

INDUSTRIAL REMIX

INTEGRATING MANUFACTURING IN REGIO PARCO, TORINO

Massachusetts Institute of Technology
Department of Urban Studies & Planning

July 2020



Massachusetts
Institute of
Technology



POLITECNICO
DI TORINO

Future
Urban Legacy
Lab

INDUSTRIAL REMIX

Integrating Manufacturing
in Regio Parco, Torino

Department of Urban Studies and Planning
School of Architecture + Planning
Massachusetts Institute of Technology
Cambridge, MA, USA
dusp.mit.edu

Future Urban Legacy Lab
Politecnico di Torino
Torino, Italy
<http://urbanlegacylab.net/>

(c) 2020 Massachusetts Institute of Technology

Prepared for The City of Torino, Italy

Prepared by Graduate students of the Massachusetts Institute of Technology (MIT)
Department of Urban Studies and Planning:
Fiorella Belli
Bahij Chancey
Sofia Gulaid
Lamice Halaby
Amber Kim
Laura Kim
Allison Lee
Angeles Martinez
Maria Lucia Morelli
Mora Orensanz
Ziyu Ran
Tanvi Sharma
Prathito Wisambodhi

In collaboration with The Future Urban Legacy Lab, Politecnico di Torino (PoliTo)

Under guidance of Professor Eran Ben-Joseph
Professor Mary Anne Ocampo
Professor Matteo Robiglio
Professor Francesca Frassoldati

Dated July 2020

Edited by Laura Kim, Allison Lee, Tanvi Sharma

We thank the following organizations for their generous support:

MIT International Science and Technology Initiatives (MISTI Italy, MITOR Project)
MIT Department of Urban Studies and Planning
Politecnico di Torino, Future Urban Legacy Lab
The Municipality of Torino, Italy

We thank the following individuals for their help, input and collaboration:

FULL/Polito:

Elena Guidetti
Emanuele Protti
Simone Parola
Samuele Sciarretta
Riccardo Ronzani
Lucia Miglietta
Luca Galleano
Laura Martini
Maicol Negrello
Marianna Nigra
Lucia Baima
Guilia Sammartano
Emilio Abbate

Polito Student Participants:

Deniz Gemici
Daphne Fabbri
Ola Wykrot
Mateusz Ryjak
Ziyi Nie
Sahar Naz Taleb Nezhad
Alp Arda
Aleksandra Wykrota
Afsaneh Tayebi
Heqi Li
Andrea Orellana

Polito:

Professor Guido Saracco, Rector
Professor Patrizia Lombardi, Deputy Rector
Professor Paolo Neirotti
Professor Caterina Barioglio
Professor Alberto Vanolo
Professor Antonio De Rossi
Professor Daniele Campobenedetto

City of Torino:

Antonino Iaria, Deputy Mayor for Planning
Sandro Golzio, Director of Urban Planning
Rosa Gilardi, Area Manager of Urban Planning
Gianfranco Presutti, Director of Innovation

City of Milano:

Cristina Tajani, Deputy Mayor for Economic Development
Pierfrancesco Maran, Deputy Mayor for Urban Planning

In Italy:

Professor Alessandro Balducci, PoliMi
Professor Nicola Russi, PoliMi
Professor Stefano Micelli, Venice International University
Professor Mario Abis, IULM University
Luca Ballarini, Bellissimo
Nicoletta Marchiandi, Torino Chamber of Commerce
Chiara Lucchini, Torino Urban Lab
Davide Albertini, Risanamento, ULI
Mario Abadessa, Hines
Federico Maggia, Lanificio di Torino
Cristina Manara, Confindustria Piemonte
Dario Gallina, Unione Industriale
Filippo Delle Piane, ANCE
Guido Gobino, Chocolatier
Quercetti Toys
Mattioli Jewelry
Pirelli Factory, Torino
Toolbox Coworking Space
Francesca Meineri, Toolbox
Fabio Santoro, La Casa del Quartiere
Marco Cornetto, SocialFare

In the US:

Serenella Sferza - MISTI, MIT
Professor David Hsu, MIT
Professor Carlo Ratti, MIT
Ken Goulding, Sasaki
Thiyagarajan Adi, Sasaki
Tim Love, UTILE
Neil McCullagh, Boston College
Sue Sullivan, Newmarket Community Partners
Dorothy Tang, MIT
Carmelo Ignaccolo, MIT



The Piedmont Region as seen from above.







