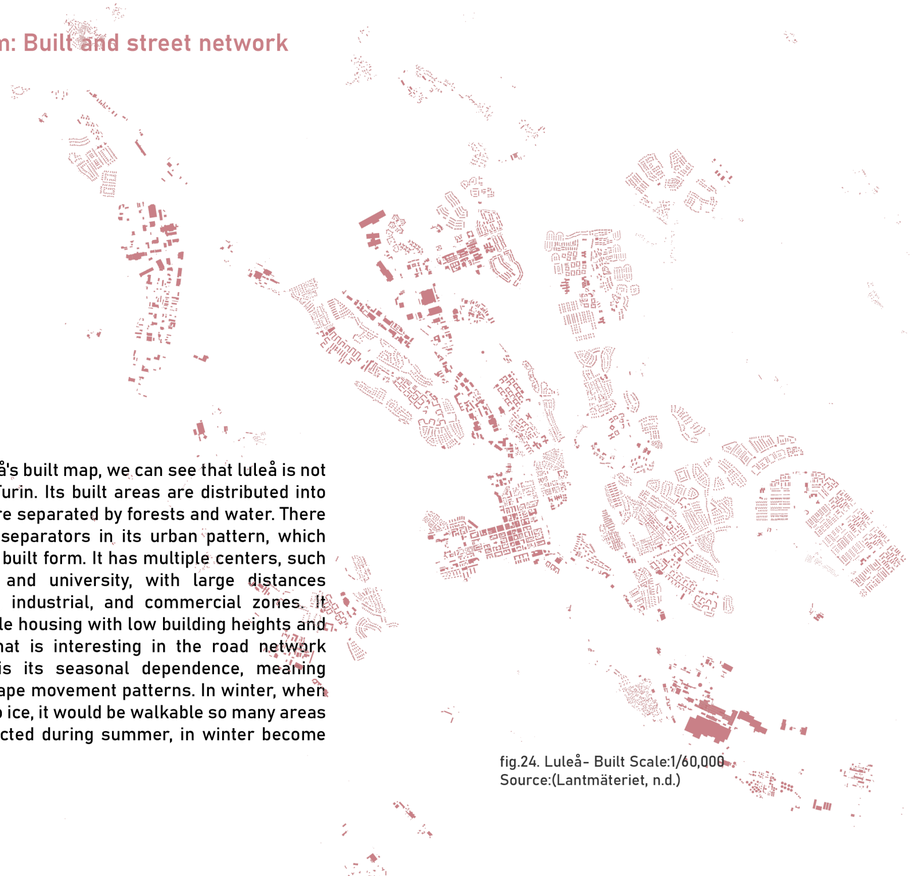


fig.24. Luleå- Built Scale:1/60,000
Source:(Lantmäteriet, n.d.)

fig.25. street network map of Luleå. Scale :1/60,000
Source:(Lantmäteriet, n.d.)

2.4.4 The Morphology

Luleå presents a complex and highly varied urban morphology, characterized by a mosaic of distinct urban tissues that reflect different historical periods, planning philosophies, and land-use requirements. The figure–ground analyses included in the Urban Compendium reveal how each district contributes to the city's spatial structure, resulting in a fragmented yet richly diverse urban form.

1. Historic Grid Core (City Centre – Centrumhalvön)

The centre of Luleå forms the most coherent part of the city, organized around a rectilinear grid with compact blocks and a concentration of commercial and public functions. This area provides the strongest legibility and walkability in the city and acts as the primary civic anchor.

2. Organic Historic Worker District (Svartöstaden)

Adjacent to the harbour, Svartöstaden contains narrow streets, irregular plots, and small-scale housing originally built for industrial workers. This tissue contrasts sharply with the grid and reflects Luleå's industrial origins.

3. Large-Scale Industrial Fabric (Svartön / Harbour Area)

Next to Svartöstaden lies one of the city's most dominant morphological elements: extensive industrial plots with large buildings and open operational surfaces. This creates strong physical barriers and deeply influences mobility patterns.

4. Modernist and Suburban Tissues (1950s–1980s districts)

Neighborhoods such as Mjölkudden, Örnäset, Lulsundet, and Bergnäset follow curvilinear street systems, cul-de-sacs, and dispersed building typologies. These areas have abundant green space but limited spatial continuity, contributing to weak inter-district connections.

5. Miljonprogrammet Fabric (Hertsön)

Hertsön features standardized building blocks, a hierarchical street network, and clear functional separation. Internally coherent but externally isolated, it reflects national planning policies rather than local morphology.

6. Institutional–Industrial Hybrid (Porsön and University Area)

Porsön combines university buildings, residential zones, and industrial storage areas. The structure is large-scale, segmented, and dependent on major roads.

7. Mono-Functional Commercial Zone (Storheden)

A peripheral commercial district characterized by large retail boxes and parking surfaces, further contributing to the city's fragmented pattern.

Source: URBAN COMPENDIUM
Theory and Practice in Urban Morphology
Edited by Stefano Tornieri
Luleå University of Technology

2.4.5 Industrial Development

1. Early Industrial Seeds (Late 1700s – Mid-1800s)
Industrial activity began with Selets bruk and Melderstein iron-ore collaborations in the late 1700s, marking the first introduction of resource-based production in the region. This laid foundations for a future mining–harbor economy.

2. Harbor Construction & Transport Revolution (1880s)
Industrial Luleå truly emerged with:

1883 – Construction of the iron ore harbor
1888 – First train carrying iron ore from Gällivare arrives

This railway–harbor axis transformed Luleå into a strategic export port for northern Sweden's mining industry. Urban development followed the harbor's expansion, shaping neighborhoods and labor settlements.

3. Heavy Industry & Steel Era (1900–1960)
The industrial profile intensified with the establishment of:

1943 – Norrbottens Järnverk (the steelworks)
This triggered rapid worker migration and severe housing shortages, directly influencing post-war neighborhood planning (e.g., Malmudden 1950).

Industrial production influenced:
urban morphology_port expansion in the south harbor
construction of transport infrastructures
rise of working-class residential areas
Luleå became a steel city,
anchoring Sweden's northern industrial corridor.

4. Post-War Industrial Modernization (1960–2000)
During the welfare-state decades, industrial expansion shaped suburban housing development and infrastructure (bridges, roads, logistics networks).
The 1969 municipal merger helped coordinate planning for growing industrial and residential areas.
The creation of Luleå University of Technology (1971) also strengthened research sectors linked to mining, metallurgy, materials engineering, and Arctic technologies.

5. Transition to Digital & Green Industry (2000–Today)
A major shift occurred in the early 21st century:
Data centers emerge as a new industrial typology.

2011 – Facebook establishes server halls in Luleå, attracted by the cold climate and renewable hydropower.
This positions Luleå as a global node in digital infrastructure.

Meanwhile, traditional industries modernize:
steel production transitions toward low-carbon strategies
the city aligns with sustainable Arctic industrial development

6. Industrial Identity Today
Modern Luleå combines:
traditional heavy industries (steel, harbor)
digital infrastructure (data centers)
research-driven innovation (university collaboration)

This layered industrial evolution defines the city's contemporary economic and spatial identity.

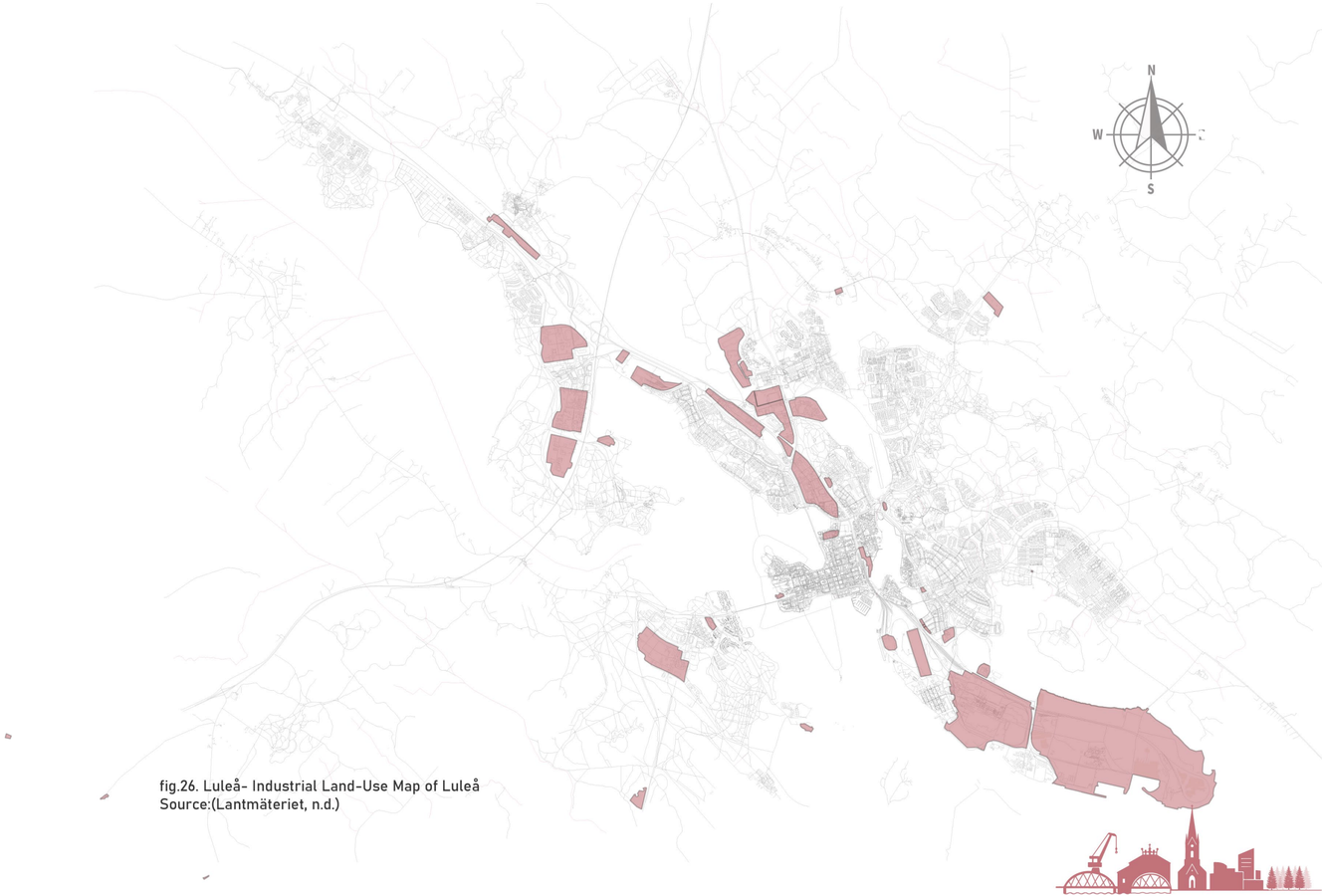


fig.26. Luleå- Industrial Land-Use Map of Luleå
Source:(Lantmäteriet, n.d.)

2.4.5 Industrial Development Timeline

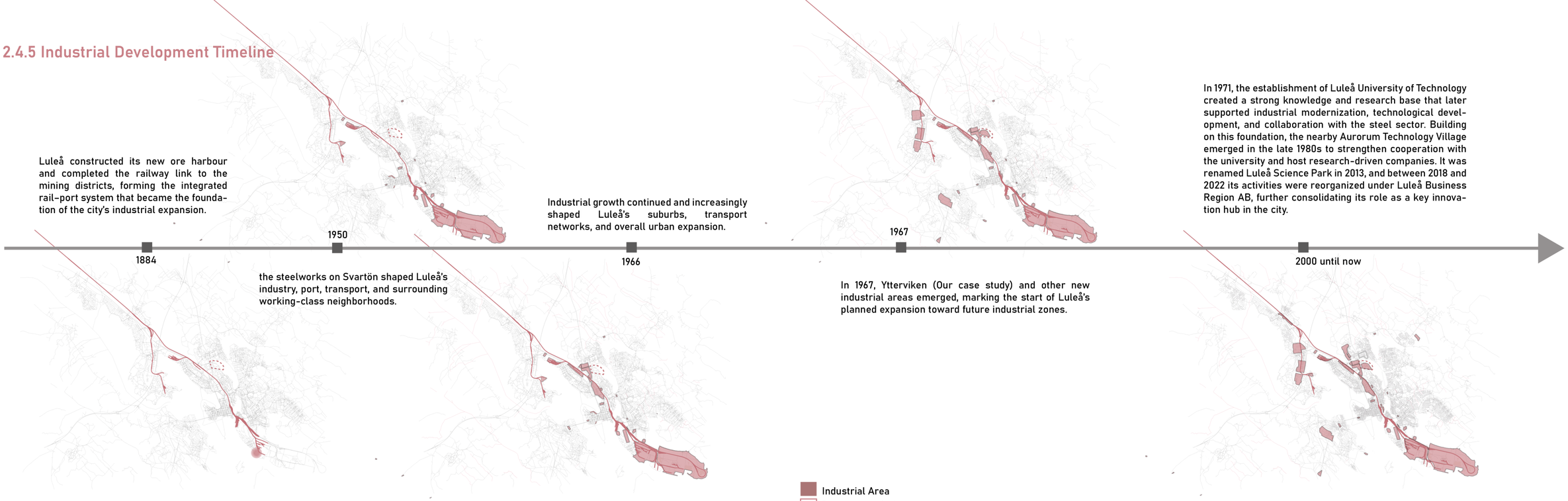


Fig.27. Urban Development of Ytterviken
Source: (Luleå kommun, n.d.)

2.4.6 Natural Landscape layers: Water

Luleå is fundamentally a water-shaped city. The presence of water has influenced its geography, urban form, mobility networks, and even industrial areas' location. Luleå is located on the Bothnian Bay, which is part of the Baltic Sea. The city has over 1300 islands, forming one of the most important archipelagos in Sweden. In this map, it's more clear that one of the main reasons for Lulea's dispersed shape is the presence of water. The city has developed according to the pattern of water. Water in Lulea dramatically changes with seasons: The bay freezes in winter and creates ice roads and pedestrian ice paths and making the opportunity for recreational spaces in winter. And in summer, it is an open water for boats, kayaks, and ferries.

fig.28. Luleå- Iced water in the city centre.
Source: Author_ Shamsaie Lashkariani

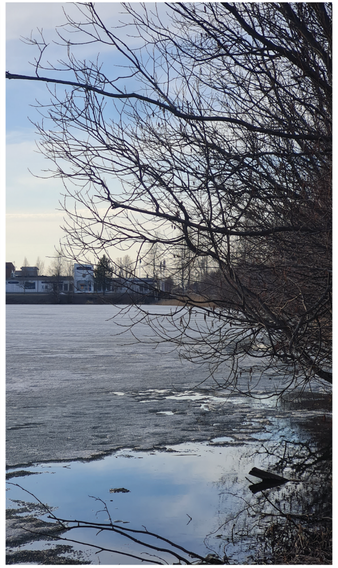


fig.29. Luleå- Frozen Bay.
Source: Author_ Shamsaie Lashkariani

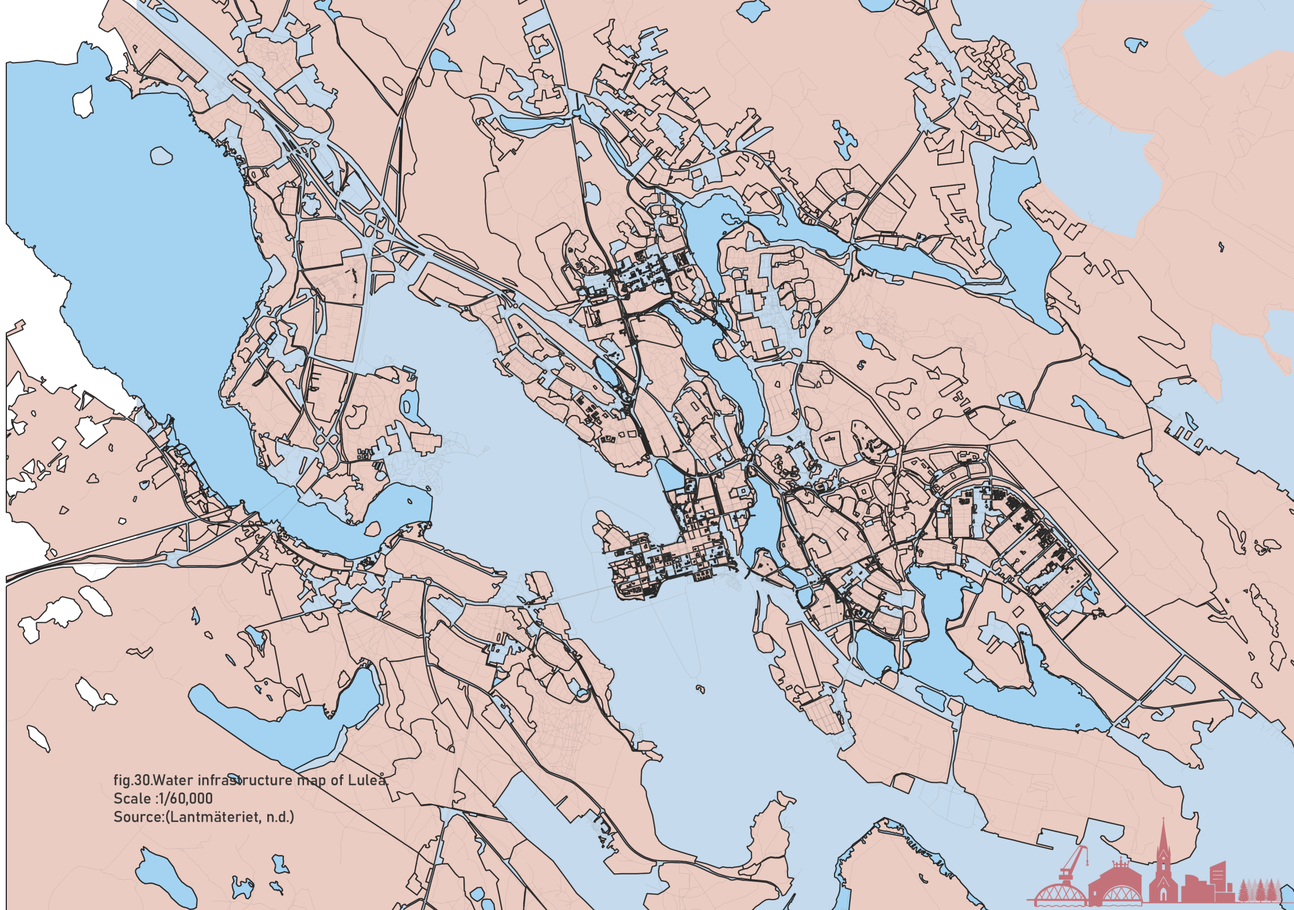


fig.30.Water infrastructure map of Luleå
Scale :1/60,000
Source:(Lantmäteriet, n.d.)

2.5 Key Differences Between Turin and Luleå (Urban & Industrial Contexts)

Category	Urban Form	Connectivity Structure	Industrial Trajectory	Industrial Fabric	Climate Influence	Social Space Logic	Population Density
Turin	Compact, continuous, grid-based city; dense blocks and fine-grained street network	Multi-directional access, strong walkability, public transport grid	Strong deindustrialization; many brownfields and transformed industrial sites	Industrial areas inserted inside continuous urban fabric	Mild continental; no major seasonal shifts in mobility	Public squares, streets, and ground-floor activities	High density (typical compact European city)
Luleå	Dispersed, polycentric Nordic city; large blocks, suburban tissues, and significant open spaces	Hierarchical roads, long distances; car and bike dominant	Industry remains active (steel, logistics, tech); limited deindustrialization	Industrial areas often on the periphery, near forest/-sea edges	Subarctic; strong seasonal differences (frozen bays, snow paths, winter mobility)	Green spaces, waterfronts, seasonal public life	Low to medium density (typical Nordic city)

Neighborhood Scale

Vanchiglietta

Ytterviken

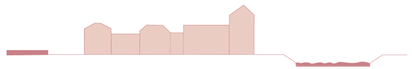
2.6 Why Vanchiglietta and Ytterviken?

After selecting Turin and Luleå as the two cities for comparison, the choice of Vanchiglietta and Ytterviken follows the same logic of this thesis: both neighborhoods represent active industrial areas that are facing challenges inorder to become part of the city.

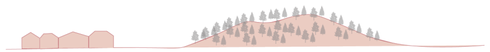
Vanchiglietta:
We chose this district among other active industrial areas in Turin because it is still located within the urban fabric, surrounded by residential neighborhoods that are well connected to the city. However, Vanchiglietta itself is isolated from the rest of the urban context due to its industrial character and the presence of strong physical and natural barriers. Another reason for selecting this area is the contrast between its significant potentials—such as proximity to the Dora River, the presence of valuable green areas, and accessibility by public transport—and the fact that, despite all these strengths, Vanchiglietta remains isolated.

Ytterviken:
Like Vanchiglietta, Ytterviken is located within the urban fabric of the city and is surrounded by residential neighborhoods. However, because of Luleå's dispersed and polycentric urban form, Ytterviken lies far from the city center and is structurally more separated. There were several industrial areas in Luleå that could be studied, but Ytterviken was selected because it shares certain similarities with Vanchiglietta in terms of morphology, scale, and proximity to natural elements such as the forest and the bay. The major similarity that connects these two neighborhoods is that both are isolated—socially and spatially—despite being located within the urban fabric.

Although Vanchiglietta and Ytterviken share similar challenges, they exist in completely different types of urban environments. The goal of this thesis is to understand which regenerative strategies can address these challenges in each neighborhood, and to examine whether these strategies are transferable across contexts or must be adapted to local conditions.



Vanchiglietta



Ytterviken

2.7 Research Insights from Luleå Residency

As part of the Thesis Abroad opportunity offered by Politecnico di Torino, we traveled to and lived in Luleå during the research period. This experience was essential for understanding our second case study in Luleå. This opportunity allowed us to develop and analyze the case study through direct observation rather than remote analysis.
Using this opportunity, it became possible for us to know the city through its rhythms, climate, public spaces, and social life.
We tried to understand the Nordic urban system by interacting with residents, mobility patterns, and environmental day and night patterns

1. Architecture and Urban Design in response to climate

When we look at the architecture and urban strategies in Luleå, we understand a contrast with Turin. Interestingly, Many spaces are designed to be adaptable to seasons and daylight cycles. Daylight pattern and environmental conditions have a major influence on architecture and public spaces in Luleå.

2. A Different Industrial Culture
The role of industry in Luleå is different from Turin.
In Turin, industry is mostly associated with deindustrialization, abandoned factories. In Luleå, industry is more present and accepted. Industrial activity is still active, preserved.

according to this, the isolation of industrial areas in Luleå isn't because of the industrial function itself, but the dispersed and morphology of the city.

3. Pattern of Social Life and Public Space

Another difference is social activity. Turin's compact urban form supports continuous public life with accessible squares, mixed functions, and street activities. In Luleå, social interaction is more episodic— it is influenced by seasonality, weather, and as a result, there are fewer public nodes. This difference helped us to understand why social fragmentation in the two case studies is happening.

4. Integration of Nature and Industry

In Luleå, forest edges, water systems, and natural landscapes are integrated directly not only into the city but also into industrial zones. There is a greener and more ecological industrial environment compared to Turin. This helped us understand that green fragmentation has very different meanings in each context.

5. Contribution to the Comparative Analysi

These observations helped us through the comparative analysis. We recognized morphology, social use, mobility, and ecological structure that shape the isolation of industrial neighborhoods differently from Turin.