-/ BELLISSIMO

DAL 1998

Bellissimo Design Studio works to generate creative sparks in Torino's urban landscape.



Torino's industrial legacy remains visible in its existing building typologies.





JIMBO

JIMBO

ET-310CX



Manufacturing buildings are in varying states of condition and operation.



A skilled worker prepares a mold for a new children's toy at the Quercetti Toy Company.



Table of Contents

| | |
|---------------------------------|-----|
| 01 Introduction | 01 |
| 02 Existing Conditions & Vision | 30 |
| 03 Recommendations | 80 |
| 04 Conclusions | 204 |

01

Introduction

BACKGROUND BRIEF
PROCESS

MIT Team ▼





A skate park at Parco Dora draws people back to the post-industrial site.

Background Brief

Manufacturing constitutes a significant portion of the world's total economic activity and industry occupies large areas of our built environment. Yet, we tend to think about industry in an economic or political context often divorced of spatial or locational considerations. In a time of dramatic shifts in the manufacturing sector — from large-scale production to small-scale design, from individual distribution channels to consolidated fulfillment centers, from polluting and consumptive production to clean and circular processes, from a market of low-skilled labor to a specialized high-skilled workforce, and from shifting supply chains due to global health crises — cities will see new investment, increased employment opportunities, and changes in public perception. These changes will also require a shift in our thinking about physical planning and the design and development of industrial areas in cities.

For roughly a century, cities have shifted industrial sites to the peripheries of their metropolitan regions and have erected barriers between places of production and places of residence and lifestyle. Technological advances in manufacturing methods have made it possible to reconsider the relevance of these barriers and to question whether the preferred location of industrial sites is on the periphery. What physical planning and design strategies should cities pursue to support present-day manufacturing? What are state-of-the-art new examples of innovative design? How, and to what extent, have cities progressed towards integrating sustainable manufacturing and industrial production? How can cities advance this agenda in practice?

In 2020, the Site and Environmental Systems Planning practicum course organized by the Department of Urban Studies and Planning (DUSP) at the Massachusetts Institute of Technology (MIT) School of Architecture and Planning (SA+P), in collaboration with the Future Urban Legacy Lab (FULL) of Politecnico di Torino (PoilTo) attempted to address these questions. It did so through an examination of future possibilities for integrating manufacturing activities with residential and other livelihood uses in the Regio Parco district of Torino, Italy.

Specifically, the project aimed to bring innovative approaches to urban planning where the city of Torino could reintegrate manufacturing through an industrial remix. This place-based strategy draws upon Torino's strengths in industry, environment, culture, and people. In an effort to develop a full scope of possibilities for industrial areas in Torino, the project explored both the regional context as well as site-specific issues of planning including infrastructure, operational logistics, zoning, community engagement and the integration of ecological systems. The project also developed strategic goals and policy recommendations.

This report describes the issues addressed in the design and planning of this area in Torino and presents the investigations and proposals for the site that were prepared by the student teams.

Process

The practicum was organized into four phases:

January 2020

Travel to Torino, Italy

During the last week of January, students and faculty traveled to Torino and met with the client, the City of Torino's Planning Department, and PoliTO students, researchers, and faculty. A series of presentations, meetings, and interviews took place during this week. Participants toured the Regio Parco site and other case study locations, observed guest presentations, and conducted site observations and documentation.

February 2020

Researching and Analyzing Torino

During early stages of the practicum, students performed research and analysis of the larger Torino municipality to contextualize Regio Parco's existing conditions, including: site planning, community profiles (from data-mining through past surveys and engagement with community members), as well as identifying priority programmatic needs from stakeholder feedback.

The objective of this phase was to analyze the site at three scales: the Piedmont region, the Torino municipality, and the Regio Parco district. Analysis included demographic profile, topography, soil conditions, hydrology, open space, mobility systems, industrial potential, zoning, and patterns of use.

March /April 2020

Creating a Framework and Designing Strategies (Policy and Placemaking)

The following activities involved structuring a framework and creating design strategies to influence future development patterns for Regio Parco. This phase concluded in a mid-term presentation to the client.

May 2020

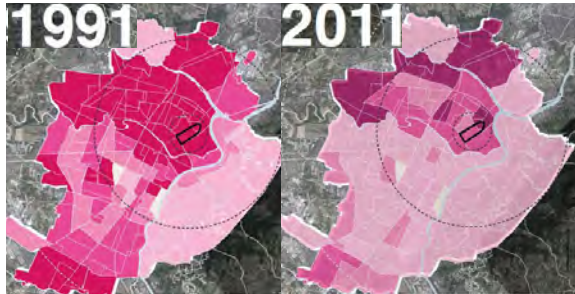
Synthesizing and Preparing Final Recommendations

The final phase synthesized recommendations and strategies into a final presentation and a report.

Timeline

FEBRUARY 2020

MIT students begin data collection and existing conditions analysis.



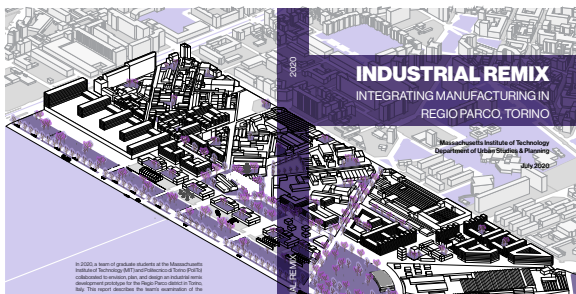
APRIL 2020

A virtual mid-review with the FULL team prompts exciting new challenges and possibilities.



JULY 2020

The final report is edited and published.



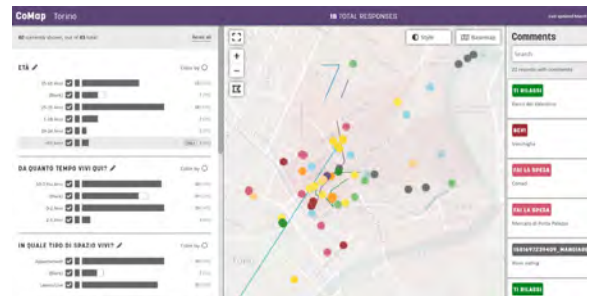
JANUARY 2020

MIT class visits Torino to join PoliTo students. IndustrialRemixWinter.school.blog/



MARCH 2020

MIT launches a resident survey to aid research. COVID leads to lockdowns around the world.



MAY 2020

The semester comes to an end and a draft of the report is presented in class.



Torino Visit

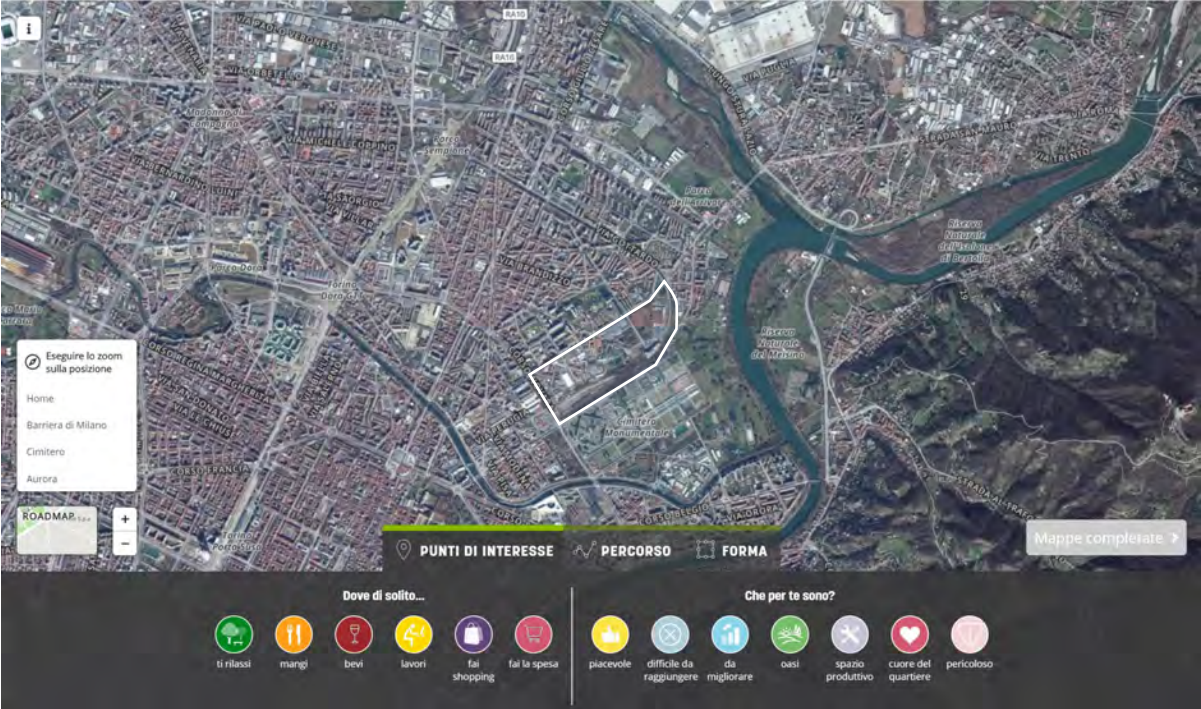
At the end of January 2020, the MIT class visited Torino and worked alongside the FULL team as well as students from Politecnico di Torino to understand the opportunities and challenges of the city and our site. The 10 day visit was closely documented and captured, available at: IndustrialRemixWinter.school.blog/