2.8 Vanchiglietta

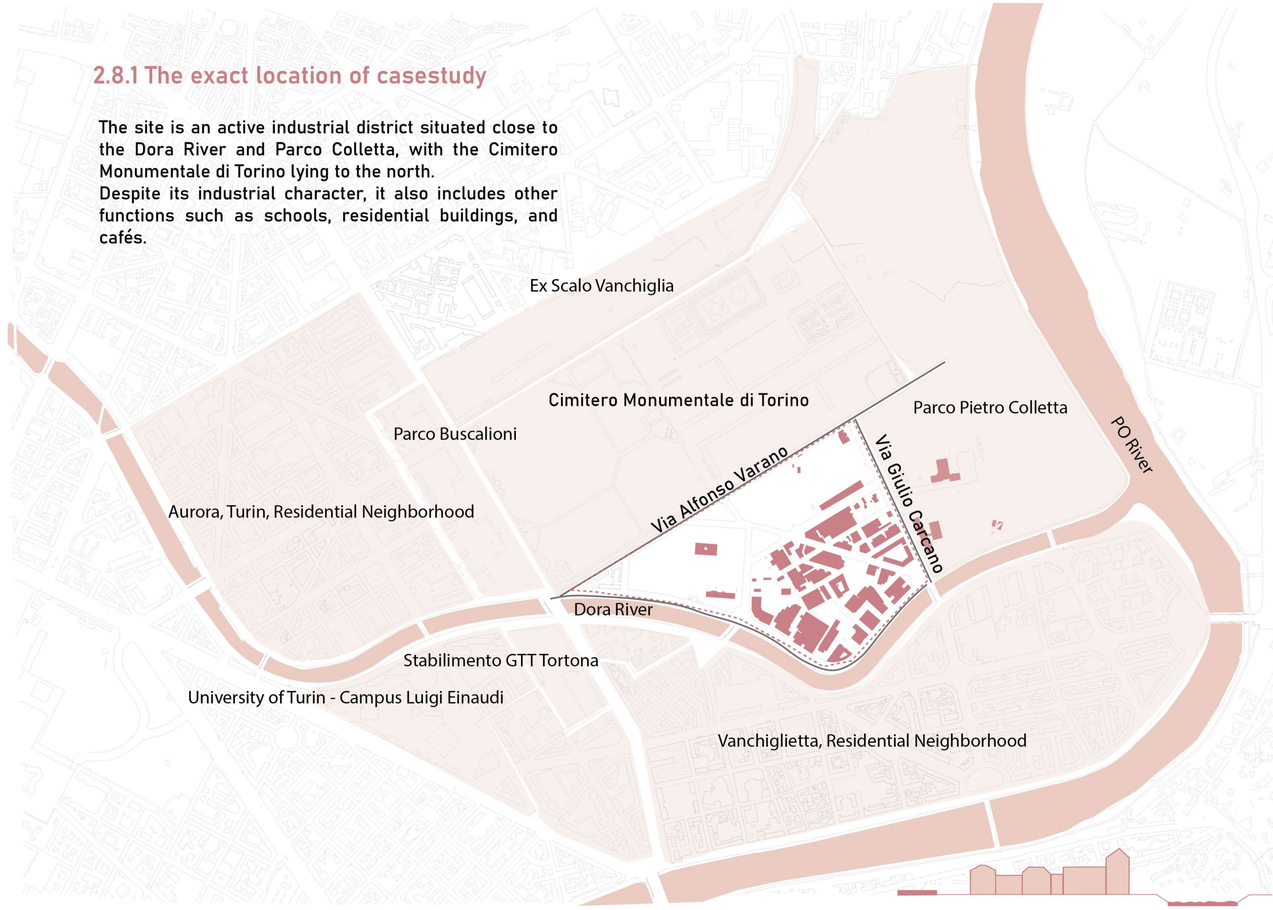
Vanchiglia is located in northeastern Turin between the Po and Dora Riparia rivers, extending from Corso San Maurizio to the confluence park of Colletta.
Vanchiglietta lies further toward the confluence of the two rivers, characterized by low-lying, fertile terrain that underwent early industrialization and later urban redevelopment

Fig.31. Turin
Source: (Geoportale)

Fig.32. Vanchiglietta (Dora river)
Source: By Author (Shamsaie Lashkariani, 2025)

2.8.1 The exact location of casestudy

The site is an active industrial district situated close to the Dora River and Parco Colletta, with the Cimitero Monumentale di Torino lying to the north.
Despite its industrial character, it also includes other functions such as schools, residential buildings, and cafés.



2.8.2 Phases of Urban development

1850–1880: Rural & Peripheral
The area was mostly agricultural, with scattered farmhouses between the Dora and Po rivers. It remained peripheral to Turin's urban core, except for the establishment of the Monumental Cemetery (1829).

1880–1908: Early Industrial Growth
Industrial activities emerged along the Dora River. Workers' housing and early infrastructure appeared, gradually integrating Vanchiglietta into the growing industrial city.

1911–1945: Industrial Peak
The neighborhood became known as "Borgo del Fumo" due to high factory density. Dense housing, tram lines, and local services shaped a strong working-class urban fabric.

1946–1980: Post-War Development
Population growth led to new residential buildings and improved infrastructure. Industry coexisted with public housing, but open spaces were limited.

1980–2011: Deindustrialization
Factory closures led to vacant buildings and urban fragmentation. The area experienced demographic decline and declining public investment.

2011–Today: Regeneration & Transition
Green infrastructure, bike paths, and adaptive reuse have begun transforming Vanchiglietta. It is evolving into a mixed-use district with cultural, ecological, and student-led dynamics.

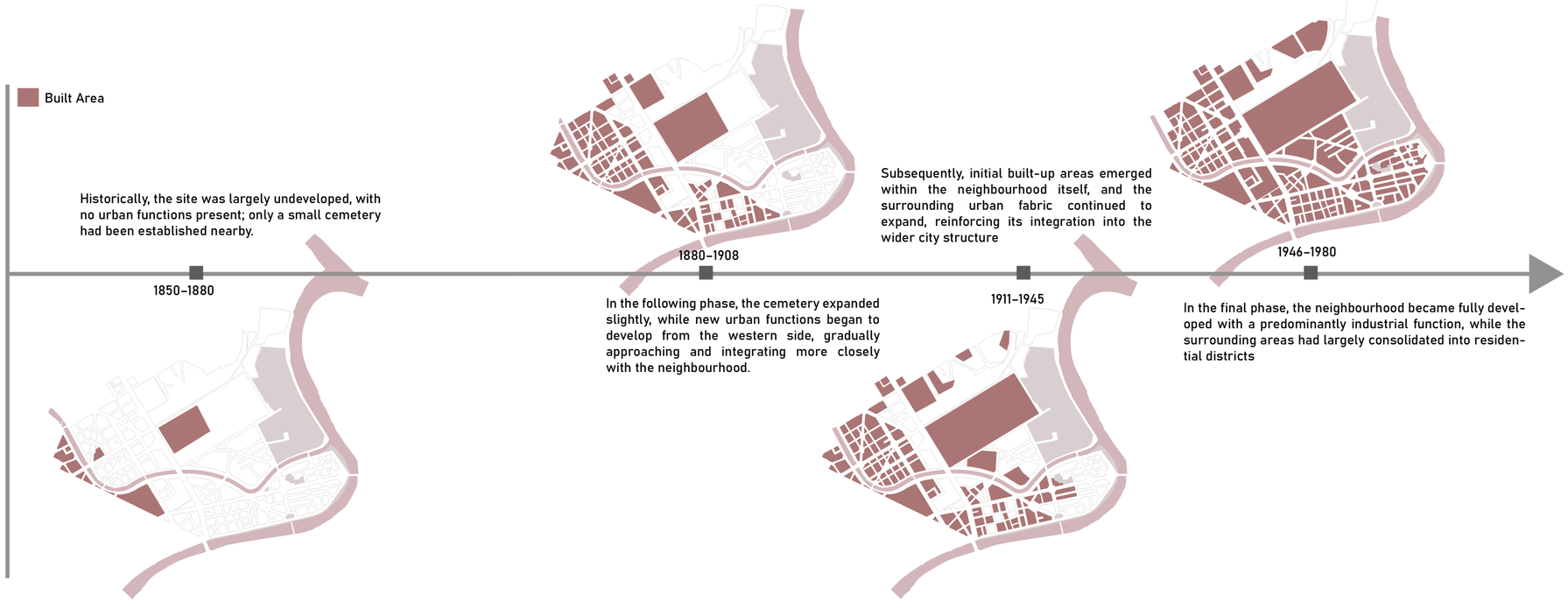


Fig.33. Urban Development of Vanchiglietta
Source: Cultor.(2021)

2.8.3 Morphology of the study area and surrounding Neighborhoods

The First and second chosen case represents a typical closed block, designed for exclusively residential use and organized around a shared internal courtyard, a characteristic urban form in the city of Turin. The buildings enclose the courtyard completely, occupying all sides, while the interior space remains an open void, serving as a communal area for residents.

The Third case consists of Hybrid blocks with a predominantly industrial character. It features a combination of a few taller residential buildings and numerous low-rise industrial structures, typically no more than two stories high. The buildings are not arranged in a continuous curtain wall but are scattered randomly across the block, creating voids that enhance permeability and allow for movement within the neighborhood

The fourth case represents a typical open block, characterized by the predominance of a large garden occupying most of the block's area. The buildings are positioned as independent elements within the block, with no continuous perimeter or curtain wall. This arrangement creates a highly open structure, with significant voids that allow for free movement and strong permeability within the surrounding neighborhood.

The urban morphology of the study area presents a hybrid character without a clearly defined block structure. While some parts follow the curvature and alignment of the Dora River, others deviate, resulting in irregular block shapes and inconsistent spatial organization. This fragmented layout contributes to a varied building density across the neighborhood — with certain areas exhibiting compact, high-density development, while others remain more open or underutilized. The irregular morphology reflects both the historical layering of the district and the absence of a unified planning framework during its evolution.

1. Closed block

2. Closed block

3. Hybrid block

4. Open block

The Area: Hybrid block

2.8.4 The surrounding urban nodes and networking

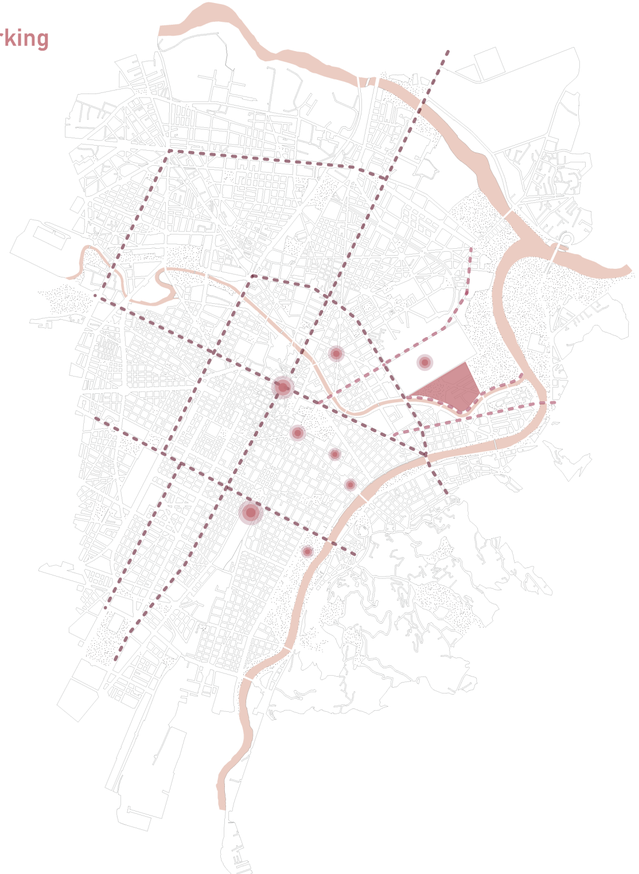
The area of the project is located in Vanchiglietta which is strategically positioned within Turin's northeast quadrant, bordered by key urban districts and infrastructural elements that contribute to its connectivity and influence its development dynamics.

To the South, The area of the project connects with Vanchiglia, a creative and cultural district close to the historic center. This proximity allows the area to benefit from the vibrant student and cultural life radiating from the University of Turin's Luigi Einaudi Campus, located just across the Dora River.

To the West, the Aurora district lies across the Dora Riparia. Historically industrial and socioeconomically challenged, Aurora is currently undergoing partial regeneration. The Ponte Rossini and other bridges provide physical linkages across the river, though visual and social permeability remains limited.

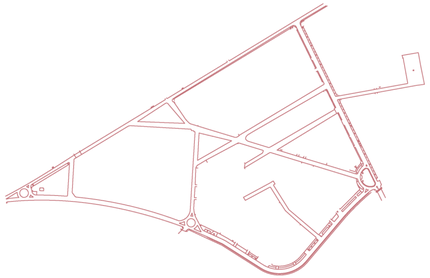
To the East, The area opens toward the Parco Colletta, one of the largest green areas in the city. This connection enhances ecological continuity and offers potential for soft mobility links (e.g., bike and pedestrian routes) and recreational corridors.

To the north lies the Cimitero Monumentale di Torino, a large historic cemetery. While often perceived as a spatial boundary, the cemetery also provides a contemplative green space with architectural and cultural significance.



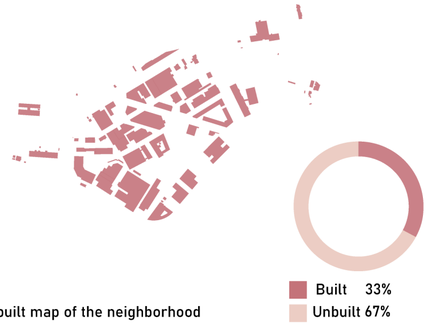
2.8.5 Built and road network of Vanchiglietta

Road Network of the area and surrounding



Road Network of the neighborhood

built map of the area and surrounding



built map of the neighborhood

2.8.6 Function map

- Public Service
- Commercial
- Residentioal
- Offices
- Schools and education
- Industrial
- Civic
- Religous and church
- Sport
- Hospital
- Art
- Hotel
- Park

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Fig.34. Land Use
Source: Comune di Torino

2.8.7 State of the Art

2.8.8 Spatial Challenges

Lack of Designed Parking Areas:
The absence of planned parking spaces leads to disorganized vehicle parking, which disrupts both pedestrian and vehicular movement.

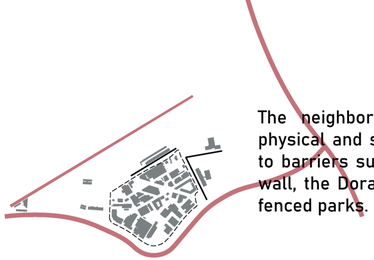
Blocked or Abrupt Pedestrian Paths:
Pedestrian walkways are often blocked by parked cars or end abruptly, making walking unsafe and inconvenient.

Undesigned Streets:
Streets lack proper design for traffic flow, safety, and accessibility, creating chaos for vehicles, pedestrians, and cyclists.

Absence of Bike Paths:
There are no dedicated bike lanes, and existing cycling routes do not connect to the neighborhood, discouraging sustainable transportation.

Insufficient Parking for Bicycles:
There are no designated areas for bicycle parking, limiting the use of bikes as an alternative mode of transportation.

These issues collectively hinder mobility, safety, and connectivity, reducing the overall livability of the neighborhood.



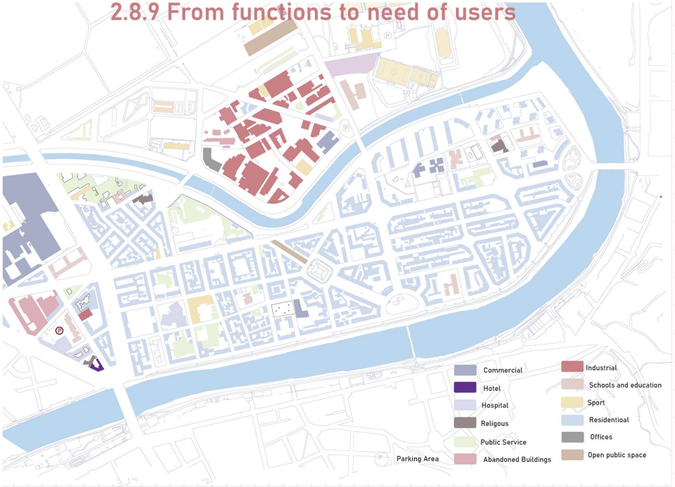
The neighborhood suffers from physical and spatial isolation due to barriers such as the cemetery wall, the Dora and Po rivers, and fenced parks.

Internally, fragmented street layouts, blocked pathways, and dense, poorly designed urban blocks further disrupt connectivity and limit access to amenities.

Parks within the area also lack integration with their surroundings, reducing their use and social value.

To address these issues, a redesign of the street network, improved accessibility to green spaces, and the introduction of green corridors and interactive public areas are essential.

2.8.9 From functions to need of users



Industrial areas
Users:
Workers
Delivery and service
Time: 6 AM_7 PM

PRODUCTIVITY

Mental focus

Creative exchange

Social networking

Physical renewal

Residential areas
Users: Families
Elderly residents
Students/young singles
All the time + weekend

BELONGING

Daily life

Community identity

Continuity and comfort

Social interaction

Small Businesses
Local residents
Shop owners

Sport areas
Users: Students
Elderly residents
Local youth & families
Amateur athletes
local sports clubs

Time: everyday mostly weekends

Educational areas
Users: Teenagers and parents
university students
8AM_2PM

LEARNING

Educational play

Exploration & discovery

Shared learning moments

Supportive study environments

OPPORTUNITY

Economic activity

Circulation

Visibility & engagement

VITALITY

Physical energy

Mental freshness

Connection to nature

Community

Spaces for Retired & Elderly People
Users: elderly residents
Elderly with grandchildren

WELL-BEING

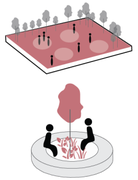
Physical ease

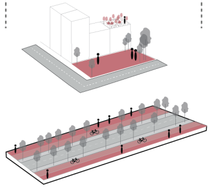
Mental calm

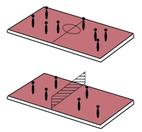
Emotional warmth

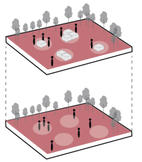
Social connection

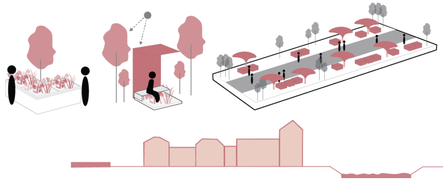
USER	Workers	Residences Families	Sport users youth & families local sports clubs	Students	Eldery	Small Businesses Local residents Shop owners
NEEDS	Productivity Mental focus Physical renewal Creative exchange Social networking	Belonging Daily life Community Continuity Comfort Social interaction	Vitality Energy Physical energy Community Connection to nature	Learning Educational play Exploration study environments	Well-being Physical ease Mental calm Social connection Emotional warmth	Oppurtunity Economic activity Circulation Visibility engagement
SPATIAL TYPOLOGY	Green area Rest areas Meeting zones Co working Space Events, pop-ups	Community Courtyards Pocket Parks Green Roofs Flexible Squares Market Area Pedestrian-first Streets	Walking Loops Outdoor Gym Areas Playgrounds Multi-use Sports Fields Skate and Bike Areas Yoga Lawns	Study Nooks Quiet Zones Flexible Exhibitions Hangout Spaces	Gardens Quiet Seating Nooks Shaded Plazas Community Sheltered Benches near Play Areas connect with children	Linear Market Covered Market Canopy
SPATIAL STRATEGY	Low-traffic zones Nature and silence Accessibility Semi-open Open areas	Activate edges flexible use visibility micro-gardens social pockets	nature integration safe pedestrian bike connections flexible surfaces	shade, seating quiet micro-zones green areas flexible setups	Co-locate with play areas low-maintenance plants rest points	edges of green areas pedestrian circulation visual connections
ARCHITECTURAL ELEMENTS	Green buffers Modular furniture Edible landscaping	modular seating Textured paving Shaded seating Play elements	Multi-use courts Outdoor gym structures Jogging paths Water fountains	outdoor furniture Green canopies trees Low-key activity pavilions	Comfortable benches Shade structures tree canopies Water elements Sensory planting smooth walking paths	tensile structures String lighting





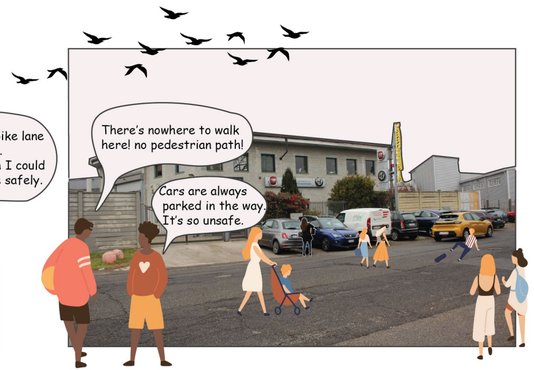






2.8.10 Photographic Register (Perceptions of Life in Vanchiglietta)

Lack of bike Lane



Lack of Designed Pedestrian Path

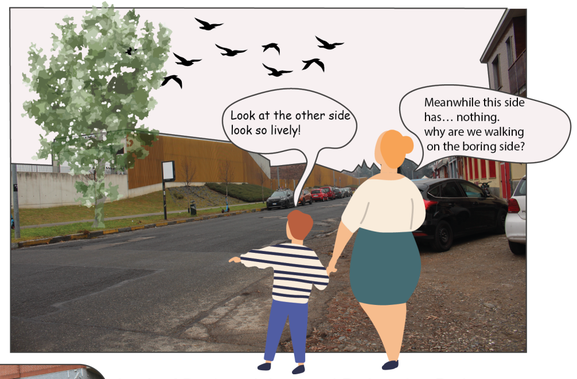
Lack of Viewpoint

wall of the cemetery as a barrier

Lack of Public Space

Undesigned Parks

Lack of Gathering space for workers



Lack of Designed designed Pedestrian Path

Lack of Public Space

Presence of fences that seperate areas

Fig.35.Vanchiglietta street views. Photos taken by the authors (2025)

2.8.10 Photographic Register (Our Point of View)


The beautiful view of superga visible from the neighborhood


The Graphics on the wall of art school

Existing Green Walls


Students coming back from school


Walking Path near the Dora


Presence of Industry


Birds Interacting with urban form

Fig.35.Vanchiglietta street views. Photos taken by the authors (2025)

2.9 Ytterviken

Ytterviken is an industrial peninsula located in the northern part of Luleå, directly adjacent to Porsön and positioned along the waterfront facing the Lule River. Today the area is characterized by a large-grain industrial fabric, with logistics yards, storage facilities, and low-density industrial buildings arranged across wide plots. Despite its proximity to major districts—such as the university campus, residential areas, and natural landscapes—Ytterviken functions as a spatially isolated enclave, shaped primarily by infrastructural logic rather than urban connectivity

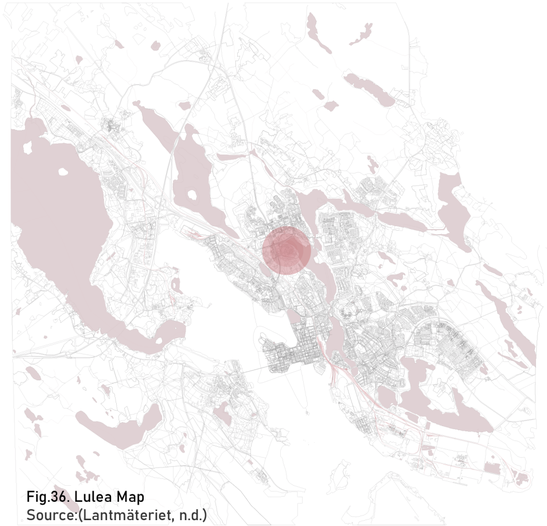


Fig.36. Lulea Map
Source:(Lantmäteriet, n.d.)

Fig.37. Yttervike (Main Entrance)
Source: By Author (Shamsaie Lashkariani, 2025)

2.9.1 The exact location of case study

2.9.2 Morphology of the study area surrounding Neighborhoods

Institutional–Industrial Hybrid

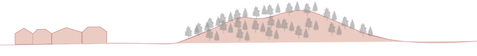
The casestudy Area:
Large-Scale Industrial Fabric

Modernist and Suburban Tissues

Although Ytterviken is administratively part of Porsön, its built fabric differs significantly from the district's institutional and residential character. Ytterviken follows a medium-grain industrial typology, composed of small to mid-sized workshops, storage buildings, and technical facilities arranged on loosely defined parcels. Unlike Luleå's large-scale industrial zones, the buildings in Ytterviken are relatively modest in size, producing a lighter and more fragmented industrial landscape. This places Ytterviken morphologically between the university campus and the heavy industrial areas closer to the harbor, reinforcing its role as a transitional productive zone within the wider urban structure.

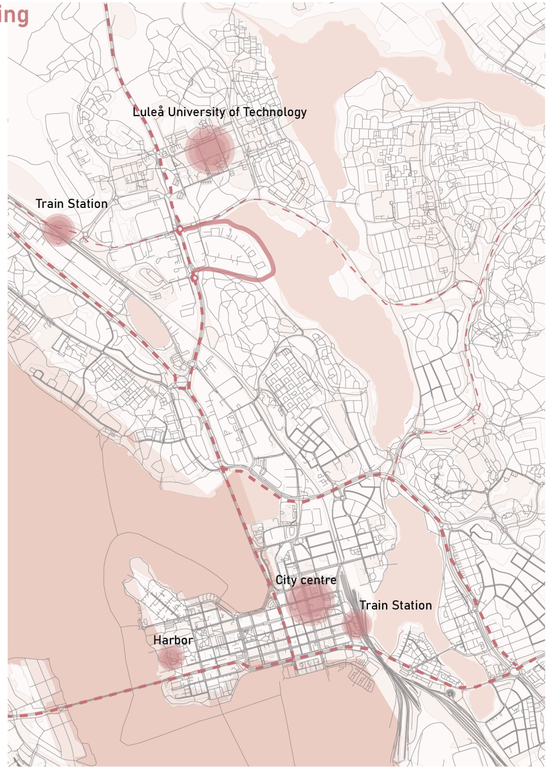
We also analyzed two neighborhoods near Ytterviken:
Porsön / Luleå University campus and the nearby residential area.