Background Research & Online Survey

The MIT student team designed and launched a survey to engage residents and other stakeholders of the Regio Parco site to better understand the aspirations of the community and better identify key sites of intervention for improvement.



Where do you usually...

What are these points of interest to you?



Which mode of transportation do you use most?



Draw the region that defines... your neighborhood

The motivation behind the survey was a desire to engage more intimately with stakeholders to co-create a holistic design for the site that addresses needs and builds upon existing amenities and lifestyles.

In lieu of a more robust participation process, with the help of Sasaki, and specifically, Ken Golding, the studio put together an online survey for residents, neighbors, and employees in the Regio Parco area.

The survey was available and advertised starting early March, with in-person distribution led by the FULL/PoliTo team. However, the onset of COVID-19 and subsequent lockdowns hindered outreach efforts and the survey received far fewer responses than we had hoped for. Nevertheless, we felt this was an important effort and still informative to the design and policy process.

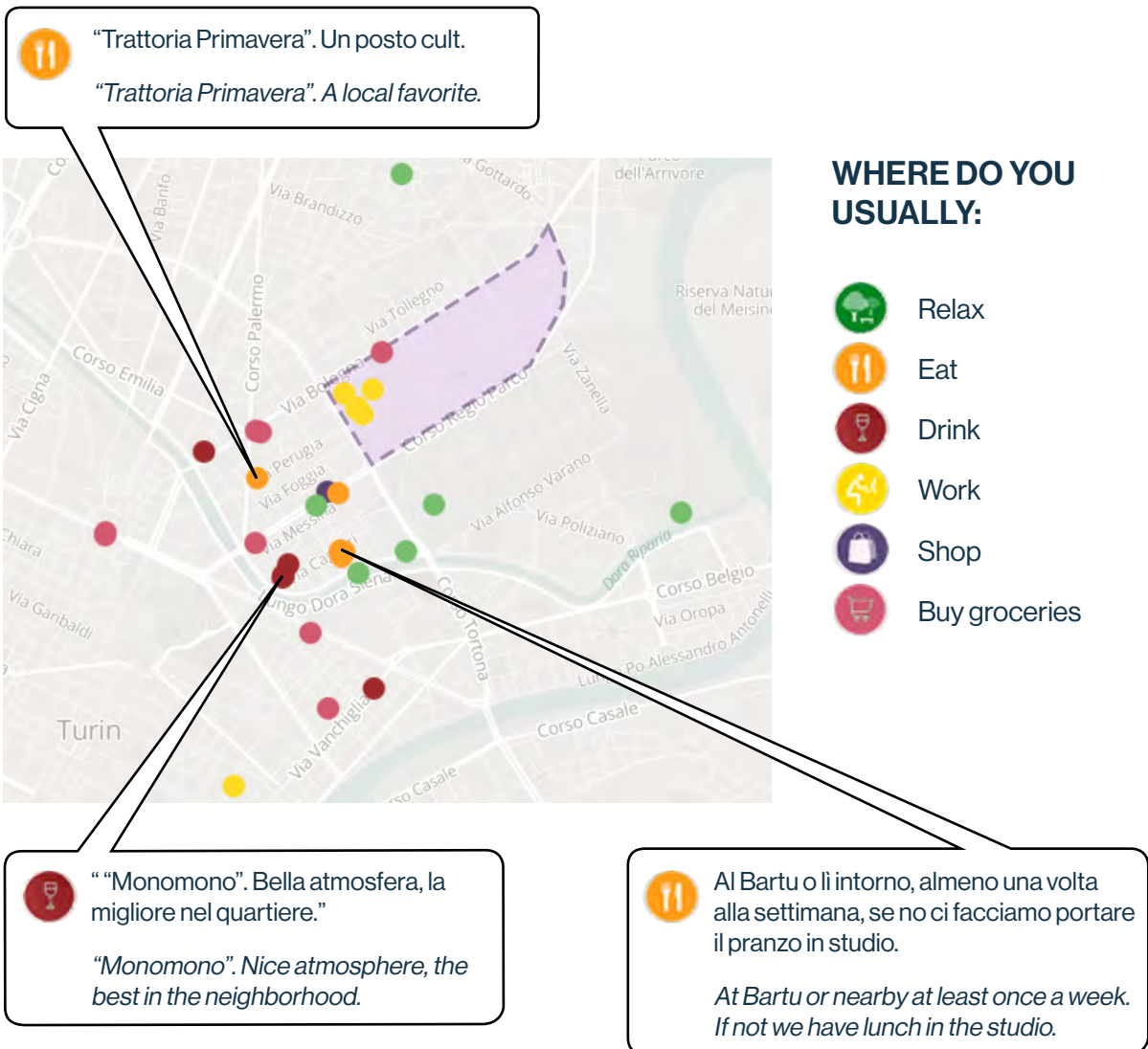
CoMap.Sasaki.com/Torino/



Online Survey Results

FEEDBACK ON LIFESTYLE AND USE

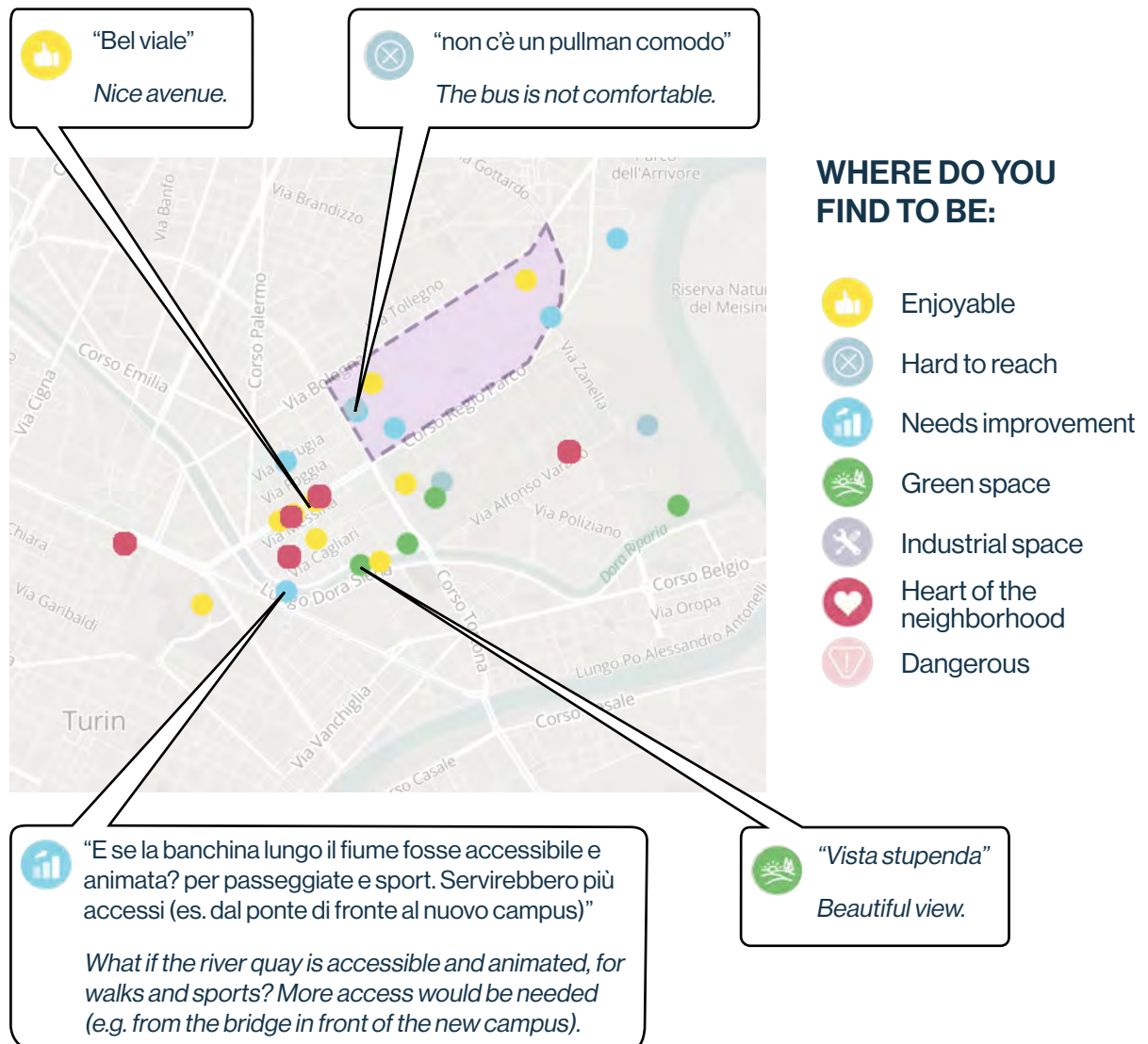
When asked about locations of daily activities, survey respondents indicated a preference for the neighborhood west of the site. The area between the Dora Riparia (river) and Regio Parco is a more established residential neighborhood, with cafes and other amenities. Notably, respondents also indicated areas of employment in the north western section of the site.



Online Survey Results

FEEDBACK ON AMBIENCE AND ATTRACTION

Respondents gave feedback on spaces to be maintained or improved. The riverfront is seen as an enjoyable area, however suggestions for improvement include better connectivity, more recreation and increased placemaking. The “heart of the neighborhood” was concentrated in the surrounding neighborhood, notably in similar locations as cafes and amenities.



Online Survey Results

DA QUANTO TEMPO VIVI QUI? HOW LONG HAVE YOU LIVED HERE?

60% 0-2 years
2-5 years
30% 10+ years
10% Other/Blank

QUANTO TEMPO IMPIEGHI AD ANDARE A LAVORO? WHAT IS YOUR COMMUTE TIME?

40% 0-15 min
60% 16-30 min

IN QUALE TIPO DI SPAZIO VIVI? WHAT ARE YOUR LIVING ACCOMODATIONS?

80% Apartment
20% Live/Work Space

DICHE COSA TI OCCUPI? WHAT IS YOUR OCCUPATION?

50% Business Services
10% Commerce
10% Student
30% Other/Blank

DOVE SEI NATA/O? WHERE WERE YOU BORN?

50% Torino, Italy
10% Bari, Italy
10% La Spezia, Italy
10% USA
20% Other/Blank

QUANTE PERSONE LAVORANO NELLA TUA AZIENDA? HOW MANY PEOPLE WORK IN YOUR COMPANY?

10% Self-employed
10% 2-10 people
50% 11-50 people
50-250 people
20% 251-500 people
10% > 500 people

Take-Aways from Early Research

The first half of our work, after returning from Torino, focused on background research in the following areas, conducted in teams. The key take-aways are outlined here.

ECONOMY

There is opportunity to engage graduates and new residents in the workforce through entrepreneurial development programs.

Many manufacturing suppliers and high-skilled services still exist in Torino. These could be leveraged through an industrial supplier and materials marketplace and network.