As mentioned earlier, Porsön and the university area follow an Institutional–Industrial Hybrid morphology. The campus supplies a clear circulatory structure and potential active uses (students, staff) that could animate edges
The residential area represents a Modernist and Suburban Tissue:curvilinear streets, loops and cul-de-sacs, generous green buffers, and clusters of low- to mid-rise housing. These areas emphasize privacy, greenery, and separation of traffic, producing comfortable living conditions but low permeability and weak visual continuity with neighboring uses Although Ytterviken is officially part of Porsön, its morphology is different: it functions as a medium-grain industrial area, shaped more by its productive character than by the campus structure.



2.9.3 The surrounding urban nodes and networking

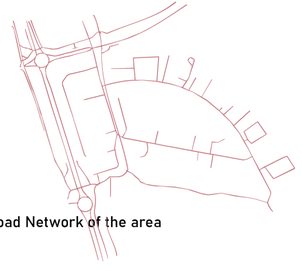
Ytterviken is located within an industrial and commercial zone in the Örnäset area of Luleå, surrounded by key infrastructural and service-oriented nodes. To the north and east, it borders light industrial facilities and logistics hubs, supporting much of Luleå's local economy. The street lies near Örnäsrondellen, a major roundabout that connects it to adjacent arterial roads, ensuring efficient vehicular access across the eastern part of the city. To the west, it links indirectly to mixed-use and emerging residential areas such as Kronandalen, though Gårdsvägen itself remains predominantly service-based. Its proximity to main roads, public utilities, and planned mobility upgrades under the Östra länken project positions it as a strategic part of Luleå's functional urban infrastructure, rather than a socially oriented neighborhood.



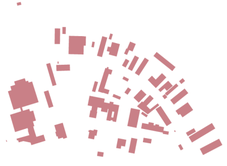
2.9.4 TBuilt and Road network of Ytterviken

Road Network of the area and surrounding

built map of the area and surrounding



Road Network of the area



built map of the area

2.9.5 Function map

Fig.38. Land Use
Source:(Lantmäteriet, n.d.)

2.9.6 State of the Art

2.9.7 Spatial Challenges

1. Physical Barriers Disconnect the Neighborhood:
Water as a barrier: The waterfront has high potential but currently acts as a hard edge, not a connector.

Forest as a barrier on the opposite side:
The forest forms a natural wall with no integrated paths, no transitions, and no active interface.

2. Greenery Exists Around the District, But Not Inside

Surrounding forest and waterfront create a green frame, but the core of the neighborhood suffers from the lack of designed greenery.

3.Numerous Unused Voids Between Buildings

Large gaps between workshops, garages, and municipal buildings are unprogrammed and used only for snow piles or leftover storage or parkings.
These voids have high potential for micro-parks, shared courtyards

Single-Function Daytime District

Most businesses operate only 8:00–17:00.
After that, the area becomes empty and inactive.

Result:
Weak urban safety, no evening vibrancy, and potential perception of isolation

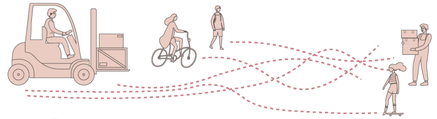
Very Limited Public Realm

There are no:
plazas -pocket parks_ benches
small public squares
attractive walking routes

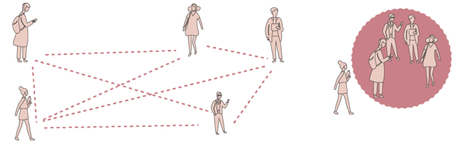
Heavy Vehicle Flows Mixed with Visitors

Car repair shops, delivery vans, beer distribution trucks, and municipal maintenance vehicles all share the same interior streets.

Result:
Conflicts between users



Lack of Mixed-Use Architectural Programs
No shared spaces like:
coworking for small makers
training rooms
workshop-for-hire
small showroom/gallery
community room for evening events



Result:
The area remains mono-functional — unused evenings and weekends.

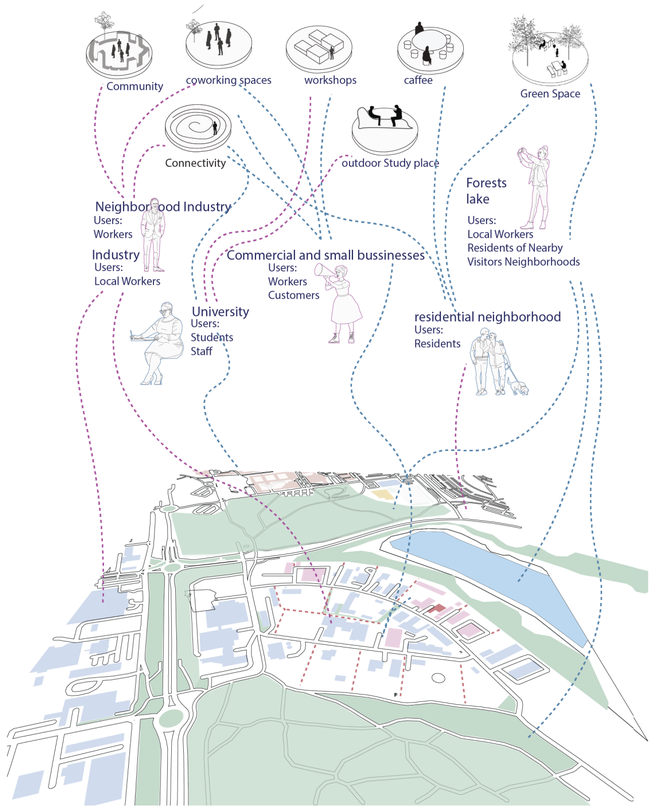
2.9.8 From Function to Need of Users

Understanding user needs is where the design process truly begins. For us, this phase is not only about defining functions but about discovering how people live, move, and connect within a space. In an industrial neighborhood, where traces of production and community coexist, design becomes a bridge between memory and everyday life. We believe that by listening to users and observing their routines, it becomes possible to shape spaces that are both practical and emotionally grounded.

In this project, the main users are the workers who spend much of their day within or around the industrial area, together with their customers who visit for specific services or exchanges. Their needs are simple yet essential: safe paths, comfortable areas for rest, and spaces where brief moments of social interaction can naturally occur. Designing for them means creating environments that respect their rhythm and give value to small pauses in the working day.

Around the site, residents represent another important group of users. They experience the neighborhood not as visitors but as part of their daily landscape. For them, the quality of space—green areas, visual openness, and a sense of continuity with the surrounding context—directly affects well-being. We see this group as vital in reconnecting the industrial core to the wider urban life.

The presence of a nearby university introduces students, who bring energy, flexibility, and diversity to the area. They often seek adaptable spaces to study, meet, and engage with others, contributing to a more active and inclusive neighborhood dynamic.



2.9.9 Photographic Register (Perceptions of Life in Ytterviken in Summer)

Lack of Bike Parking

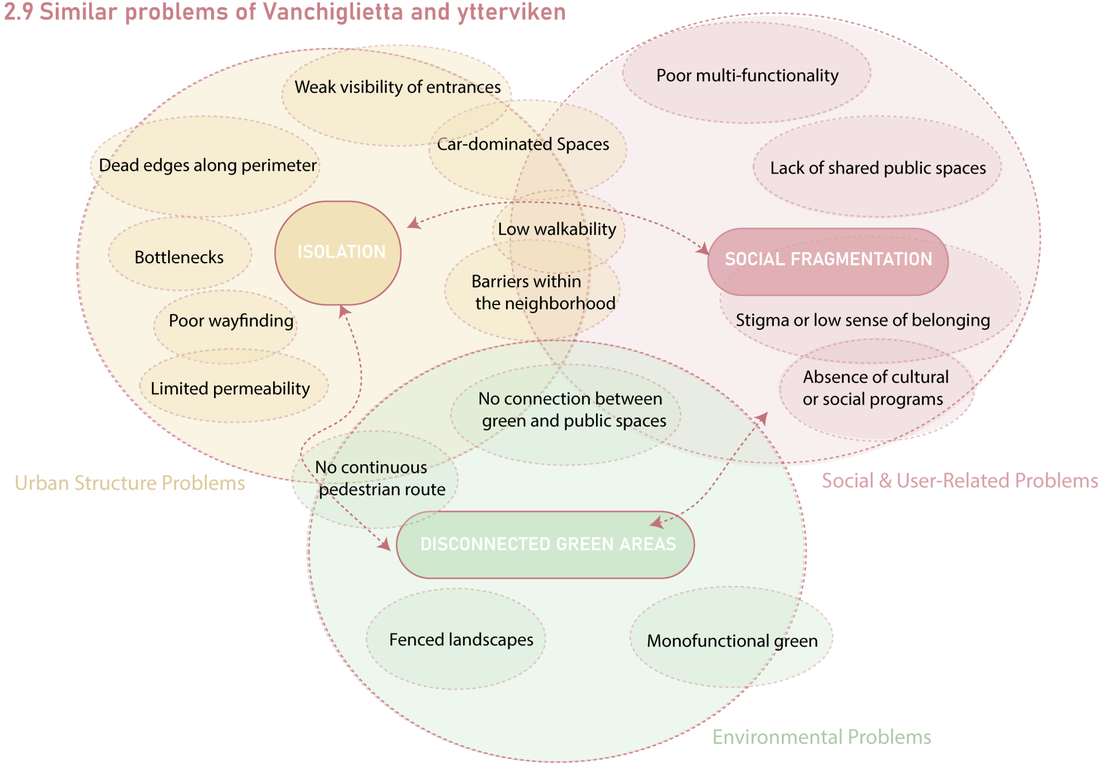
Lack of Bike Lane and pedestrian path

Lack of Spaces for Relaxing and Sightseeing

Lack of outdoor spaces for workers

2.9.9 Photographic Register (Perceptions of Life in Ytterviken in Winter)

2.9 Similar problems of Vanchiglietta and ytterviken



After conducting spatial, social, and ecological analysis for both neighborhoods, three main issues are identified that are shared among Vanchiglietta and Ytterviken. These shared problems help us to find the underlying reasons that lead to these problems, and as a result, help us to develop effective regeneration strategies based on these problems. The main shared problems are: Spatial Isolation: Both neighborhoods show a lack of physical connectivity from the surrounding such as weak walkability, the presence of physical barriers, and discontinuous street networks. Social Fragmentation: The social analysis shows that the community structure in both neighborhoods is fragmented. There is limited social interaction inside the neighborhoods and also between the neighborhoods and their surrounding. This fragmentation reduces the sense of belonging and makes the social fabric weak. Disconnected Green Areas: Although both neighborhoods have a notable amount of green spaces but these greeneries are not integrated into their fabric. Even though these green spaces can be an advantage to the neighborhoods, they are disconnected from them, and they even reinforce their isolation. Why identifying shared problems matters: Identifying these problems helps us to find the underlying reasons, and this makes it easier to find the strategies based on the problems. These steps help us to develop a comparative analysis between problems, reasons, and strategies in order to understand id the strategies can be transferable or not.

03

COMPARATIVE ANALYSIS

In this chapter, we compare the case studies through the three KPIs identified in Chapter 2 and then we propose strategies based on their context.

3.1 Introduction

As discussed at the end of chater 2, we have identified 3 shared problem present in both Vanchiglietta and ytterviken:

_ Spatial Disconnection (Isolation)
_Social Fragmentation
_Fragmented Green Networks

In this chapter, The aim is to find the reasons behind of theses problem in vanchiglietta and ytterviken and then to define the strategies to adress these problems based on the studies of their cities(Turin and Lulea) and the characteristics of each neighborhood.

At the end we want to discover whether the strategies developed for one neighborhood can be applied to the other one or whether they are specifice to their context and they can't be the answer to the other context.

3.2 Comparative Methodology

The Method in the comparative analysis is a multi-scalar and iterative method that moves between the neighborhood scale and the urban scale.

1. Neighborhood-Scale Diagnosis (Identifying the Causes)
we begin the analysis at the neighborhood level in order to identify the specific internal factors that cause the problems.

2. Urban-Scale Interpretation (Understanding city's Structural Logic)

After step one then we "zooms out" to the city scale to understand how urban structure, morphology, planning history, and mobility system cause the problem in each neighborhood.

This step helps us to understand whether the neighborhood-level analyses are as a result of:
Local anomalies Or city's spatial logic

3. Returning to the Neighborhood (Context-Based Strategies)

Finally, again we return to the neighborhood scale to develop strategies that are based on neighborhood characteristics and city's spatial logic.

3.3 Each KPI's Definition and Approaches to analysis

Spatial Disconnection (Isolation)

Isolation in a neighborhood happens when the neighborhood is physically and perceptually separated from the surrounding city.
Main things that can cause isolation are hard edges (rivers, railways, walls), few access points, monofunctionality of an area, and infrastructure patterns that prioritize vehicles over people.

Social fragmentation

Social fragmentation means Weak social interactions, limited mixed functions, and a lack of shared public spaces. These lead to preventing different user groups from interacting and reducing the chance of making a sense of community.

The concept of social fragmentation is different from isolation; however, they influence each other.
Social fragmentation means that social interaction is not happening either inside a neighborhood or between the neighborhood and other areas.
This is a problem when it is not possible for people to interact with functions and activities. So there is a separation between them. Authors such as Madani pour emphasize that fragmentation is fundamentally socio-spatial. It is highly influenced by the physical structure of the city—its barriers, land-use patterns, street networks, and distribution of public spaces.

At the neighborhood scale, social fragmentation appears when there is no mixed-use functionality, and as a result, the diversity of users that can interact with each other is low.

Therefore, in our thesis, social fragmentation is understood as a combination of spatial disconnection, weak public life, limited mixed uses, and reduced opportunities for social interaction. It is both a symptom and a driver of urban inequality, and addressing it requires design strategies that reconnect spaces, diversify functions, and restore everyday social encounters.

Approach to Social Fragmentation Analysis

As we explained, a neighborhood becomes socially fragmented because there isn't enough social interaction inside it or between the neighborhood and other areas. Since we know these interactions happen because of the presence of people and users are very influential in the subject. We analyze this part according to user types and profiles.

In order to structure this analysis, we categorize users to two main user groups:

_Users coming from outside the neighborhood (visitors, commuters, non-local residents);

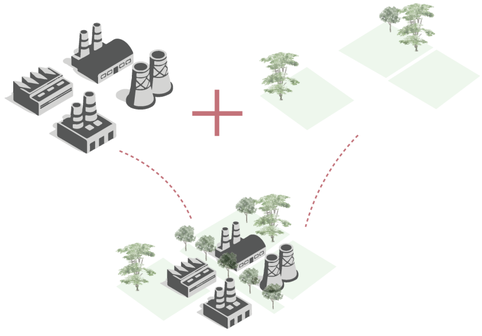
_Users already inside the neighborhood (local residents, workers, students).

Fragmented Green Network

Green spaces are very important in the environmental and social aspects of industrial neighborhoods. Across the literature on Green Infrastructure (GI) and Industrial Urbanism, greenery is understood not as decoration but as a functional system. Greenery can help to reduce pollution and heat; it improves air quality and supports ecological continuity in places where industry is stressing the environment. GI research shows that vegetation—when designed as interconnected corridors—can improve microclimate conditions, reduce the heat island effect, and increase outdoor comfort even in the contexts where industry is very heavy.

Studies by Hatuka & Ben-Joseph show that green and open spaces form an important element of industrial urbanism typologies. They act like buffers, connectors, or transition zones between industry and residential or commercial environments.
Similarly, international regeneration precedents such as Landschaftspark Duisburg-Nord or Parque Fundidora show that integrating vegetation into industrial sites can restore ecological processes, improve public life, and transform isolated zones into inclusive, multifunctional urban landscapes. These studies show that greenery is a powerful tool for reconnecting fragmented industrial areas, improving resilience, and strengthening the relationship between the industrial fabric and the surrounding urban system.

However, the greenery doesn't become effective simply because of its presence, but it is important that it becomes integrated into the area. When green areas are isolated patches—unconnected, poorly designed, or not accessible-they are not effective. They are fragmented networks. Fragmentation prevents green spaces from functioning as ecological corridors or usable public spaces and instead can reinforce isolation. In industrial neighborhoods, fragmented green structures often limit walkability, reduce social interaction, and fail to soften the physical and perceptual boundaries created by industrial land uses.

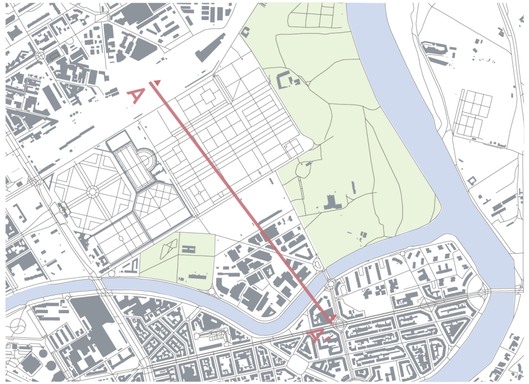


3.4 Spatial Disconnection (Isolation)

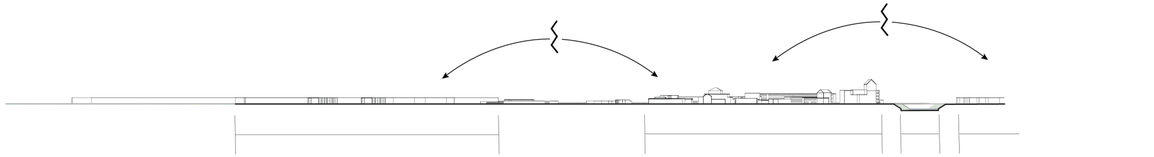
3.4.1 Neighborhood-Scale Diagnosis (Identifying the Causes)

Vanchiglietta

The presence of Dora River in between Vanchiglietta and adjacent neighborhood, and the solid continues wall of the monumental Cemetery Isolates Vanchiglietta from surrounding.



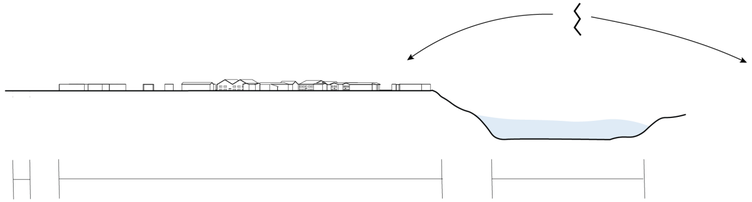
Vanchiglietta_ scale : 1/20000



Section A_A'
Scale : 1/5000

Ytterviken

The presence of Bothnian Bay to the east and Forest to the south and also Highway to the west isolates Ytterviken from the surrounding.



Section A_A'
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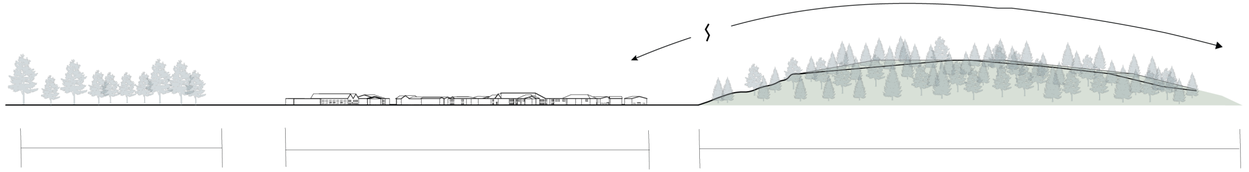
Ytterviken_ scale : 1/20000



Section B_B'
Scale : 1/5000

3.4.2 Urban-Scale Interpretation (Understanding city's Structural Logic)

Turin

In Turin, When we look at the other Neighborhoods across Dora, It is clear that the addition of bridges and activation of their edges and entrances helped them escape Isolation. These neighborhoods are connected to the city from the other sides However, in vanchiglietta situation is different due to the presence of the cemetery. Because of cultural beliefs, the cemetery is surrounded by a continuous wall, which interrupts the connection between Vanchiglietta and the surrounding urban fabric. When we look at the other side of cemetery, though, we see the defined entrance that creates an open space introns of cemetery rather than close and isolated atmosphere.

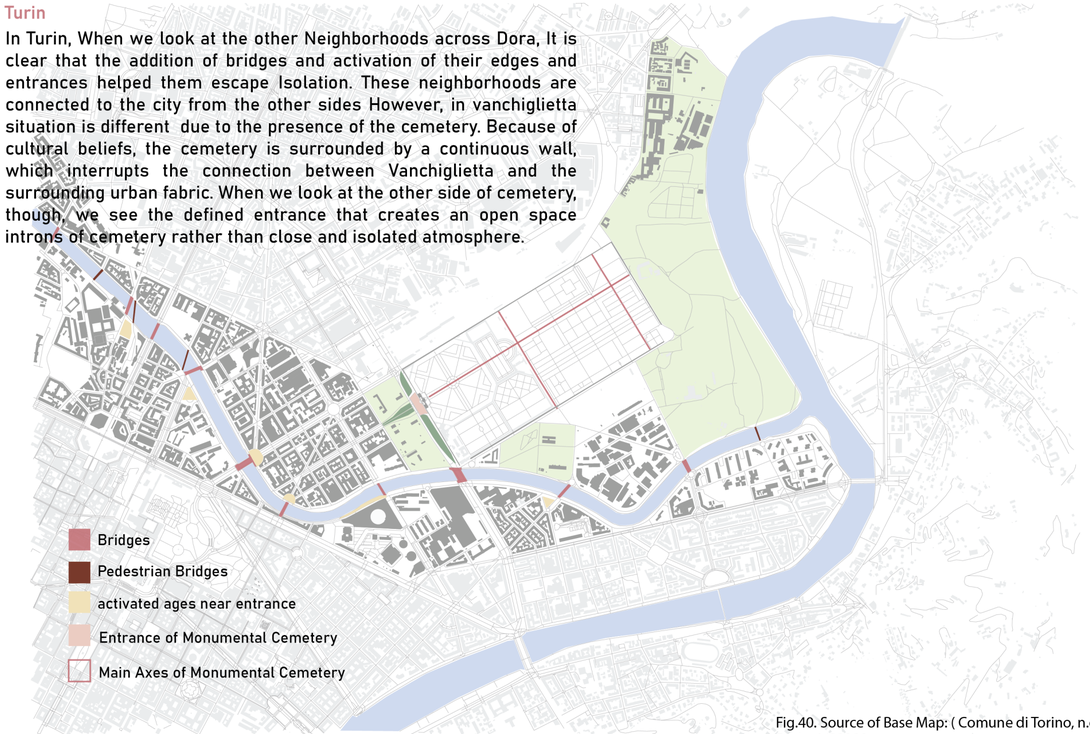


Fig.40. Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/20000

Lulea

In Luleå, the situation is different. Although the neighborhood is disconnected due to natural barriers—similar to how the presence of the Dora creates disconnection in Turin—the condition here is more temporary. When studying Luleå, we see that the bay can turn into a "white infrastructure" when it freezes, and just like in other parts of Luleå, it can sometimes become a connection point. However, because its edges are not designed or clearly defined, it is not very usable.

Another important aspect is the structure of the city itself. The urban structure of Turin allows neighborhoods to have multi-directional connections with their surroundings, but in contrast, Luleå is a linear city, where neighborhoods mostly connect along a single axis. As a result, in Ytterviken, one of the main issues that could be improved is the bike lane coming from the city center, which becomes interrupted once it reaches Ytterviken.

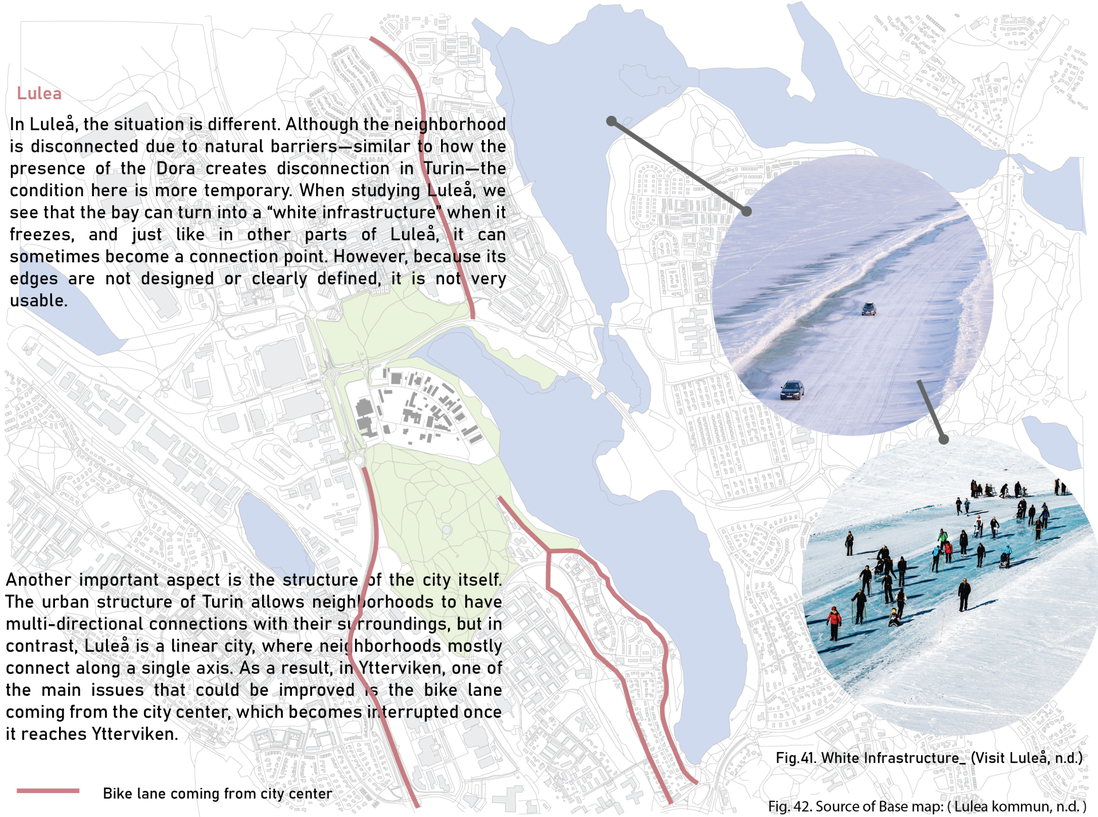


Fig.41. White Infrastructure_ (Visit Luleå, n.d.)