Industry could be linked to real estate, ICT and telecommunications, scientific activities, design, and food services by promoting cross-sector collaboration.

Regulatory barriers and procedures to starting new businesses are being actively improved by the Chamber of Commerce.

DEMOGRAPHIC

Education institutions, corporates, and cultural organizations offer collaboration for soft-programming.

A multitude of programs would attract different socio-economic and cultural groups, as well as new immigrants.

Online surveys, public events, and meetings for community input would increase success of future planning interventions.

A stronger cultural exchange between new and old residents would foster relationships.

Multi-age and multi-generational activities in the site would be a welcome addition.

BUILT ENVIRONMENT

The site lacks connection to the surrounding neighborhood and natural assets.

Vacant industrial buildings are not adequately used/re-purposed, and often incur high expenses.

New building typologies could promote a future-focused industrial character while harmoniously integrating with historical sites.

Public perception of industry still garners images of pollution and risk. Industry 4.0 must address this through improved systems, visibility and local branding.

HOUSING

Affordable housing is still a problem.

The rental market is relatively small.

There should be policies to protect the mixed-use block types.

Mixed-use live/work typologies exist in Torino but are not formalized or recreated in new developments.

Social housing programs mostly prioritize subsidies, and lack innovative policies.

NATURAL ENVIRONMENT

Green space is not easily accessible by walking in certain areas of the city.

Environmental challenges are prevalent due to natural topography and human activity.

Green spaces surround Parco Regio but are not well connected or accessible to the site.

Scenic easements should be preserved.

The site lacks canopy coverage and has large amounts of impermeable surfaces.

Environmental initiatives are not adequately visible to, or appreciated by, the public.

02

Existing Conditions & Vision

This chapter lays out the findings and analyses from early research conducted by Massachusetts Institute of Technology (MIT) Department of Urban Studies and Planning (DUSP) students during Phase 1 and 2 of the practicum.

Phase 1 research was done on the ground and in collaboration with students from the Politecnico di Torino (PoliTo) and the Future Urban Legacy Lab (FULL). Here, DUSP students toured not just the Regio Parco site, but various neighborhoods and industrial sites around Torino and Milano.

Phase 2 research on demographics, culture, economy, housing, and other important aspects of Torino was conducted back at MIT using data and

scholarly articles, procured and at times translated with the aid of the FULL team. This second phase also included a survey designed by MIT students along with Sasaki.

All of this research resulted in the context and conditions narrative, photographs, and understandings detailed in this chapter. Following this understanding, DUSP students laid out a framework and vision for the Regio Parco site.



A live performance during a temporary market at the Bunker cultural space.

Context & Conditions

This chapter covers contextual documentation of the Piedmont region, the Torino municipality, and the Regio Parco area to understand the strengths and opportunities for a industrial remix site proposal.

The context and conditions analysis that follows is categorized by scale: regional, city, and site.

At the regional scale, we consider the geography and landscape, as well as Torino's relationship to its neighbor, Milano.

Zooming into the city, we look at the history of manufacturing in Torino, the legacy of its urban fabric, and the typologies of mixed-uses.

At the site level, we document the assets of the open and underutilized spaces, the current mobility restrictions, the main transit access routes through the neighborhood, and the opportunities the site presents for leading experimentation of mixing production, residences, and commercial activity.

Regional Context

Geography and Landscape

Torino, as the fourth largest city in Italy, is the capital of the Piedmont Region. It sits approximately 130km west of Milano and 60km from the border with France.