Fig. 42. Source of Base map: (Lulea kommun, n.d.)
Scale: 1/20000

3.4.3 Context-Based Strategies

Vanchiglietta

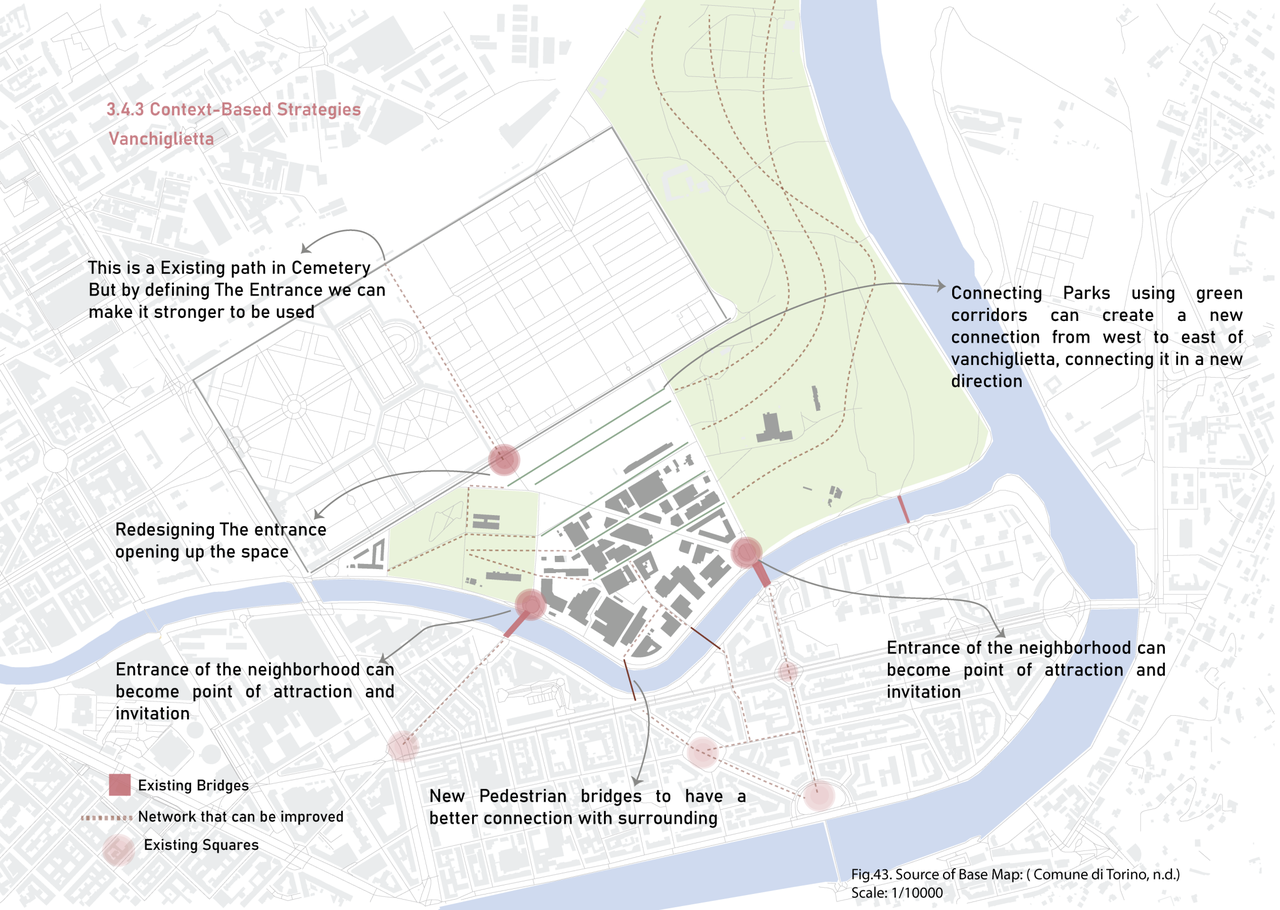


Fig.43. Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/10000

Ytterviken

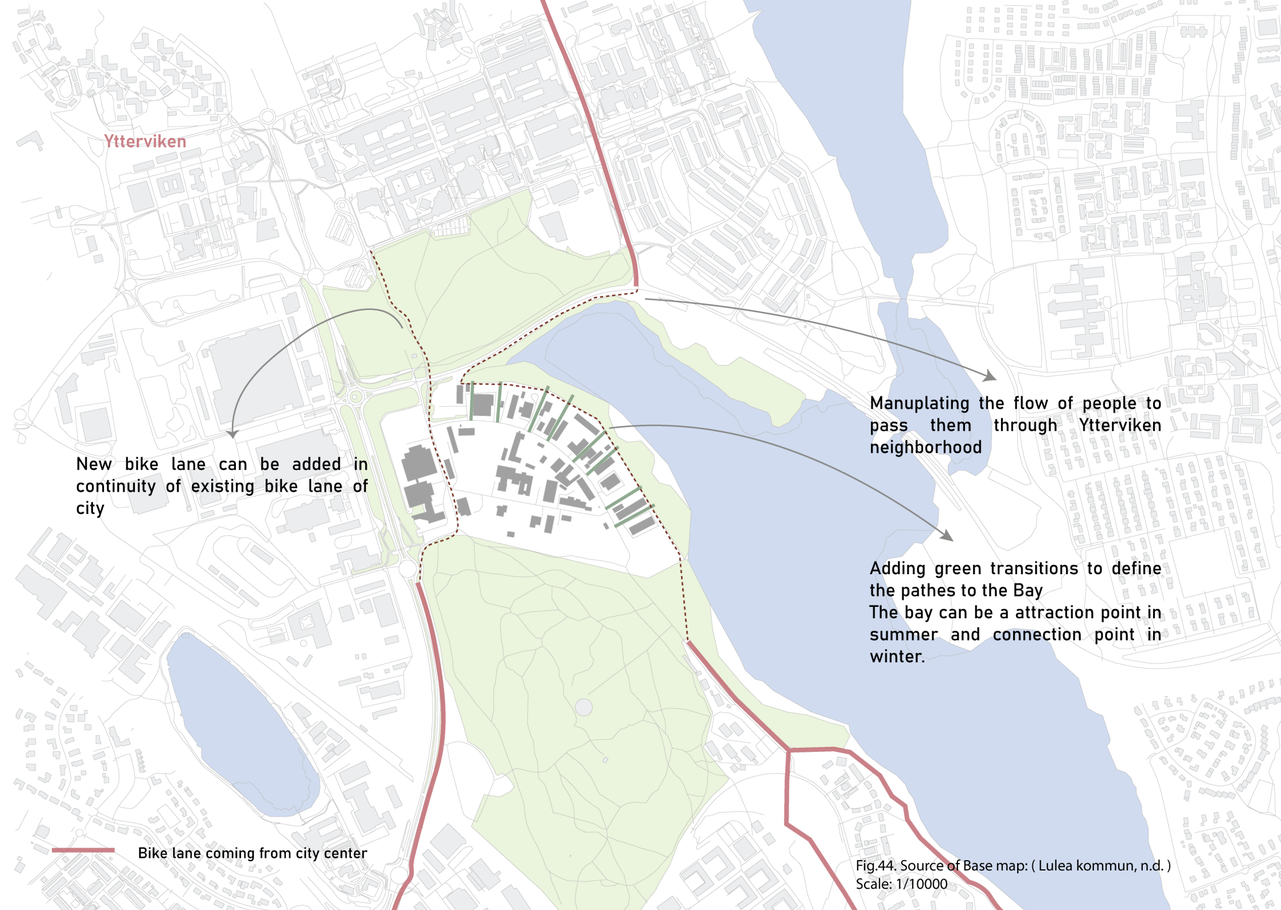


Fig.44. Source of Base map: (Lulea kommun, n.d.)
Scale: 1/10000

3.5 Fragmented Green Network

3.5.1 Neighborhood-Scale Diagnosis (Identifying the Causes)

Vanchiglietta

Patch Greenery (Isolated Green Pockets)
Inside and around the neighborhood,There are small parks and residual greens exist.

Problems: They appear as isolated patches with unclear programming.

Two internal parks with unclear programming.

Small green triangles at intersections.

There is no Greenery Inside the Industrial area and no integeration of Green to the mobiblity.
Streets are designed for movement, not ecology

Linear Greenery
Main element: Dora River Corridor
The Dora riverbank is the strongest linear green structure in the area.

Problem: Its potential as a green corridor is largely unrealized.
The riverside path is not clearly accessible from the industrial interior.
The corridor does not extend into the neighborhood as pedestrian or ecological links.

Fig.45. Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/10000

Ytterviken

Academic Park (Campus Green Landscape)

Coastal Greenery (Bay Edge)

Forest Greenery (Natural Edges)
This forest acts as a strong ecological corridor and contributes to high air quality.
Problems: It creates a soft physical barrier Which is visually pleasant but spatially isolating.

Absence of greenery inside the area,leaving Ytterviken with a fragmented green structure.

Fig.46. Source of Base map: (Lulea kommun, n.d.)
Scale: 1/10000

3.5.2 Urban-Scale Interpretation (Understanding city's Structural Logic)

Turin

Fig.47.Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/40000

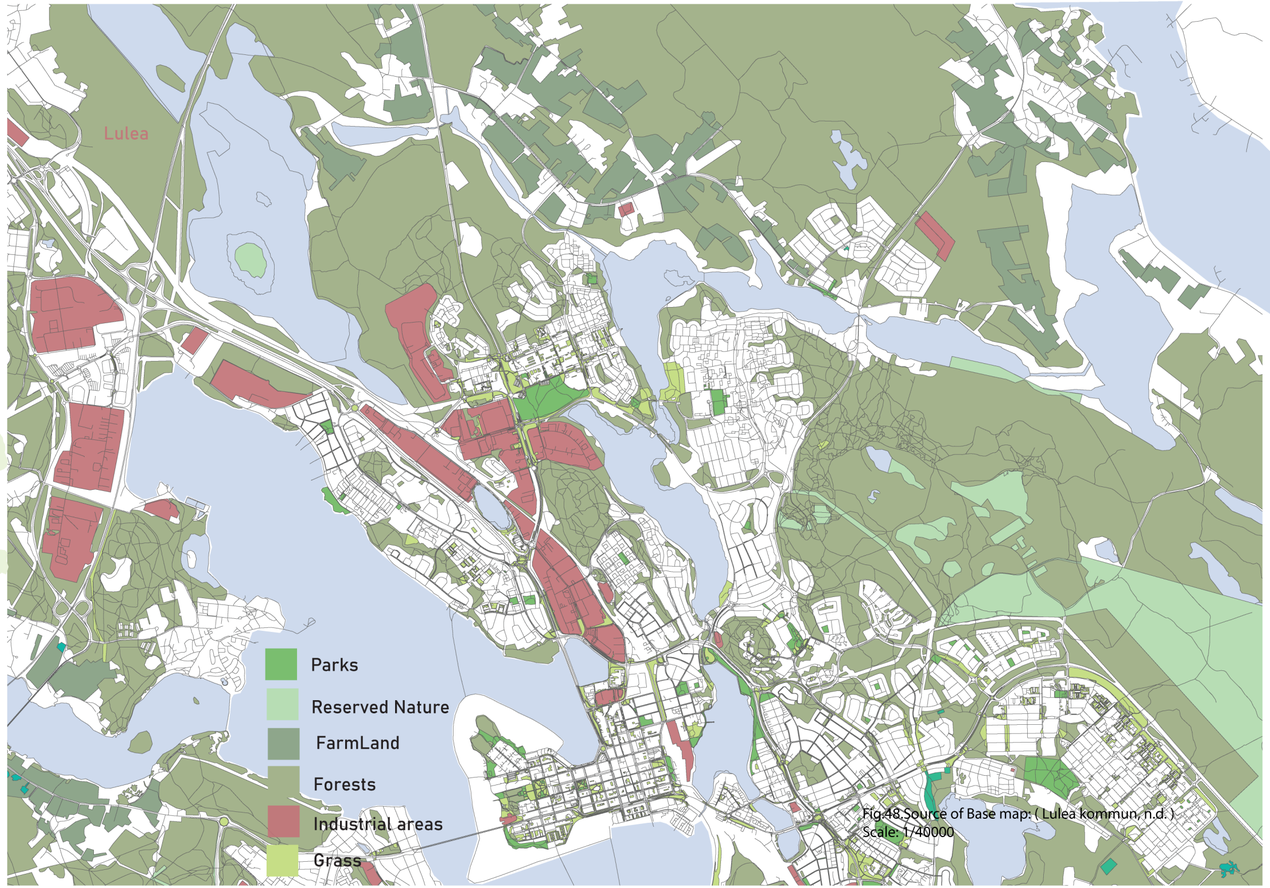


Fig.48.Source of Base map: (Lulea kommun, n.d.)
Scale: 1/40000

3.5.2 Urban-Scale Interpretation (Understanding city's Structural Logic)

When we look at the parks and green areas near the Dora River, we see that the river acts as an ecological spine, along which several parks are located. However, in the areas closest to our neighborhood across the river, the only parks are Parco Colletta and Parco Crescenzio. This makes them particularly important for the surrounding context.

If our neighborhood becomes better integrated with these green spaces, Vanchiglietta will no longer be isolated. By connecting to these green areas, it can also become better integrated with adjacent neighborhoods. This integration would allow the surrounding districts to connect more effectively to these parks as well. For now, Vanchiglietta itself is a barrier between these parks, preventing them from connecting to each other and to the other neighborhoods.

Nordic planning principles emphasize preservation before addition, following the **Avoid–Mitigate–Compensate** framework and Sweden's Green Infrastructure Strategy. Both stress that existing ecological corridors must be protected from industrial encroachment.
Turin's approach — though different — still strongly supports green infrastructure through regeneration, reconnection of city and nature, and multi-scale green networks.
Turin implements a comprehensive system of green and blue infrastructure, combining public parks, riverside corridors, peri-urban green belts and urban-rural interfaces, rather than solely preserving pre-existing ecological corridors.

3.5.3 Context-Based Strategies

Vanchiglietta

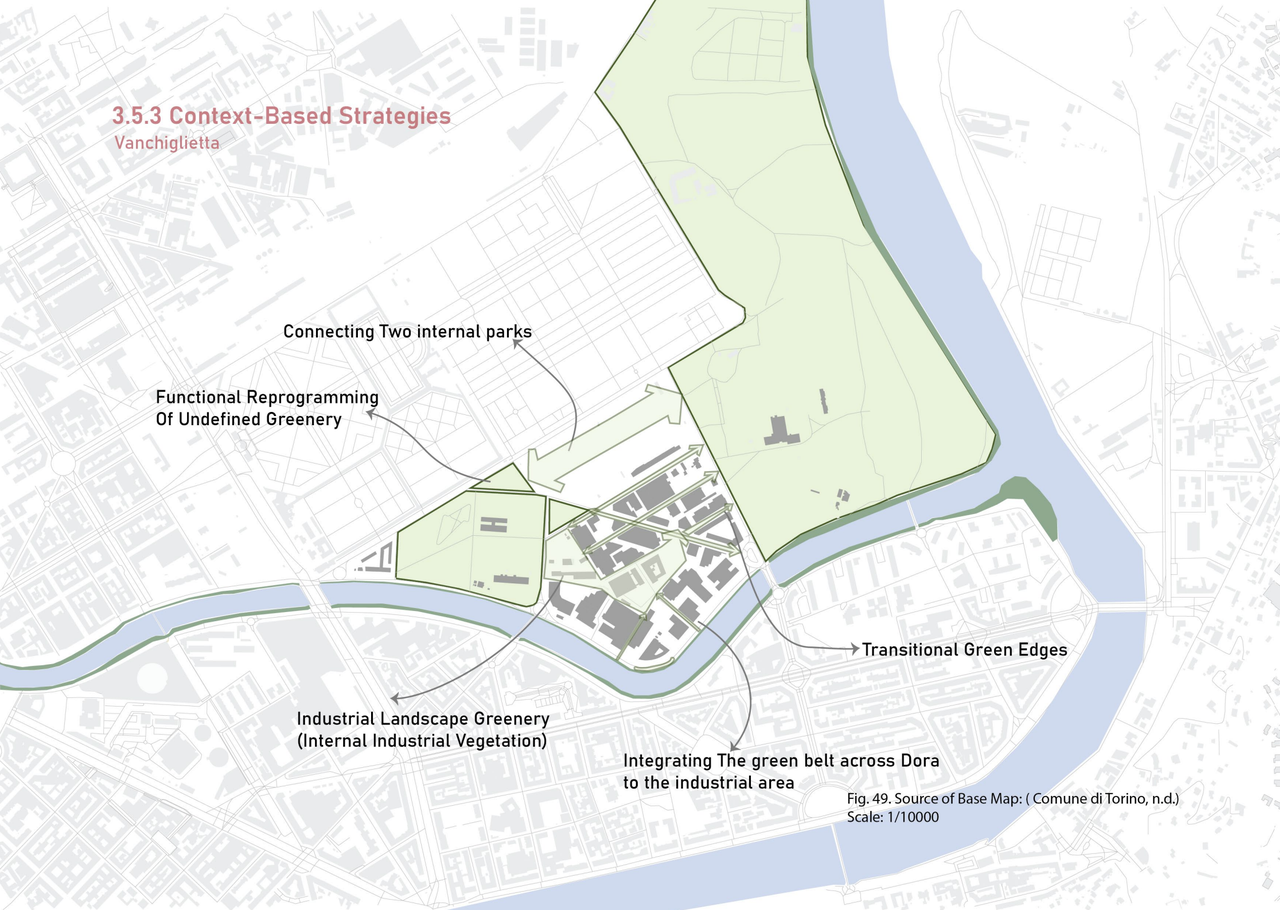


Fig. 49. Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/10000

Ytterviken

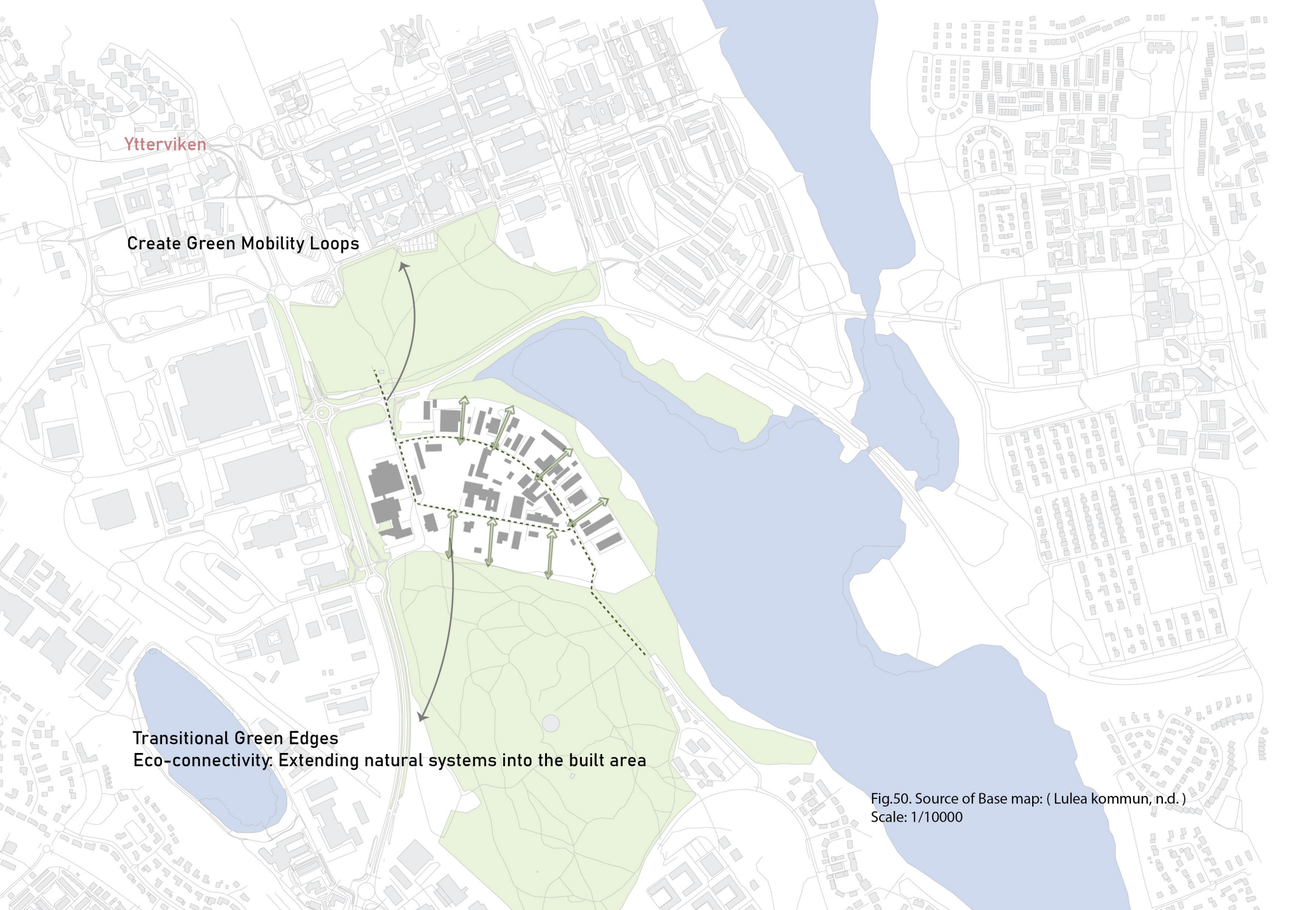
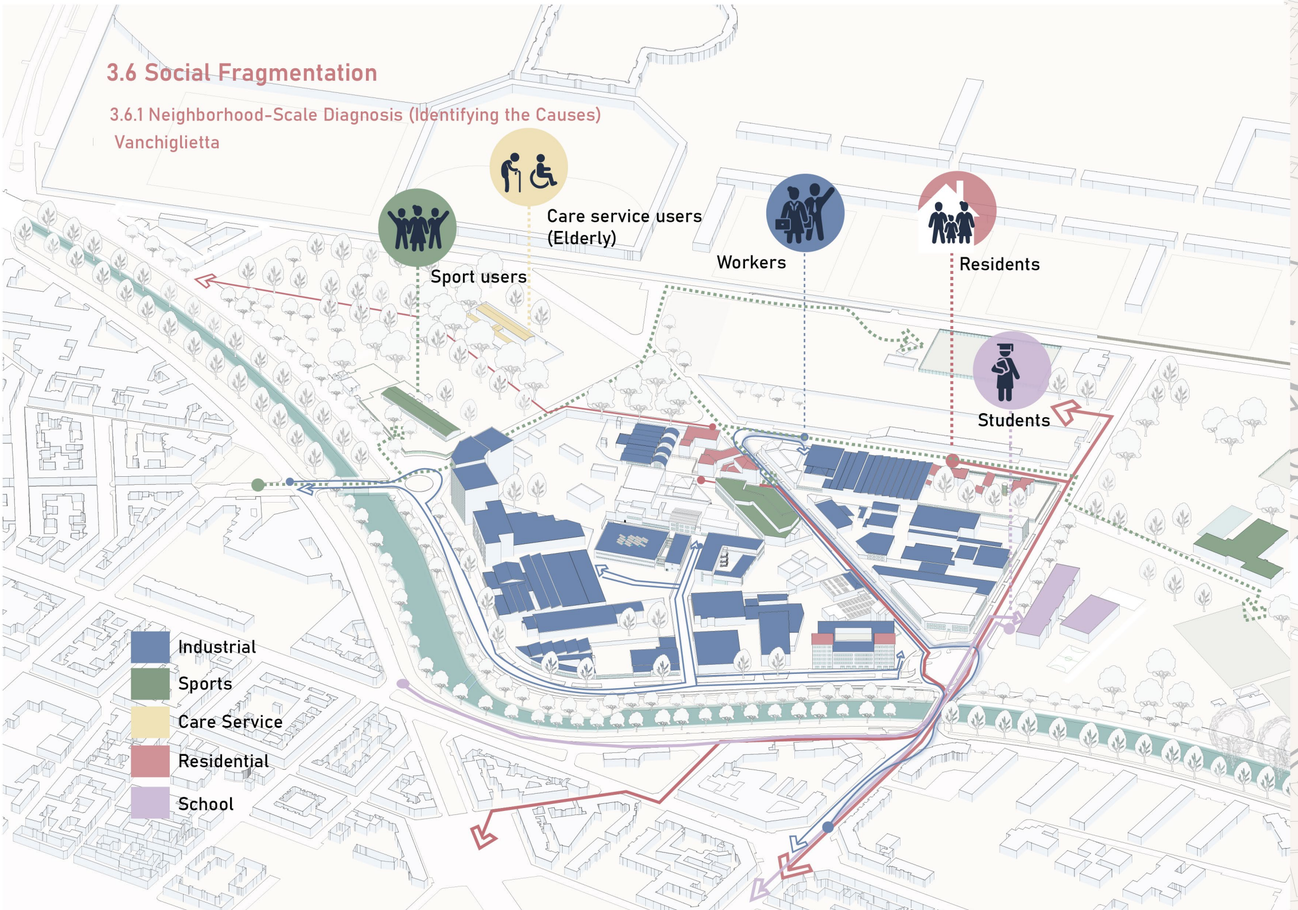


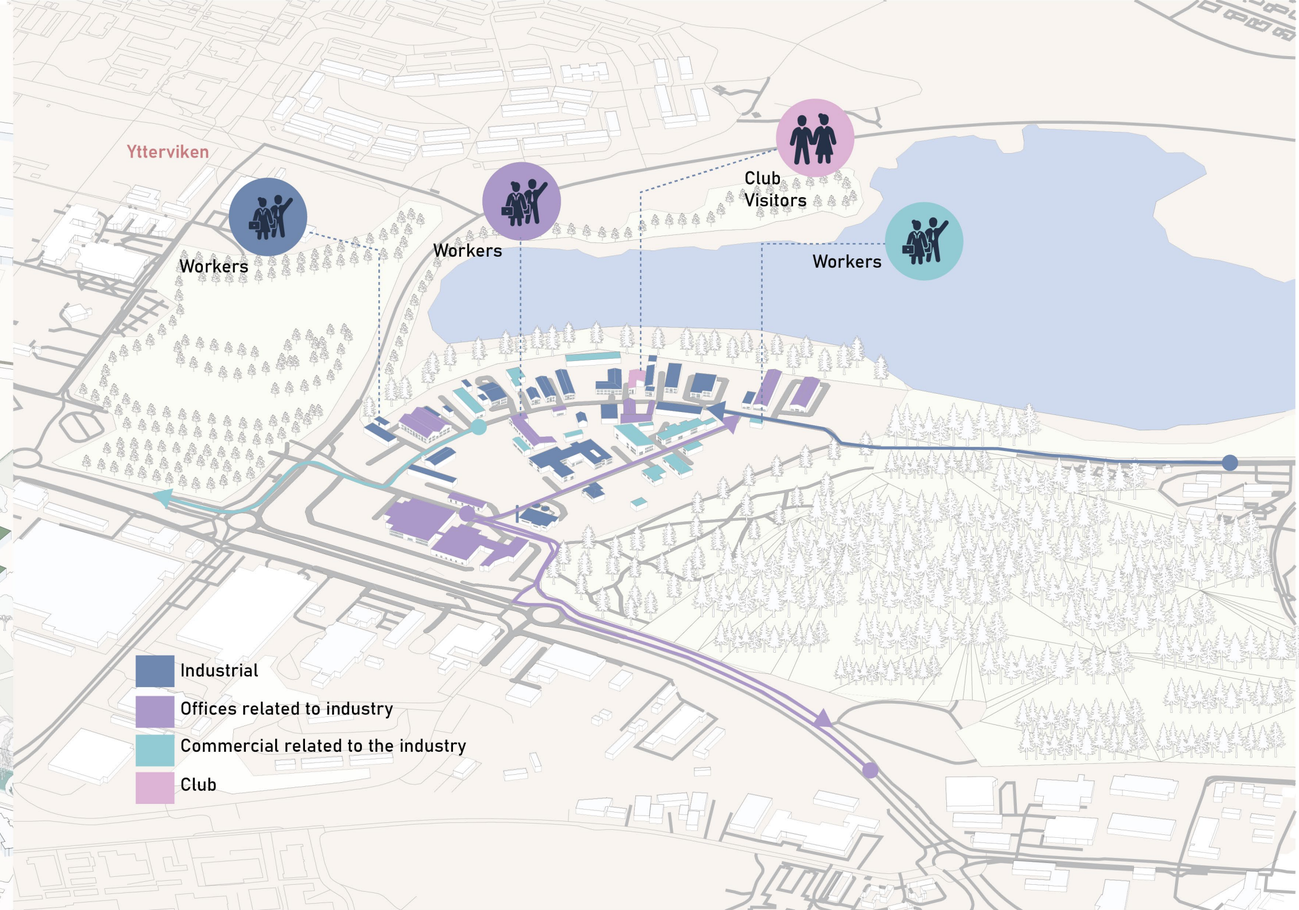
Fig.50. Source of Base map: (Lulea kommun, n.d.)
Scale: 1/10000

3.6 Social Fragmentation

3.6.1 Neighborhood-Scale Diagnosis (Identifying the Causes)

Vanchiglietta





3.6.1 Neighborhood-Scale Diagnosis (Identifying the Causes)

It is obvious that in both Ytteviken and Vanchiglietta, part of the social fragmentation is due to spatial isolation, But when we Compare the function map of Vanchiglietta and Ytterviken, There is a main Difference between their user diversity which is very influential on social fragmentation.
In Vanchiglietta there is a diversity of Internal users: Workers, Residnets,Students,Eldery people.
But in Ytterviken, the internal users are almost exclusively Workers. This mono-functional user groups already sets important limits for the social life of the area.
Ytterviken lacks the fundemental variety of people that make social life possible.
As a result, Ytterviken becomes a socially minimal environment, where fragmentation is not only due to spatial isolation, but also the absence of user diversity.

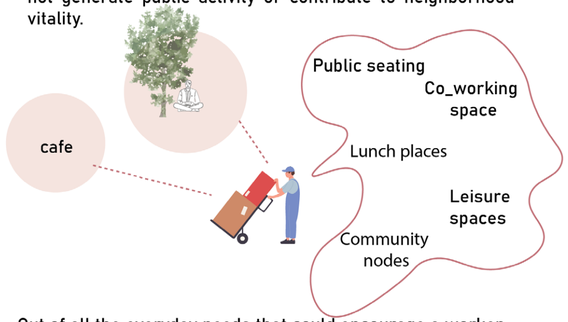
However, to effectively reduce social fragmentation, it is Important to first identify the diverse needs of the neighborhood's users. And then evaluate which needs are supported by the existing urban environment, and which remain unmet, it becomes possible to define targeted interventions that enhance inclusivity and strengthen social cohesion.

Vanchiglietta

Users already inside the neighborhood

Workers

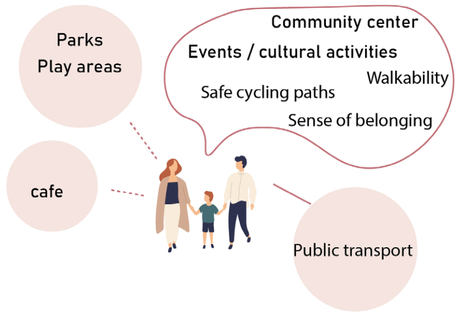
Workers represent the largest daily user group, yet their presence is strictly limited to work-related activities. Almost all ground-floor uses around them are industrial, storage, or service yards, with very few cafés, public seating areas, or leisure spaces. According to Gehl (2010), monofunctional work environments fail to support social life because they do not offer reasons to stay. In Vanchiglietta, workers leave the area immediately after work, meaning their presence does not generate public activity or contribute to neighborhood vitality.



Out of all the everyday needs that could encourage a worker to stay in the neighborhood, only two are present—cafés and green areas—and even these are limited in quality, weakly connected, and insufficiently designed to support real social use.

Residents

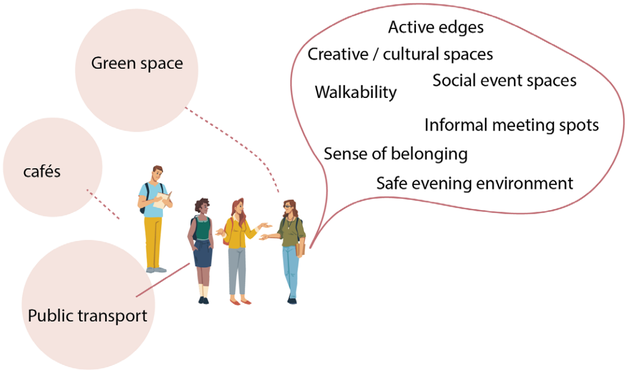
Residents face similar limitations. Although housing exists in the area, the neighborhood offers very few public-oriented functions and lacks designed, accessible public spaces that could support community interaction. The nearby parks—while present—are poorly readable, disconnected, and lack clear paths or spatial identity, which limits their usability. As Madanipour (Social exclusion and space_2017) argues, when residents cannot find places for meeting, belonging, and everyday social use, the neighborhood loses its social cohesion. In Vanchiglietta, the absence of such social infrastructure weakens the potential for community life.



Residents live here, but the neighborhood does not provide enough reasons for them to stay, interact, or feel connected.

Students

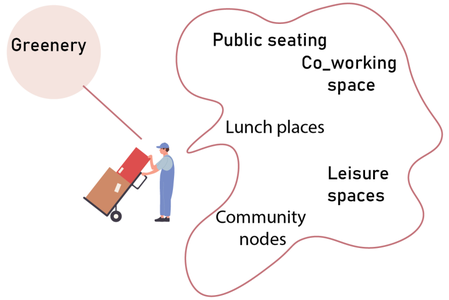
As we analyzed the functions, there is an art school nearby Vanchiglietta. Students who are the users of this school in the area cannot find supportive spaces to for after-school activities. Spaces that can improve the life and interaction of students are hangout spots, study areas, or creative public spaces. It is in these areas that students can gather, work, or exhibit their projects. Oldenburg (1999) emphasizes the importance of "third places" (neither home nor school) for youth socialization. In Vanchiglietta, students can't find the answer to their needs and they are forced to leave the area immediately after school time.



Students have almost no reasons to stay in the neighborhood after school.

Ytterviken

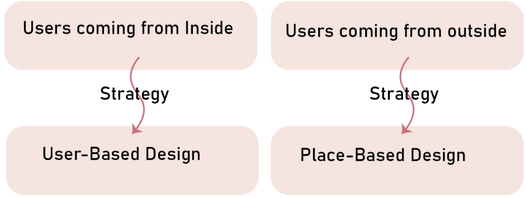
As previously discussed, Ytterviken presents an extremely homogeneous user profile, composed almost exclusively of workers. Like Vanchiglietta, the neighborhood does not provide the necessary range of functions to support users beyond their work-related activities. As a result, workers cannot meet most of their daily needs within the neighborhood. The only need that is currently addressed is access to green areas, while all other social, commercial, and service-related needs remain unmet, reinforcing the functional and social fragmentation of the district.



After the analysis in both neighborhoods, We can see that both vanchiglietta and ytterviken don't provide the spatial or functional conditions that is necessary to answer the everyday needs of users.
There are no designed public spaces for any of users helping interaction, and as a result social interactions rarely happen.

In the next Step we try to understand the users coming from outside of neighborhoods and their needs.
For users from outside the situation is different. People from outside do not interact with Vanchiglietta and Ytterviken just because they have no reason to come. Their absence is not because they don't find the answer to their specific needs, but because of the fact that the neighborhood currently offers no visible attractions, public spaces, or activities that would attract them in.

Because these external users are not defined for us and diverse, it is not easy to design specific programs for their specific needs. Instead, the strategy could be place-based. It means that the strategy is not user-based. It is focusing on improving the neighborhood's existing potentials, so that Vanchiglietta and Ytterviken could become attracting through their own characters.



Vanchiglietta

Users Coming from outside analysis

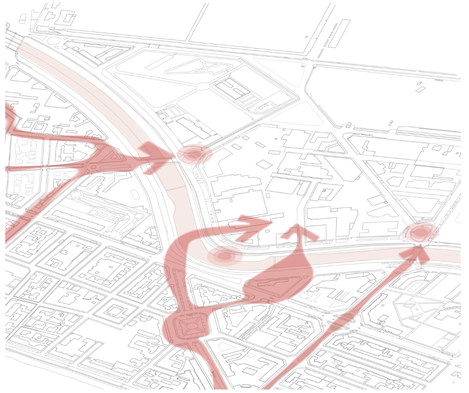
Based on our strategy we need to identify the places that we want to improve.

One of the existing potentials is the presence of sport facilities, which already attract a small number of visitors from outside of Vanchiglietta.
At the moment, these facilities function sufficiently for the internal users, but by improving their quality, accessibility, they could become a stronger reason of attractingexternal users.

Existing sport Facilities

Improved sport Facilities

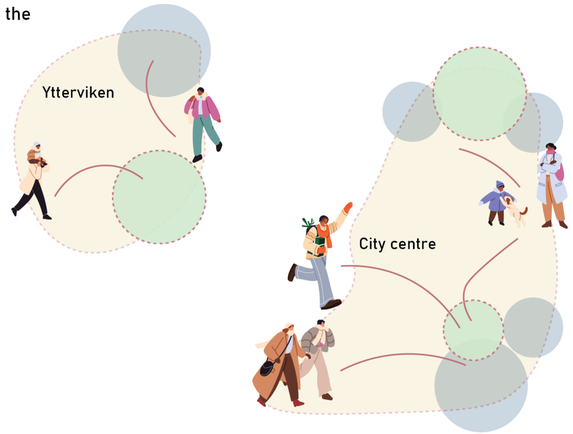
At the same time, enhancing other intrinsic assets, such as the parks, the riverfront, and the neighborhood's entrances, reinforces the area's identity and makes it more welcoming. Importantly, public spaces designed primarily to meet the needs of internal users will naturally attract external users as well, because high-quality, well-connected environments tend to generate broader urban appeal.



Ytterviken

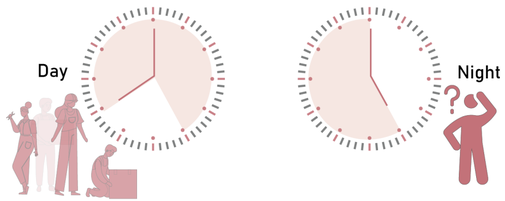
Users Coming from outside analysis

Attracting external users to Ytterviken is significantly more challenging than in Turin because the area is physically distant from the rest of the city. As a result, working on its natural potentials—such as the bay or the surrounding forest—cannot attract a large number of city-wide users, since similar landscapes are widely available throughout Luleå. However, if these natural areas are properly designed and made accessible, they can attract users from nearby districts, especially residents of Porsön and students from the university, for whom the distance is manageable and the spaces can offer meaningful everyday value.

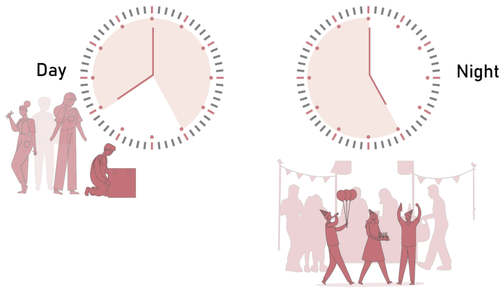


An additional difficulty emerges when trying to enhance internal social life.
Because internal users are almost exclusively workers, any attempt to design new spaces or programs inevitably risks reinforcing the mono-functionality of the neighborhood. Spaces created for workers—canteens, outdoor resting areas, small gathering spots—help internal social life during the day but do little to bring new user groups into the area. Without residents, students, or visitors, the social structure remains flat, and the neighborhood continues to lack the diversity of users required for vibrant daily activity.

Another challenge relates to time. Since the majority of users are workers, the neighborhood becomes completely empty during evenings and weekends. This temporal emptiness contributes to a sense of abandonment and further discourages any external users from visiting the area outside working hours.



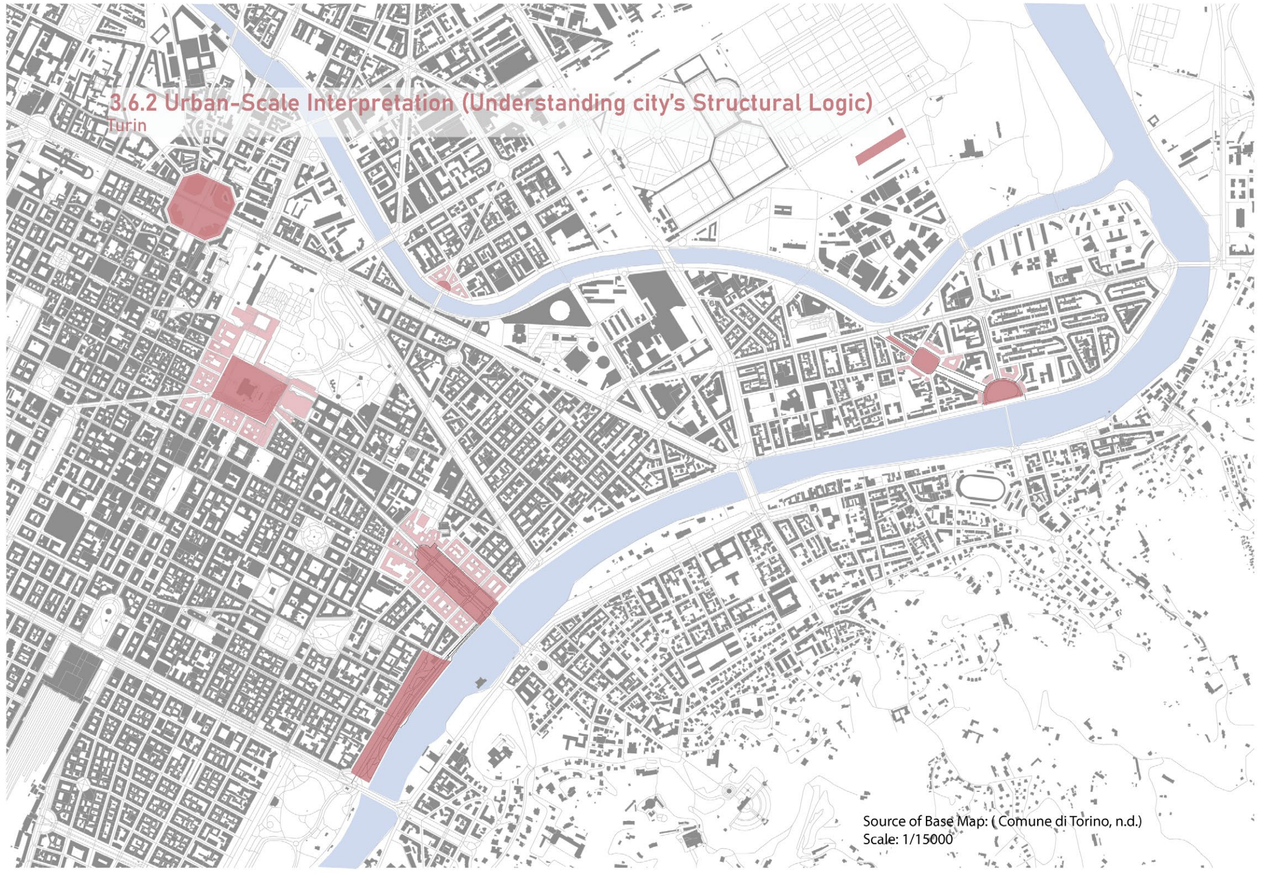
However, this temporal emptiness can also be seen as an opportunity. Spaces designed for workers could be reprogrammed for public use after working hours, hosting events or activities that attract users from outside the neighborhood, thereby increasing both the temporal and social vibrancy of the area.
Interestingly, Ytterviken already contains one nightclub that operates during night hours—even though it sits among industrial buildings. This shows that the area has a latent potential to host nighttime or weekend activities, even if it is currently underutilized. Strengthening this dual identity—industrial by day, social or cultural by night—could become a strategy to counteract the social emptiness caused by the mono-functional user profile.



Daytime: supporting workers (rest, lunch, informal gatherings)
Evenings/weekends: hosting public events, small markets, community activities, or cultural progra

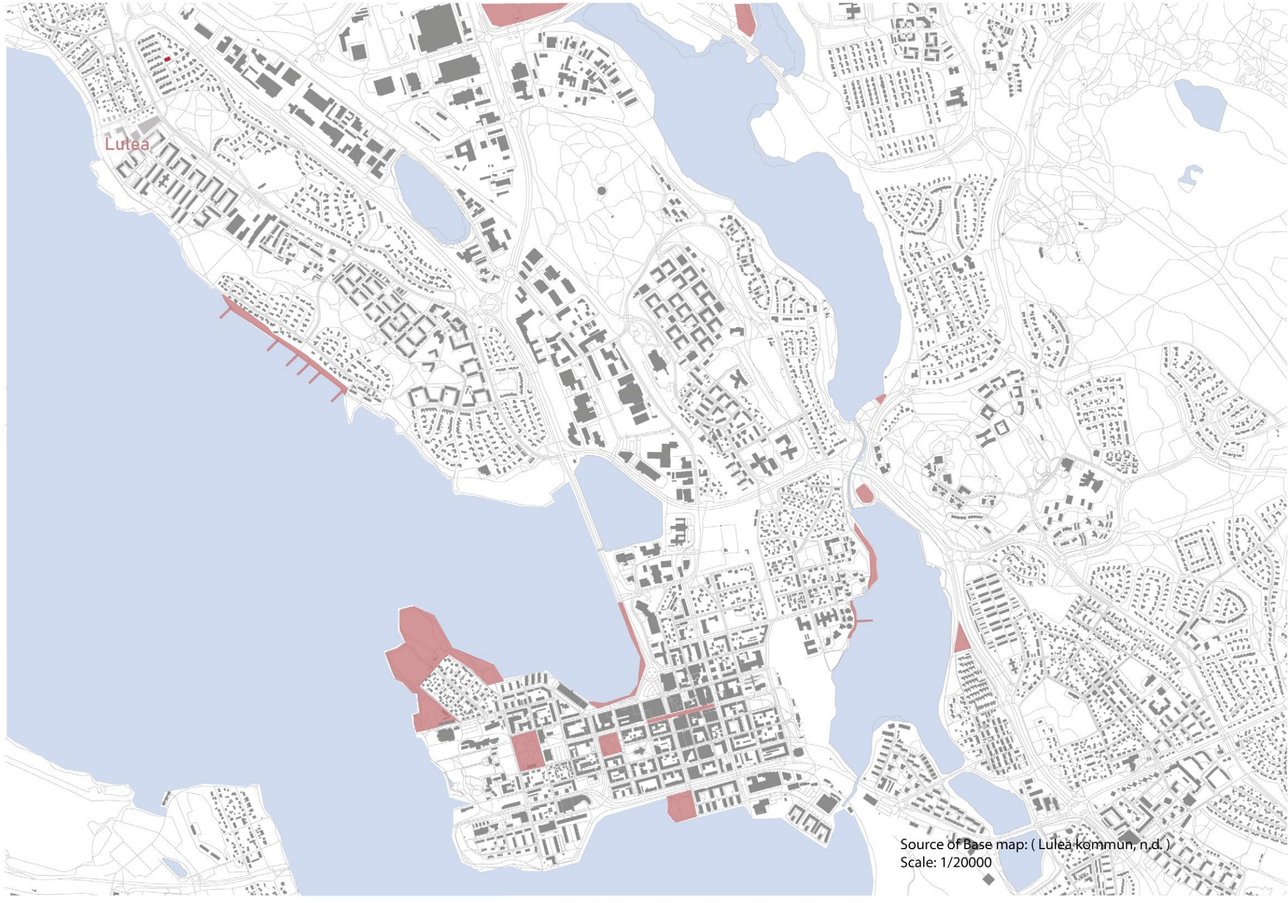
3.6.2 Urban-Scale Interpretation (Understanding city's Structural Logic)

Turin



Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/15000

Lutea



Source of Base map: (Luleå kommun, n.d.)
Scale: 1/20000

3.6.2 Urban-Scale Interpretation (Understanding city's Structural Logic)

Turin

Fig.53. Street market of Porta Palazzo in piazza della Repubblica
Source: (PiemonteTopNews, n.d.)

Fig.54. Piazza Vittorio Veneto
Source: (Adobe Stock, n.d.)

Fig.55.Panche di TOrino near Vanchiglietta
(Panche di Torino, Facebook, n.d.)

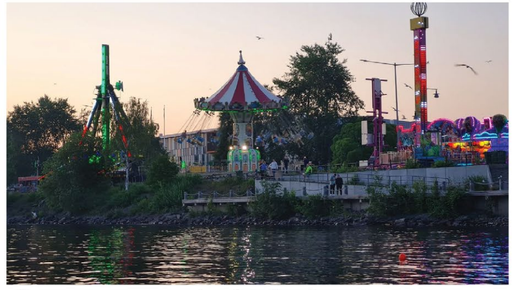
Fig.56. Panoramic view of Piazza Castello with Palazzo Madama on the left, Littoria Tower far in the middle, and the building seat of the Regional Government on the right.
Source: (Adobe Stock, n.d.)

When we look at the pictures and maps of Turin's open outdoor spaces we can understand they are generally more open and plaza-based,around large squares, public courtyards, and street intersections.
These spaces are important not only for circulation but also for their social functions, helping differnt activities to happen.

Lulea

Gathering in Yteerviken

Restaurants near sea



Temporary amusement park in the city center

Public gathering near sea in the city center

In Luleå, on the other hand, when we look at the maps and pictures, we can see that most outdoor spaces are closely connected to natural landscapes. Many social activities in Luleå are oriented toward nature — taking place near forests, waterfronts, and open green areas rather than within dense urban plazas.

Swimming Point in city center

Fig.57. Pictures of public events in lulea
Source: All pictures taken by authours (2025)

Fragmented Green Network

Context-Based Strategies
Vanchiglietta

Improving Market

Opening up the space
inside the industraial area

Place near School as a
gathering point for students

Designing Infront of the cemetery as an open space
to define the entrance and opening up the space

Designing Public gathering point
inside of The park

Entrances of the neighborhood
as public open space

Designing waterfront
to link Dora and Neighborhood

Source of Base Map: (Comune di Torino, n.d.)
Scale: 1/10000

Context-Based Strategies
Ytterviken

Veiw point to the Bay

Shared space between buildings
that can be used by workers in the worktime
and can be used by public in the evening

Source of Base map: (Lulea kommun, n.d.)
Scale: 1/10000

3.7 Conclusion

The comparison between Vanchiglietta (Turin) and Ytterviken (Luleå) Shows that differences in urban context strongly effect the type and effectiveness of regenerative strategies. In Luleå, interventions tend to be minimal and nature-based, because the urban fabric is low in density and dispersed. Outdoor public life tend toward natural landscapes such as waterfronts, forests, and open green spaces. As a result, for example the sense of isolation in Ytterviken cannot be fully removed; it can only be mitigated using small-scale, context-sensitive interventions that integrate social activities with nature. The isolation is not just a design issue — it is embedded in the urban model itself.

In contrast, Vanchiglietta benefits from higher urban density and a network of streets, squares, and public spaces that support more social interaction. Turin's regenerative strategies are plaza-based and toward open urban spaces rather than natural landscapes. This means the neighborhood is relatively less isolated, and the potential for integration depends on improving connective public spaces, improving accessibility, and reimagining unused or undervalued urban pockets. Here, interventions can be larger, more visible, and more transformative.

Ultimately, It is obvious that both contexts require strategies to improve connectivity, but the role of the urban fabric is decisive. In Luleå, regeneration depends on strengthening natural social nodes, while in Turin, regeneration depends on existing urban infrastructure and public space systems. Therefore, strategies are not interchangeable; they must be tailored to the spatial, social, and environmental characteristics of each city.

04

DESIGN PROPOSAL

LIVING WITH INDUSTRY
Chapter 3

In this chapter we Propose Our New Masterplans For vanchiglietta and Ytterviken
Based On What we Studies In Chapter3

Vanchiglietta

MASTER PLAN

In designing this masterplan, we implemented the strategies developed in the comparative chapters. These strategies are context-specific and respond directly to the needs of both the city and the neighborhood. By grounding the design in this analysis, the masterplan aims to address existing challenges while strengthening local identity and supporting long-term development.

In the design for Vanchiglietta, we focused on creating an integrated and well-functioning industrial area that reconnects with the surrounding urban fabric. The proposal strengthens the relationship between the industrial zone and the two adjacent parks, ensuring that both workers and residents can enjoy a pleasant and accessible environment. By improving public spaces, enhancing connectivity, and introducing new areas for social interaction, the project aims to help the neighborhood reintegrate with the city and reclaim its role as an active, livable part of Turin.

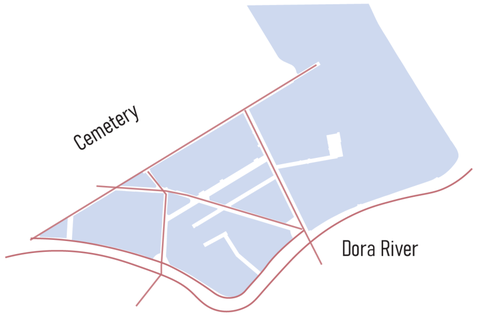
SPATIAL STRATEGIES AGAINST ISOLATION

We focused on identifying the key points that would help de-isolate the neighborhood, such as the two main entrances, the space in front of the cemetery, and the area near the school.
Our goal was to enhance and strengthen these entrances to create better connections with the surrounding urban fabric.

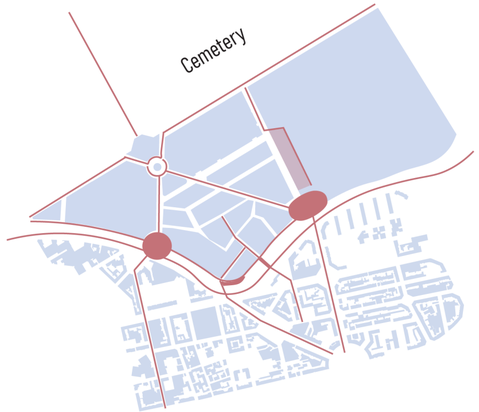
Within the neighborhood, we also proposed two new pedestrian bridges to improve connectivity with the surrounding context. Between these bridges, we designed a viewpoint overlooking the river to reinforce the relationship between them and provide a visual anchor.

The continuous path created by the two bridges naturally guides visitors into the neighborhood and towards its core area, enhancing accessibility and spatial coherence.
In the space in front of the cemetery, we redesigned the cemetery access itself. By redefining its entrance, we aimed to make the existing pedestrian path inside the cemetery more legible and usable. Additionally, by slightly setting the entrance back from the cemetery wall, we created a more open and breathable public space in front of it.

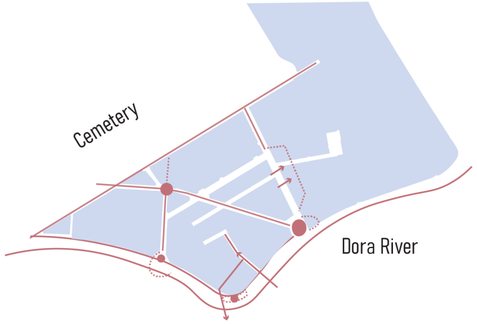
Near the school, we observed that the street acted as a rigid boundary, limiting permeability and isolating the neighborhood. We therefore redesigned this edge to make it softer and more integrated with the surrounding urban fabric.



Existing sitution

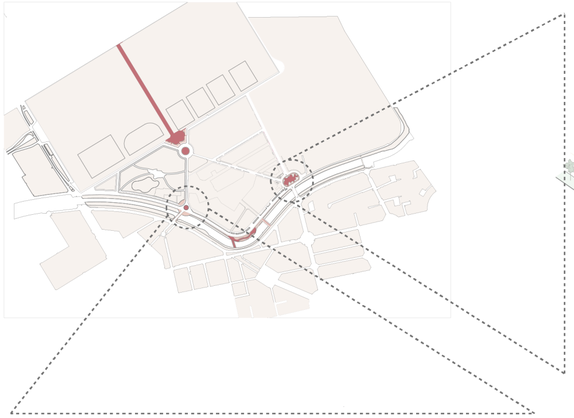


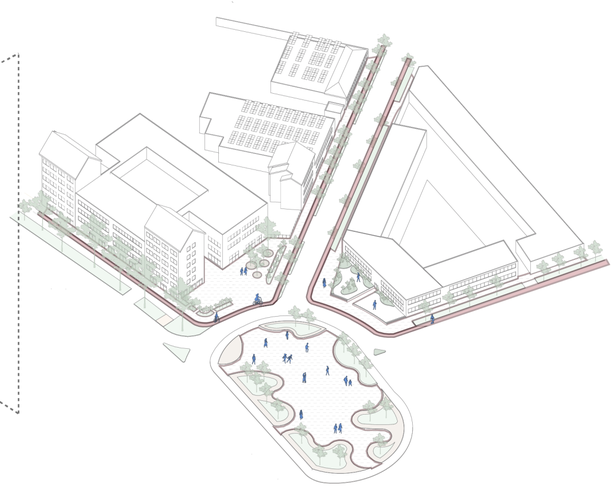
New proposal



Design strategies

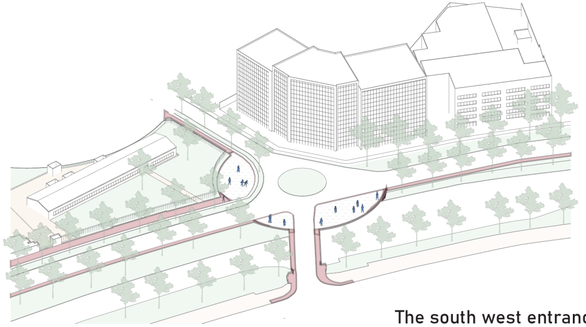
SPATIAL STRATEGIES AGAINST ISOLATION





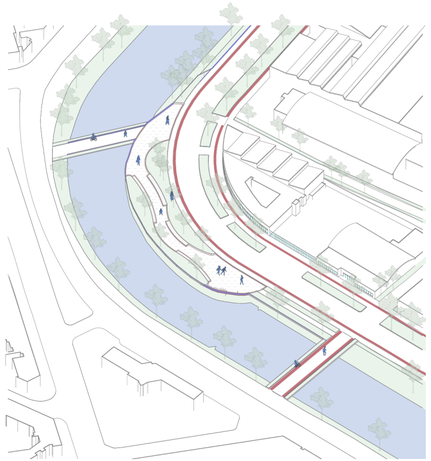
The south east entrance

This entrance which was a parking square before is redesigned. first of all we made it bigger and Integrated it with greenery. It is designed in a way to become a public square. also to strengthen it more we activated the edges near it so together they can improve vanchiglietta's Isolation



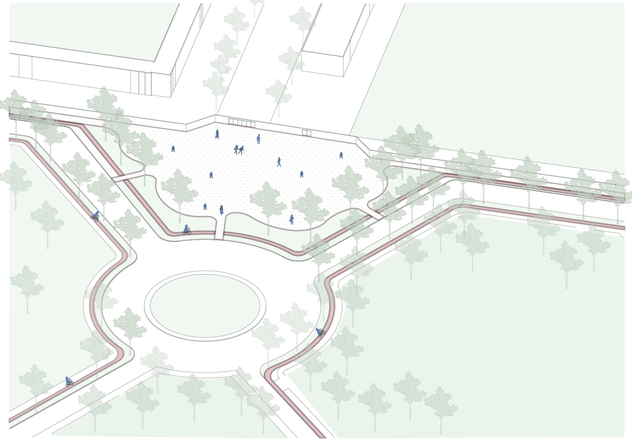
The south west entrance

This entrance is designed as a river view point to use the potential of river as attracting point



Waterfront and Bridges

This waterfront integrated with pedestrian bridges that we added can create a new connection point in vanchiglietta that is very powerful.



The Entrance of Cemetery

The palce infront of cemetery feeled very close because of presence its solid wall.
What we proposed aimed to open up the space to reduce this feeling and also to define the entrance of cemetery to attract people to use the existing path inside it that can connect them to other part.

To improve the neighborhood's connection to its surroundings, we strengthened the main linkages by defining two clear entrances and creating a strong public focal point near the river to attract visitors. Additionally, we introduced two pedestrian bridges to enhance accessibility and ensure easier movement between the neighborhood and adjacent areas. Together, these interventions help reintegrate the site into the broader urban context and support more fluid, welcoming circulation.

SPATIAL STRATEGIES AGAINST ISOLATION

Car free zone:
Inside the core block is desiend for pedestrian and bike

The existing walkway in the cemetery:
Defining the entrance of cemetery encourage people to use this path and improve the connection of vanchiglietta with neighborhoods behind the cemetery

A

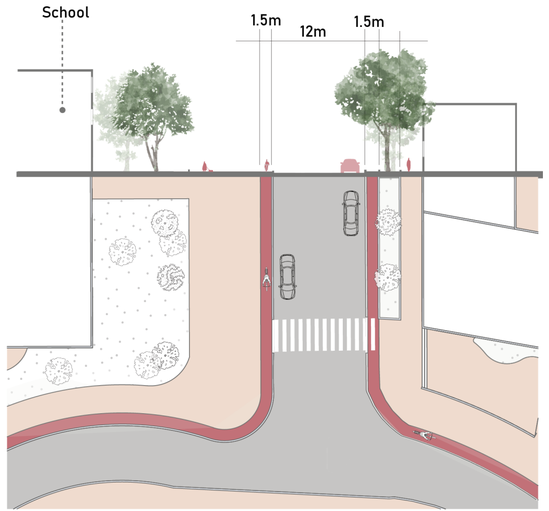
A'

Pedestrian Walkways

Bike Lane

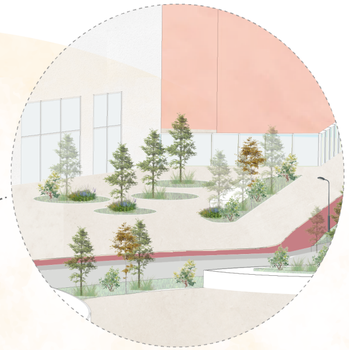
Main roads

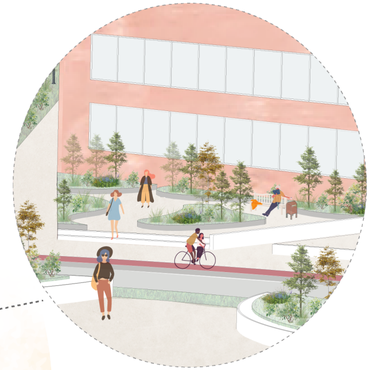
Scale: 1/5000



Section A-A'
Scale: 1/500

To overcome the neighborhood's isolation, we did not focus solely on improving its external connections; we also rethought mobility within the area itself. Inside the neighborhood, we enhanced the pedestrian network and transformed the central zone into a completely car-free area, creating a safe and comfortable environment for walking. In addition, we introduced dedicated bike lanes throughout Vanchiglietta, addressing the lack of cycling infrastructure despite its potential usefulness for both workers and residents. These interventions collectively create a more accessible, sustainable, and human-centered mobility system that supports daily life and strengthens the neighborhood's integration with the rest of the city.

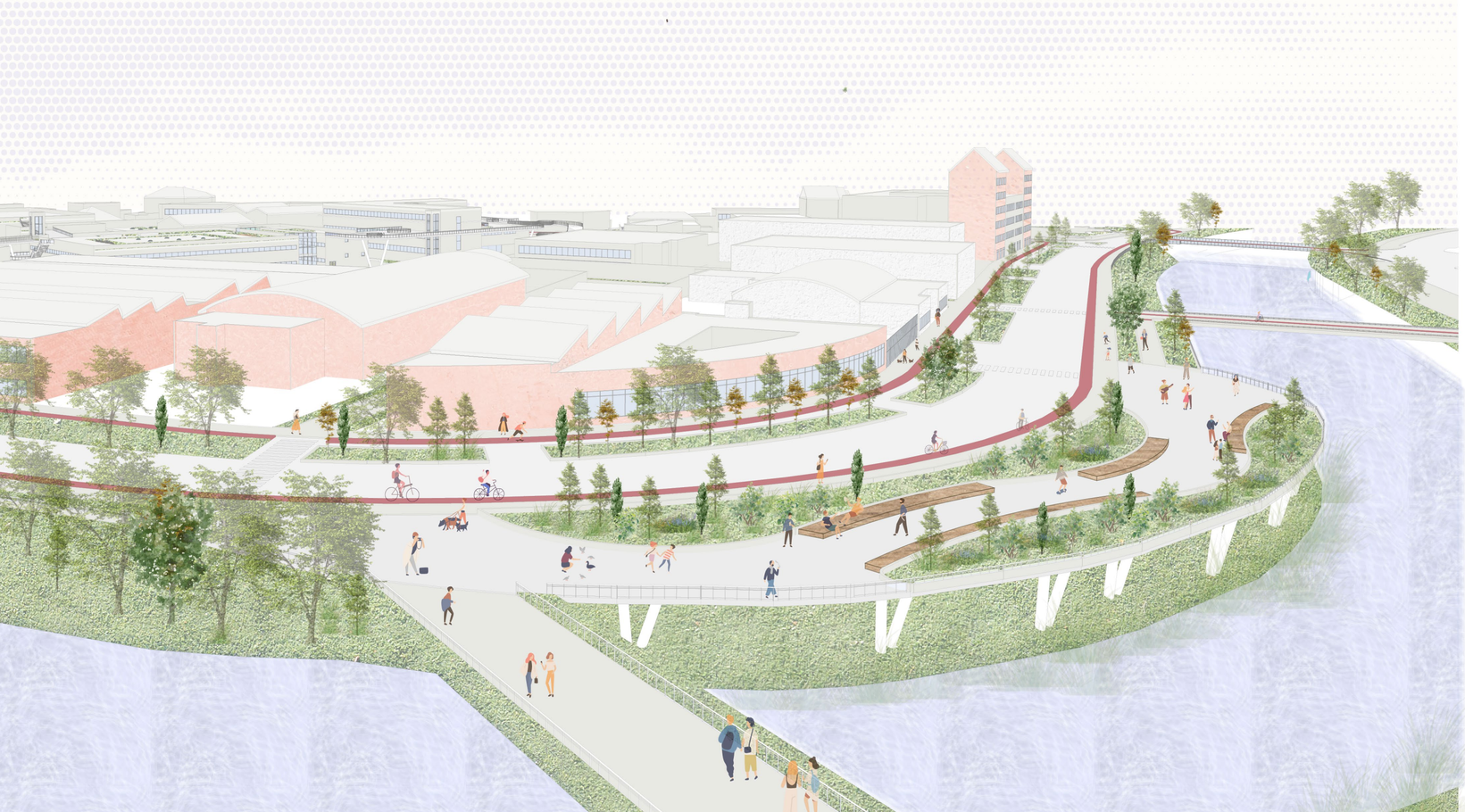




Riverside Greenery — River — Riverside Greenery — Street — Entrance Square — Street — Bike Lane — Walking Path

Section A-A'

SPATIAL STRATEGIES AGAINST ISOLATION



Riverfront View

The riverfront is designed to be attraction point for neighborhood , integrated with pedestrian bridges it make it easy from accessibility point.

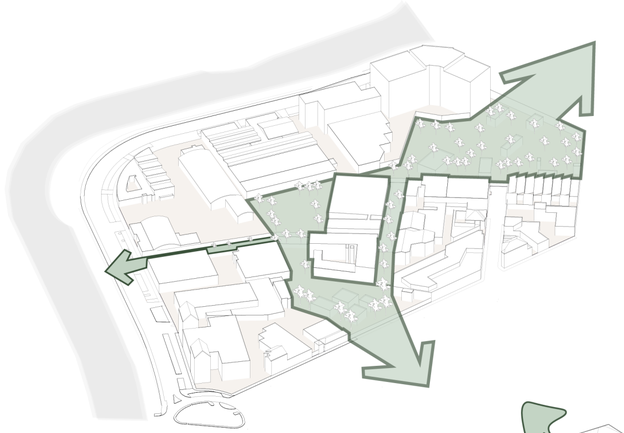
REPROGRAMMING GREENERY TO CONNECT PARKS

Existing sitution

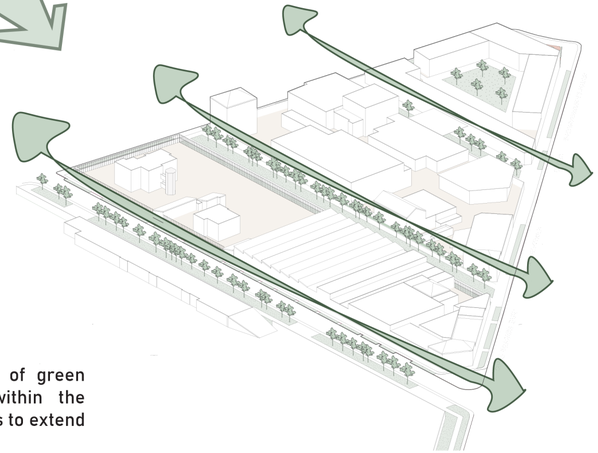
adding new functions

Designing green corridors and paths

To connect the parks and extend them into the industrial area, we developed a series of strategies.
First, we focused on designing the space between the two parks, introducing new functions and greenery to encourage people to use this area and to strengthen its connection with the parks.
dditionally, we identified a central point within the inner part of the industrial area as a key location for this connection to take place.



In the inner area, we introduced more greenery and removed some existing buildings to create larger open spaces, making the industrial core more integrated with nature and accessible to the public.



We also proposed the creation of green corridors along the streets within the industrial area, allowing the parks to extend and connect through this zone.

Sport Complex

Therapeutic garden

View1: to the Garden Designed for Elderly Care Services

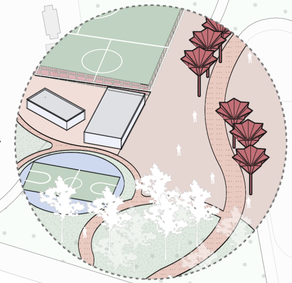
Gathering point for Events

Daily Market Area

Children Playground
situated near the elderly care service has been designed
to foster intergenerational communication and connections.

Lunch and Resting point
for Workers

Adding new Functions to Parco Crescenzio
and designing two new Parks



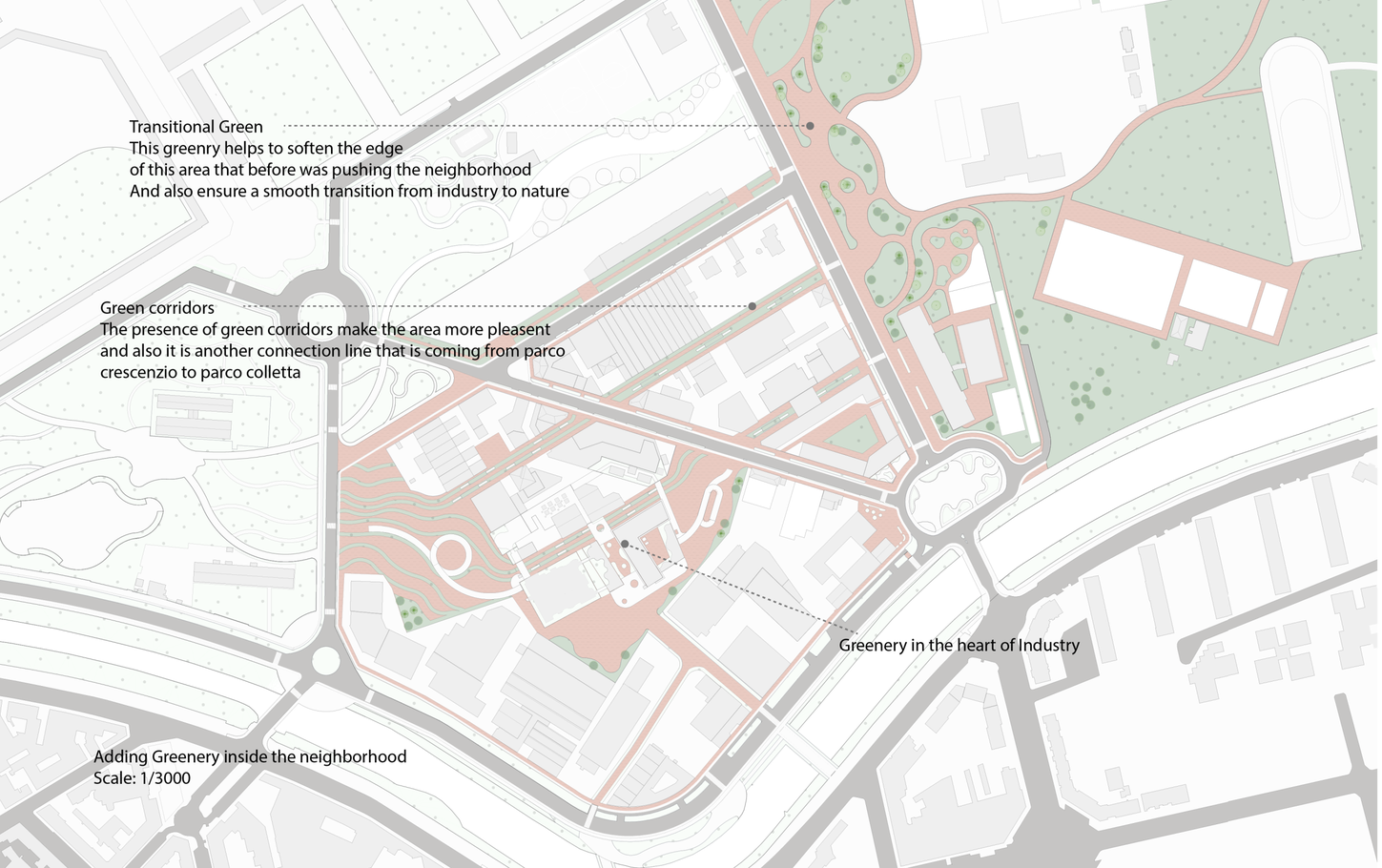
REPROGRAMMING GREENERY TO CONNECT PARKS

In order to connect Parco Crescenzio to Parco Colletta, the first step was to introduce a new green pocket between them. For this reason, two green pockets appear in the masterplan: a therapeutic garden and a small green sport complex. The functions of these spaces were chosen based on the character of the existing triangular patch, which was already full of trees but had no defined use. We saw this as a valuable opportunity for users to detach from industrial noise and reconnect with nature.

The sport complex is placed near the existing football field to reinforce its activity. We also considered that along the edge of Parco Colletta there are several sport points, and our intervention has the potential to create a strong connection to them.

Another element that supports this linkage is the existing linear daily market. By improving this area, we increased its attractiveness so that it can act as another connective line toward Parco Colletta. In this daily market, we defined a clearer pedestrian path and added water-collecting elements that provide shade while also functioning as rain collectors.

Ultimately, the path network inside Parco Crescenzio was redesigned so that it continues naturally toward the new sport complex and therapeutic garden, and eventually reaches the paths inside Parco Colletta. We used curved lines in the path design to soften the influence of the industrial surroundings, and to make the user's journey more pleasant and enjoyable.



Adding Greenery inside the neighborhood
Scale: 1/3000

REPROGRAMMING GREENERY TO CONNECT PARKS

Another important step in connecting the parks is bringing greenery into the industrial zone and the central area. By doing so, we use vegetation not only to improve the environment but also as active connectors between fragmented patches.

One type of greenery we introduced is transitional green, which helps soften hard edges and create smoother boundaries. We applied this strategy at the edges of Parco Colletta. Before, the park boundary formed a strict, straight line that was almost pushing the neighborhood away. It didn't need to be so rigid; by introducing transitional greenery, the interface becomes gentler, improving both connection and comfort. This also enhances the feeling of enclosure and protection within the neighborhood without creating harsh separations.

Another important type is green corridors. These are linear strips of greenery that work simultaneously as connection lines and as soft, pleasant paths between spaces. They not only make the area between buildings more enjoyable, but they also guide movement and visual continuity.

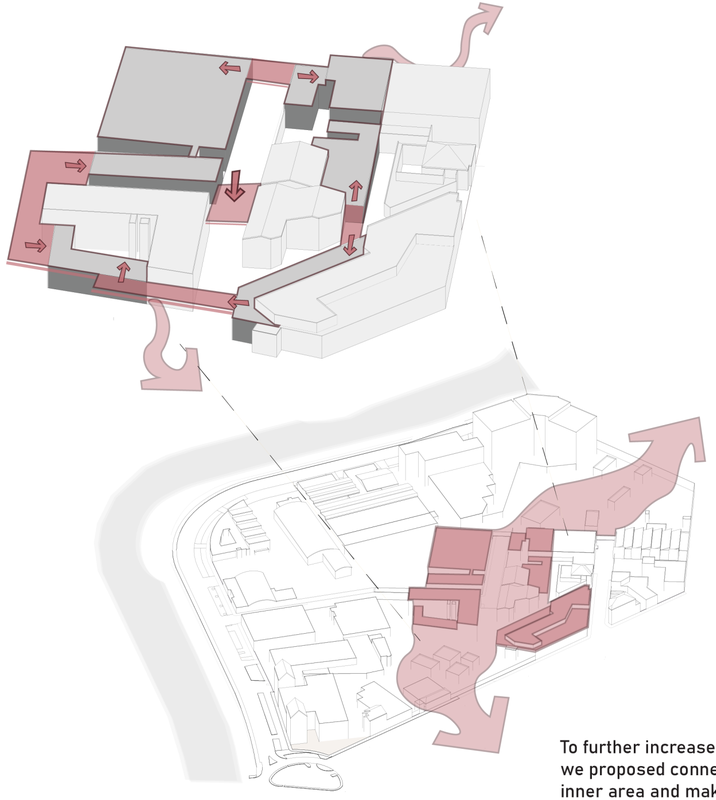
These green corridors extend into the inner area as well. First, we opened up the internal spaces to make them accessible and usable. Then we brought green lines through them to integrate industry, public life, and nature into a more cohesive and livable system.

The garden has been thoughtfully designed to cater to the needs of elderly residents in a care service setting. It provides a tranquil and accessible outdoor space, allowing seniors to engage with nature in a safe and comfortable environment.

Existing sitution

New Public Spaces added

We introduced voids within the new blocks to create public spaces and reduce overall building density, making the inner area more open and breathable while balancing built volumes with inviting open areas.



To further increase the quantity and quality of public spaces, we proposed connecting the roofs of the buildings within the inner area and making them accessible to the public.

Improving the Quality and Quantity of the public spaces in the neighborhood
Scale: 1/3000

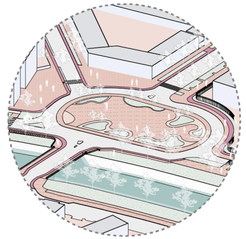
In order to improve both the quality and quantity of public life, the first strategy is to open up the core area and prioritize pedestrians. When people can walk freely and comfortably, opportunities for social interaction naturally appear. In this sense, the isolation strategies and greenery strategies do not stand alone—both support and enhance the social dimension.

For example, the entrances that we improved to reduce isolation are not only access points; they become potential public spaces where people gather and move. Similarly, the bridges we introduced to reduce barriers were positioned in a way that directly connects pedestrians to the core area, allowing social interactions to take place where they are most needed.

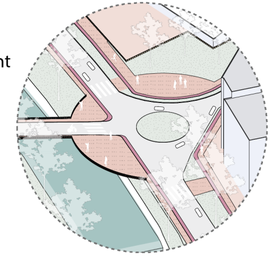
This relationship is not one-directional. For instance, the waterfront is designed as an attraction point to improve public life; it encourages people from outside to enter the area. When connected with the two bridges, this space becomes even more powerful and accessible, effectively creating a continuous social spine.

Additionally, new public spaces have been integrated inside the parks, including gathering areas, event zones, lunch spots for workers, playgrounds for children, and sport-focused spaces. These diverse public nodes create a dynamic network that supports everyday activities while strengthening social cohesion.

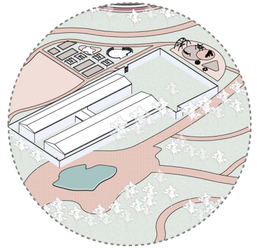
Entrance as a public square

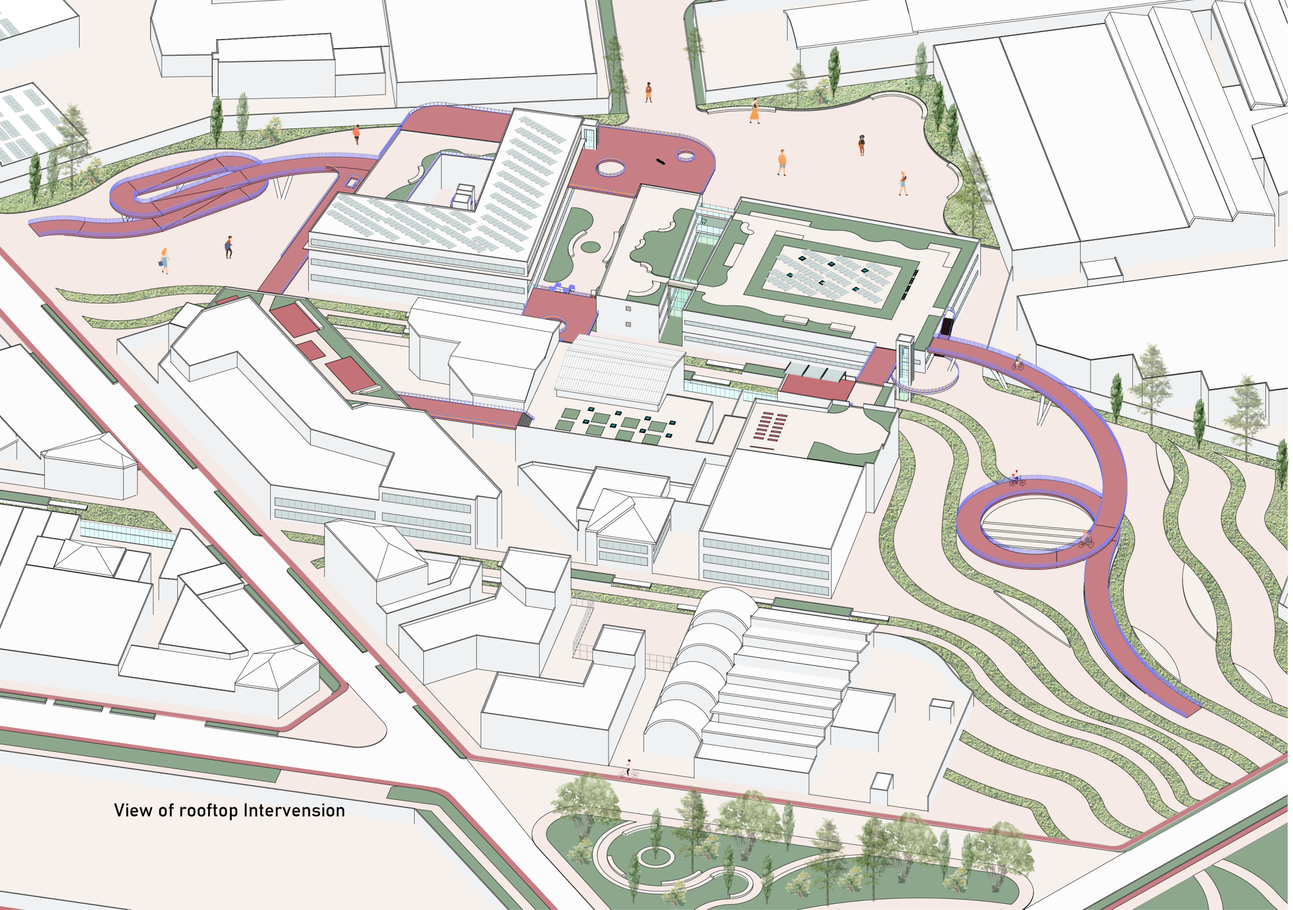


Entrance as a waterfront point



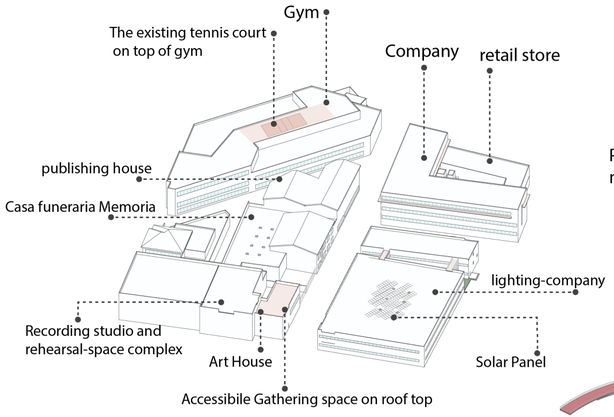
Public spces inside the park to have community garden for elderly and playground of children



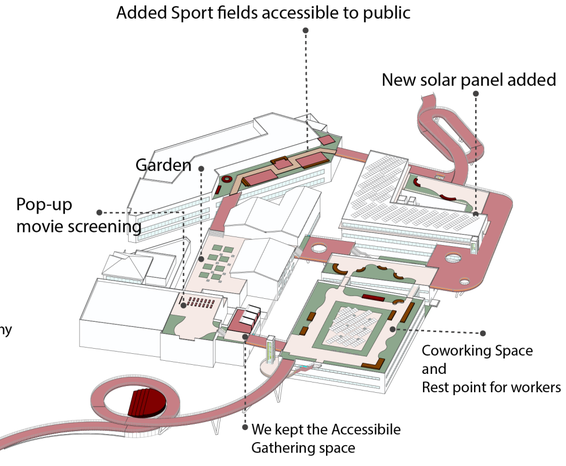


View of rooftop Intervension

when we study vanchiglietta neighborhood we can there are some rooftops that are already active, some are green roofs, some are gathering spaces, and one even has a tennis court.
However, none of them are accessible to the public.
In order to improve the quality and livability of vanchiglietta we proposed connecting the rooftops of the buildings in the core of neighborhood and make them accessible to bike and pedestrian.
This way, workers would not only have a place to work,but they can have their leisure, rest, lunch, and meetings places in a pleasent environment directly near their work area.

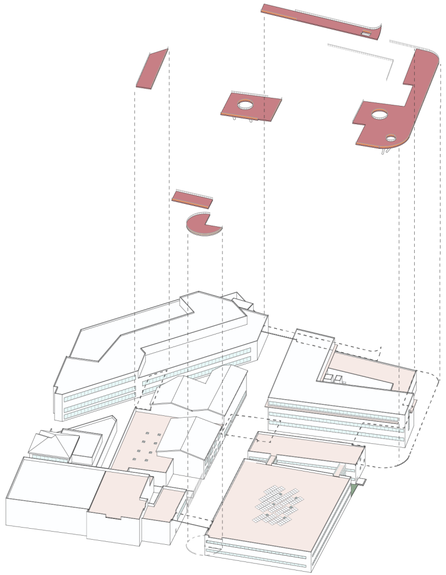


State of the Art



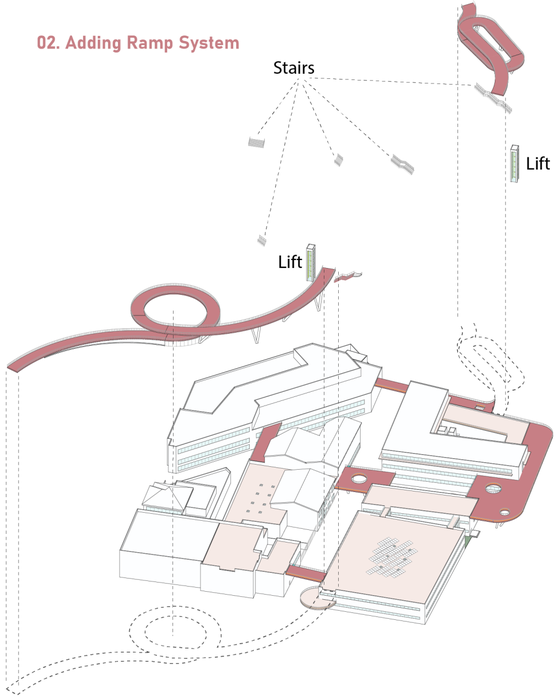
New Proposal

01. Adding Intermediate Floors



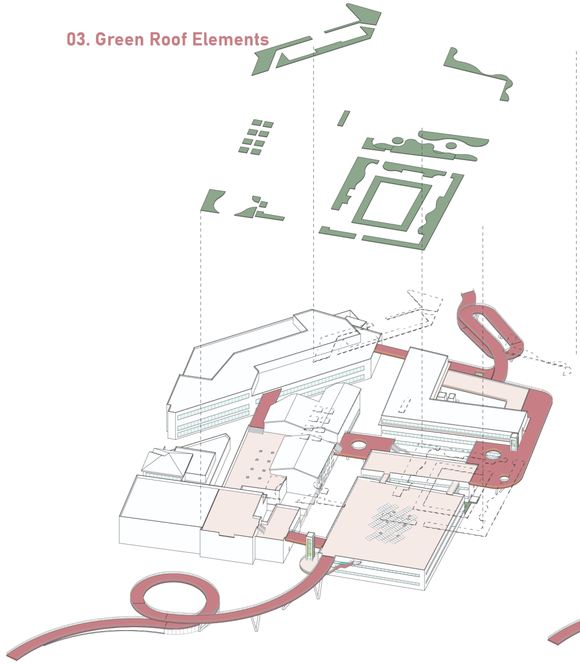
We introduced intermediate floors between the roofs of the existing buildings to create continuous horizontal connections.

02. Adding Ramp System



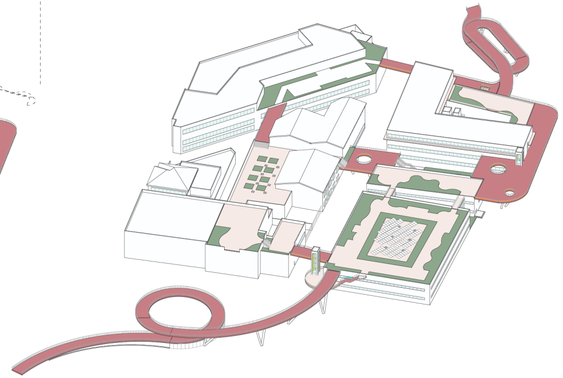
Two ramps are added to mak roofs accessibile to bikes and pedestrian. Additionally Stairs and lifts were also added for users who don't want to use the ramp.

03. Green Roof Elements

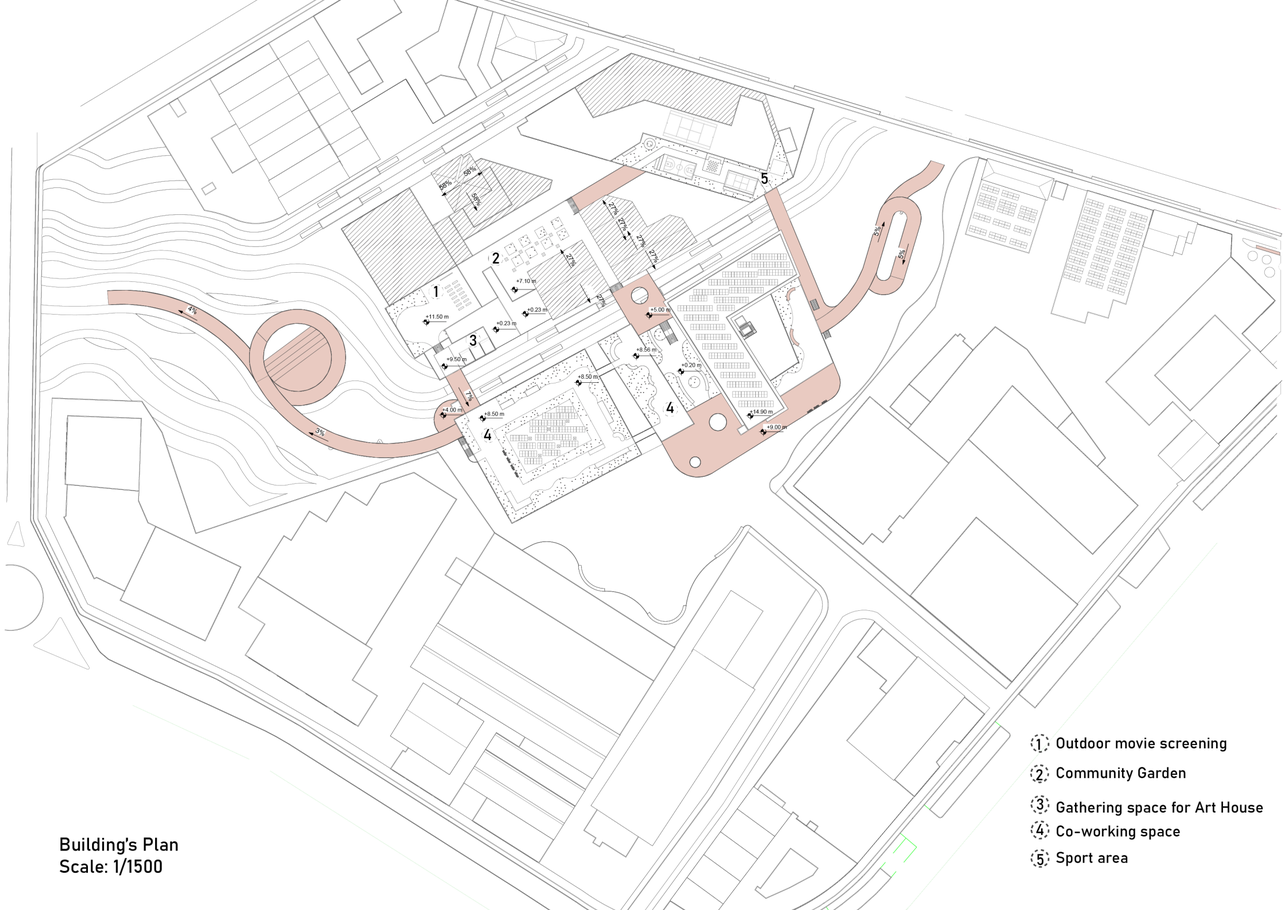


Greenery is add into the roof surfaces to enhancethe presence of green roofs in the neighborood.

04. Final Configuration: Accessible Public Rooftop



The proposal creates an accessible rooftop that offers new opportunities to user for social interaction



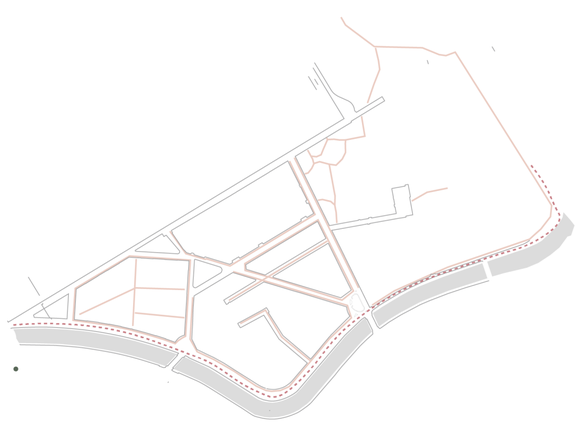
Building's Plan
Scale: 1/1500

1. Outdoor movie screening
2. Community Garden
3. Gathering space for Art House
4. Co-working space
5. Sport area

EMPOWERING PUBLIC LIFE - ACTIVATING URBAN VITALITY

Connectivity and Accessibility Results

Cycling paths added



Existing Situation

Cycling Paths

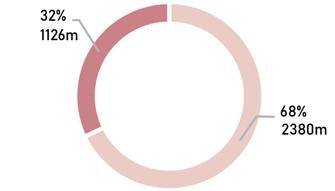
Pedestrian paths

New Proposal

Cycling Paths

Pedestrian paths

Bike Parking



New Bike path

Existing Bike path

Total: 3506 m

Whole area of vanchiglietta: 303,431 m²

Bike Lane Density (m/km²) ≈ 11,560 m/km²

In the existing condition, the bicycle network inside the Vanchiglietta study area was extremely limited. Only 1126 meters of bike path were present, located along the Dora River. The internal streets of the industrial neighborhood were not accessible or safe for cyclists, and no continuous cycling structure connected the area to the surrounding districts.

After introducing the masterplan strategies—continuous bike routes, riverfront cycling paths, and new east–west and north–south connectors—the total length of the bicycle network reaches 2308 meters.

This means:

Existing bike path: 1126 m

Newly added bike paths: 2,380 m

Total bike path in masterplan: 3506 m

As percentages:

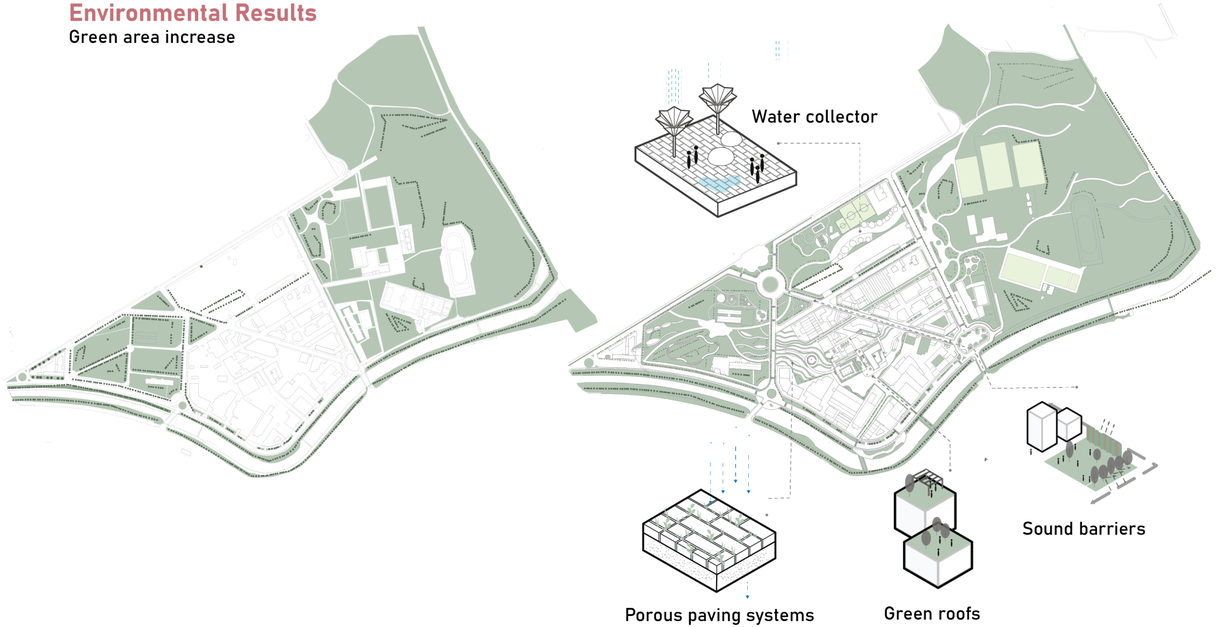
Only 32% of the final cycling network existed before.

68% of the network is newly created through the masterplan.

This demonstrates that the masterplan dramatically transforms Vanchiglietta from an almost inaccessible industrial area into a fully connected cycling district. The new network not only supports internal mobility but also strengthens connections to Barriera di Milano, Regio Parco, and the wider city.

Environmental Results

Green area increase

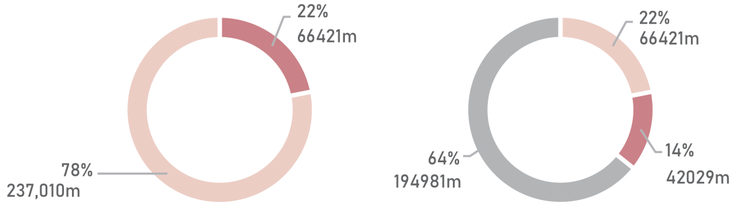


Existing sitution

Existing Tree

New proposal

New Tree



New Green

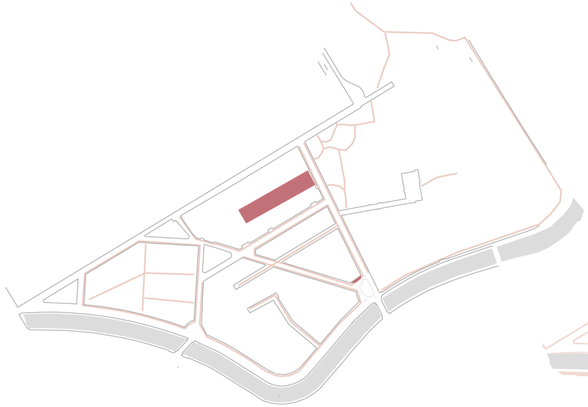
Existing Green

Others

The existing greenery in the area was sufficient; however, to create continuity between these fragmented green spaces and to link them with the built environment, we introduced 66,421 m² of additional green areas. This accounts for 22% of the total greenery shown in the masterplan.
Overall, 36% of the land use in the neighborhood is green space, of which 14% was added through our proposal

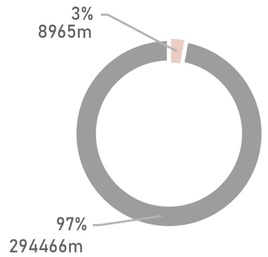
Spatial Results

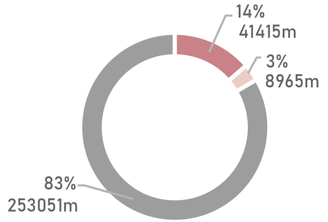
Public space network



Existing Situation

New Proposal





New public Spaces

Existing public Spaces

Whole area

Existing Density = 3%

Proposed Density =16.6%

Whole area = 303431

In the existing situation, only 3% of the whole area was public space, which was very low. With our proposed masterplan, this amount increased to 17%. But it is not only about the quantity of public spaces — the quality of those spaces also matters.

We added different types of public spaces:
spaces inside the parks that are designed to function within a natural environment;
open-up spaces that reduce the feeling of being closed or confined;
and most importantly, the main public space in the core area, which creates a place where workers and residents can meet, interact, and bring more strength and liveliness to the center of the neighborhood.

MASTER PLAN

Ytterviken

Scale: 1/3000

In the Ytterviken masterplan, we applied the strategies derived from the comparative analysis. The design primarily aims to improve accessibility, enhance greenery, and strengthen social interaction among users. To achieve these goals, the mobility framework was reconfigured to create a continuous connection between Ytterviken and the city center, while also ensuring that the bay remains accessible during winter. New public spaces were integrated into the plan to provide higher-quality working environments, and greenery is gradually introduced into the core of the area, supporting a more pleasant and resilient urban landscape.

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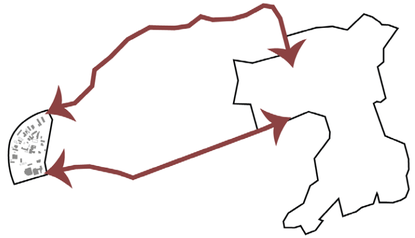
State of the Art

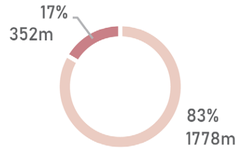
Proposed Mobbility

To improve mobility in Ytterviken, we began by defining the building blocks and introducing a coherent network of pedestrian and bicycle routes. This strategy ensures that all parts of the neighborhood become more readable and accessible. Previously, there were no clearly defined paths for cyclists or pedestrians, even though many workers in Ytterviken commute by bike.



Connecting Ytterviken to city center

Additionally, the proposed bicycle routes were designed to seamlessly connect with the existing bike lane that leads to the city center. This creates continuity within the regional cycling network and strengthens Ytterviken's connection to the city center and the surrounding areas. Considering that cycling is widely used in Luleå, this integration significantly enhances the practicality and attractiveness of sustainable mobility in the neighborhood.



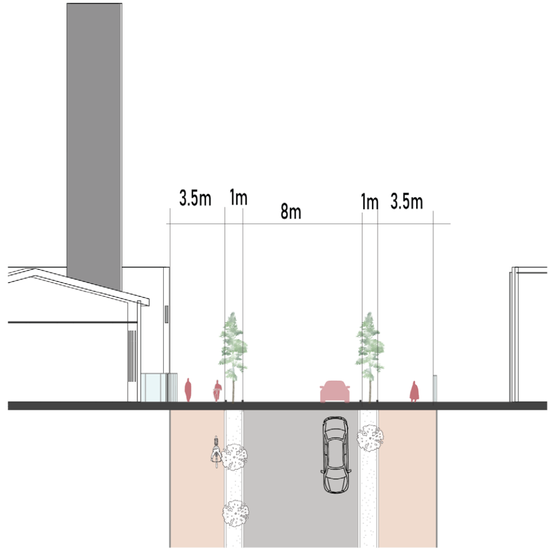
Existing Bike path

New Bike path

Existing Density = 1408 m/km²

Proposed Density =8520 m/km²

Whole area = 250000

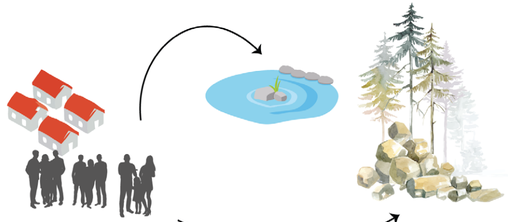


Section A-A'

State of the Art

As shown in the state of the art, the industrial area currently lacks greenery, even though it is surrounded by strong natural landscapes such as forests. To address this contrast, we introduced green corridors that extend into the interior of the area. Over the years, these corridors will naturally grow and strengthen, gradually bringing more greenery into the industrial fabric.

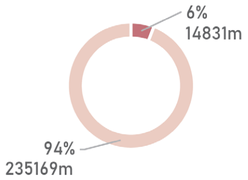
1_3 years	3_10 years	10_30 years	30+ years
Pioneer stage	Shrub and young woodland stage	Early forest formation	Mature boreal forest structure



In lulea People prefer to spend time with nature

When studying Nordic cities—especially Luleå—it becomes clear that public spaces and recreational areas are deeply integrated with the surrounding natural environment. Nature is not treated as a separate element but as an essential part of everyday urban life. This relationship is reflected in the way people use forests, waterfronts, and open landscapes as informal gathering and relaxation spaces throughout the year.

In Ytterviken, both the bay and the adjacent forest present strong opportunities for creating comfortable and inviting recreational areas. To build on these natural assets, we designed a new waterfront space along the bay that encourages social interaction, relaxation, and direct contact with the water. Additionally, we introduced a series of small wooden platforms within the forest. These platforms serve as simple, unobtrusive resting points where workers and visitors can sit, read, or enjoy the natural surroundings without disturbing the landscape.



New Public Space

Other areas

Proposed Density =5.9%

Whole area = 250000

We added several small elevated tree platforms, which are simple wooden decks built around existing trees. These platforms function as quiet resting points where workers can momentarily detach from the industrial environment and reconnect with the forest. By creating these elevated spaces with minimal impact on the landscape, we encourage people to experience nature more closely and comfortably.

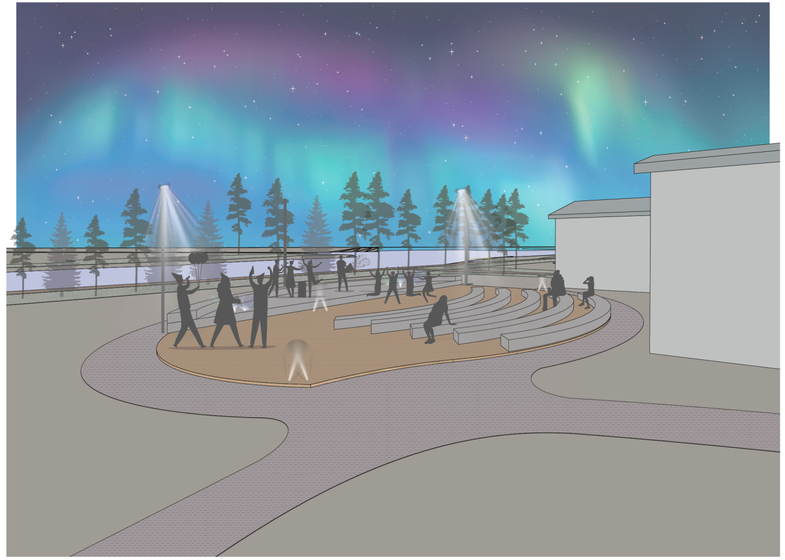
These tree platforms are already common in Luleå, where many forests feature similar elevated decks and even small tree houses. Because they are familiar elements in the local landscape, integrating them into Ytterviken feels natural and consistent with the region's existing outdoor culture.

By installing wooden platf along the waterfr we created a ple ant and inviting sp where both resid and workers relax and enjoy bay. Additionally, wooden struc allows users access the edge the bay even du winter, when water is frozen this way, it supp the bay's role a seasonal "w infrastructur enabling people experience and the frozen landsc safely and comf ably.

In winter, the bay offers unique opportunities for public use. When it freezes, it becomes a natural space for skiing and skating, as commonly seen in Luleå. In addition, drawing on the ArkDes proposal for Luleå, snow can be intentionally collected and shaped into compact volumes that act as wind shelters, creating comfortable micro-environments where people can gather and interact. This approach can also be applied in Ytterviken, transforming the winter landscape into an active and inviting public space.

During daytime working hours, the neighborhood operates primarily as a productive environment, shaped by the presence of workers and daily activities. The public spaces are designed to support comfort and well-being throughout the workday: designated seating areas, outdoor lunch spots, and small resting platforms provide opportunities for workers to pause, eat together, or spend time in nature between tasks. These spaces encourage informal social interaction, helping to build a sense of community within the workplace. The integration of greenery, shaded areas, and natural views also supports mental restoration, allowing workers to momentarily detach from their industrial surroundings. In this way, the daytime character of the neighborhood is defined by a balance between productivity, relaxation, and social connection.

Gathering point _ Lunch Time_ Dytime



Gathering point _ Party Time_ Nighttime

At night, once the working hours are over, the neighborhood undergoes a gradual transformation. The spaces that function as gathering points for workers during the day open up to a broader public, allowing the area to shift from a productive industrial environment to a social and community-oriented setting. In this evening phase, the neighborhood becomes a place for public events, informal gatherings, and cultural activities. Lighting, accessibility, and the presence of open public platforms help create an inviting atmosphere, encouraging residents and visitors to engage with the site in new ways. This dual functionality not only maximizes the use of space but also strengthens the social life of the neighborhood beyond working hours.

Conclusion

Vanchiglietta- Ytterviken

In this chapter, we compare the outcomes generated by our design strategies.

A Layered Comparison Across Two Contexts

When we place the different layers of design in Ytterviken and Vanchiglietta side-by-side, it becomes clear that the approaches are fundamentally different. In Vanchiglietta, we see that in addition to improving mobility, certain points and nodes are strengthened, while this does not happen in Ytterviken. In Ytterviken the mobility line simply guides people through the area — it is a “come and go” situation — but in Vanchiglietta some points are intentionally improved to make people stay.
Also, in Luleå there is a unique opportunity in winter to use water as an infrastructure and spatial connector, but this is strictly related to climate and cannot happen in Turin.

Ytterviken

Improving Mobility

preserving Greenery

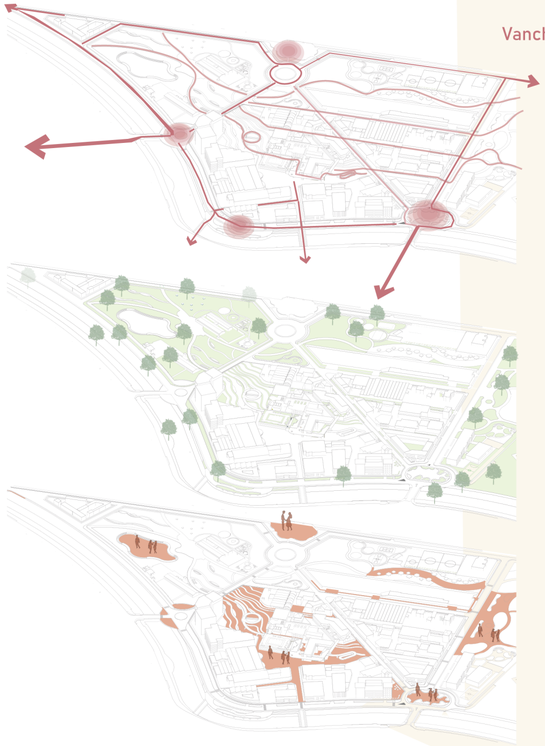
Shared Spaces

Vanchiglietta

Improving Connection

Connecting Greenery

Public Spaces

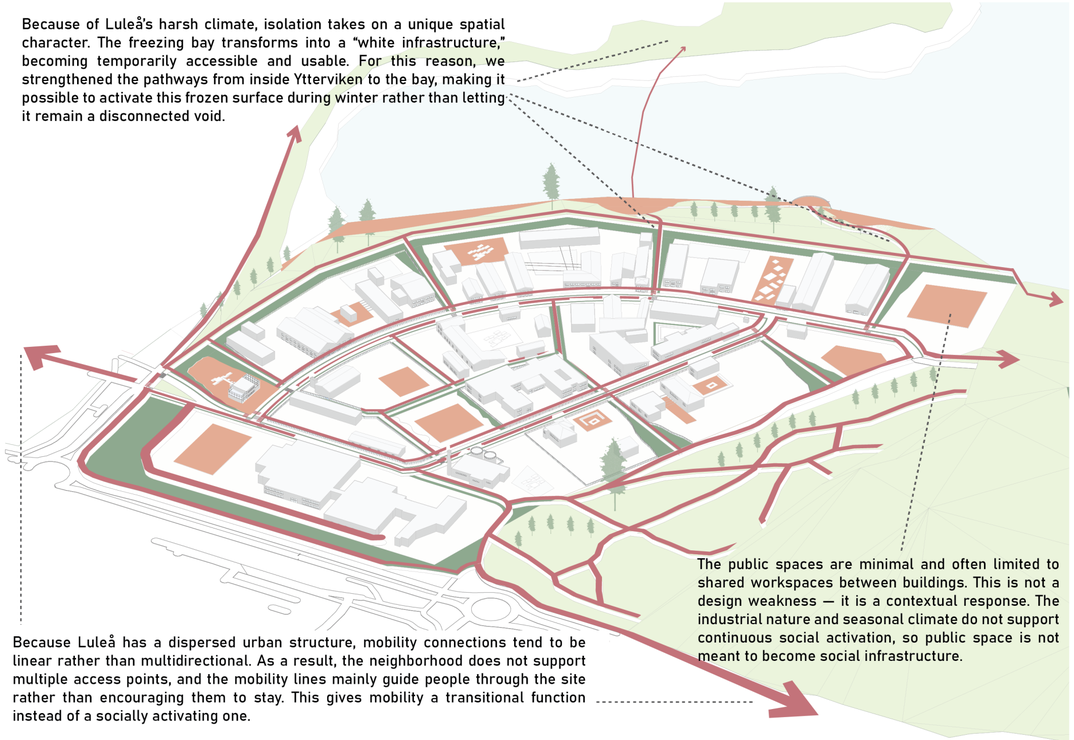


When it comes to greenery, the amount of green that enters Vanchiglietta is much more than in Ytterviken, because in Ytterviken the focus is mainly on mitigation and preservation. The same difference exists in public spaces: in Ytterviken there are fewer public spaces, mostly shared spaces for workers that appear between two or three buildings, while in Vanchiglietta public space becomes a priority — some areas are opened up intentionally to allow interaction and create active social spaces.

Finally, we see that in Turin the different layers (mobility, greenery, public space, social layer) influence each other and work together, while in Ytterviken this interaction is weaker. In Turin, entrances are improved not only because of isolation but because they support public space and social functions. And greenery, although it is meant to connect the parks, also contributes to reducing isolation.

Ytterviken

Because of Luleå's harsh climate, isolation takes on a unique spatial character. The freezing bay transforms into a "white infrastructure," becoming temporarily accessible and usable. For this reason, we strengthened the pathways from inside Ytterviken to the bay, making it possible to activate this frozen surface during winter rather than letting it remain a disconnected void.



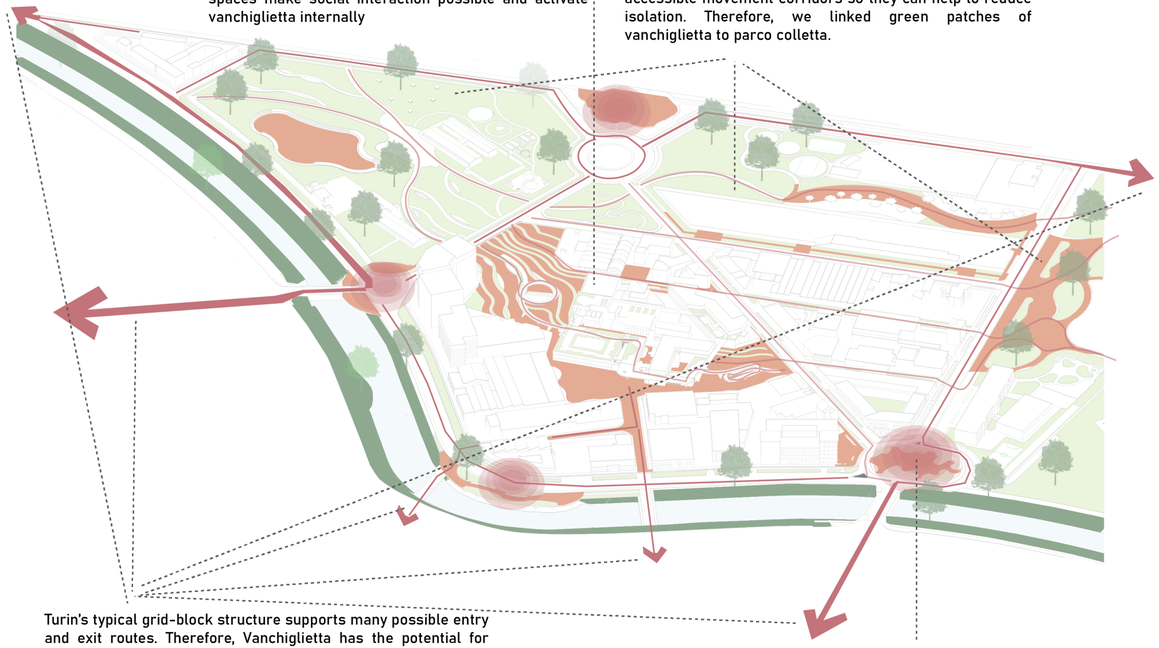
The public spaces are minimal and often limited to shared workspaces between buildings. This is not a design weakness — it is a contextual response. The industrial nature and seasonal climate do not support continuous social activation, so public space is not meant to become social infrastructure.

Because Luleå has a dispersed urban structure, mobility connections tend to be linear rather than multidirectional. As a result, the neighborhood does not support multiple access points, and the mobility lines mainly guide people through the site rather than encouraging them to stay. This gives mobility a transitional function instead of a socially activating one.

Vanchiglietta

Because Turin has a compact urban structure, opening up some parts of the city becomes necessary to provide spatial relief and create gathering points. These open spaces make social interaction possible and activate vanchiglietta internally

Turin's green system (parks, riversides) often acts as accessible movement corridors so they can help to reduce isolation. Therefore, we linked green patches of vanchiglietta to parco colletta.



Turin's typical grid-block structure supports many possible entry and exit routes. Therefore, Vanchiglietta has the potential for multidirectional connectivity. Because of this, our mobility interventions link the neighborhood to its surroundings from different directions

The entrances function as public spaces not just because they exist, but because the continuous urban fabric and active public life of Turin make it possible for them to attract people and strengthen internal connections.

Outcome Matrix of the Design Intervention

	KPI	Existing Turin (Vanchiglietta)	Proposed Turin (Vanchiglietta)	Existing Luleå (Ytterviken)	Proposed Luleå (Ytterviken)	What We Achieves	Contextual Justification
Mobility	Bike Lane Density	3,711 m/km²	11,560 m/km²	1,408 m/km²	8,520 m/km²	Increase in daily use, activity, and accessibility for workers + visitors. Reduces accidents, continuous, safe slow-mobility links, connected to the city network..	Turin supports commuting and year-round use; Luleå is climate-limited, requiring short, usable loops. Both designs improve mobility, but strategies are adapted to local movement patterns and climate.
	Safety standards	Mixed traffic	Protected lanes	Car-dominant	Separated slow lanes		
	Network continuity	Broken links	Continuous grid	Large discontinuities	continuity to city center		
Green Network	Greenery Coverage (% of area)	21.9%	35.7%	17.9%	22.1%	Heat reduction, increased comfort, microclimate improvement. Supports biodiversity, Established climate-adaptive greenery.	Turin needed high greenery to generate ecological continuity inside dense industrial fabric; Luleå prioritized protection and integration with abundant surrounding nature. Ratio alone is not sufficient—contextual function matters.
	Green connectivity	Fragmented	Connected green spine + edges	Strong but mono-directional	Multi-layer connectivity		
	Type of greenery	Parks linear green along Dora small green patches	Parks green corridor system	forested areas Coastal natural green	small protected pockets and time-grown vegetation		
Social Infrastructure	Public Space Ratio (% of area)	3.0%	16.6%	0%	5.9%	Encourages social interaction, supports workers, improves livability. Reduces isolation Extended annual usage. recon-nect social and industrial areas.	Turin benefits from large open spaces due to density and social activity; Luleå requires small, protected spaces for usability in harsh climate. Design is adapted to local social and environmental context rather than just achieving numeric norms
	Accessibility to public services	Limited	Improved service radius	Isolated	Nature based and Cluster-based approach		
	Seasonal usability	Summer	Year-round usability High in summer, moderate in winter	Season-based usability High in summer, transition-al in winter	Season-adaptive Winter shelters + wind buffers		

CONCLUSION

In this thesis, the first question we asked was whether regenerative strategies are transferable across different contexts. After comparing the design strategies applied in Ytterviken and Vanchiglietta, we can see that even though both neighborhoods suffer from similar issues, especially isolation, the approaches required to address them are completely different. This demonstrates that regenerative strategies are not universally transferable and must be deeply shaped by their context.

This leads to the second central question of the thesis: How do different urban contexts influence the strategies required to integrate active industrial neighborhoods into the city? Based on the analysis of Ytterviken and Vanchiglietta, we can clearly see that the urban fabric, climate conditions, spatial morphology, and planning approach each have a direct influence on strategy selection.

For example, both areas deal with isolation; however, in Vanchiglietta the isolation can be managed and reduced through multiple entrances and multidirectional connections, which are possible because the neighborhood is embedded within a compact urban fabric. In contrast, in Ytterviken isolation is largely geographical and cannot be fully eliminated. The mobility strategies also differ: in Turin mobility can be produced in multiple directions, connecting to the surrounding city, while in Luleå the dispersed urban structure restricts movement to linear corridors.

Greenery strategies also show fundamental differences. In Luleå, greenery is mainly based on preservation and ecological continuity, whereas in Turin greenery becomes an opportunity to stitch different urban patches together. Public space follows the same pattern: in Luleå it is more nature-oriented, seasonal, and dependent on climate; in Turin it is open, plaza-based, and urban.

Mixed-use strategies further emphasize the contextual distinction. In Ytterviken, creating mixed functions is challenging due to both its monofunctional industrial character and the influence of a modern zoning model in the city. Climate also plays a decisive role: winter limits public space usability in Luleå, but also creates unique opportunities such as using the frozen bay as a temporary infrastructure — a condition which could never occur in Turin.

Altogether, these comparisons show that there is no universal solution to integrating active industrial areas into urban life. Instead, each strategy must respond to the specific characteristics of the urban fabric, climate, spatial structure, and planning culture. Regeneration is therefore not a replicable template but a context-dependent process. Through this thesis, we conclude that understanding context is not optional — it is fundamental to designing meaningful and effective regenerative strategies.

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