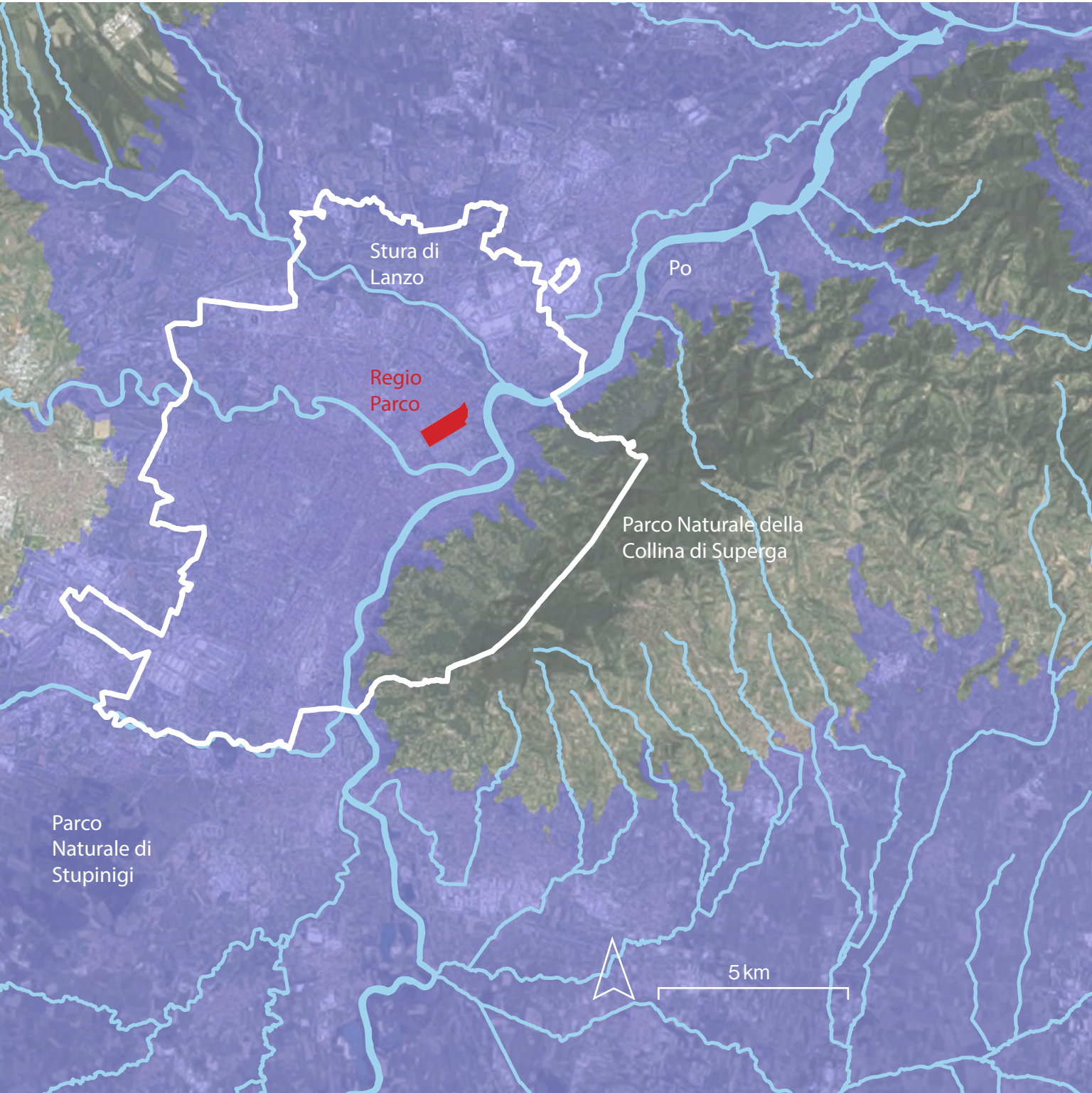
Nestled at the foothills of the Alps, Torino is generally cold and dry in the winters, with hot summer months and frequent thunderstorms. This map shows the low-lying areas in which Torino is located. The city is fed by four major rivers: the Po, the Dora Riparia, the Stura di Lanzo, and the Sangone. It is surrounded by natural parks and mountains, such as Parco la Mandria, Parco Naturale della Collina di Superga, Parco Naturale di Stupinigi, and Parco naturale di interesse provinciale del Monte Tre Denti-Freidour.

A relatively low elevation results in the surrounding mountain watershed flowing directionally into and through the valley. The natural topography, combined with urban growth in the valley, has contributed to increased flood risk. This is further exacerbated by the city's century-old drainage system.

Since 2000, there has been a 7.6% precipitation increase, adding to the strain of the city's infrastructure and ability to shed its wastewater.



Portion of the Piedmont Region, with Torino's city boundary shown in white. ▶



Piedmont's Natural Environment

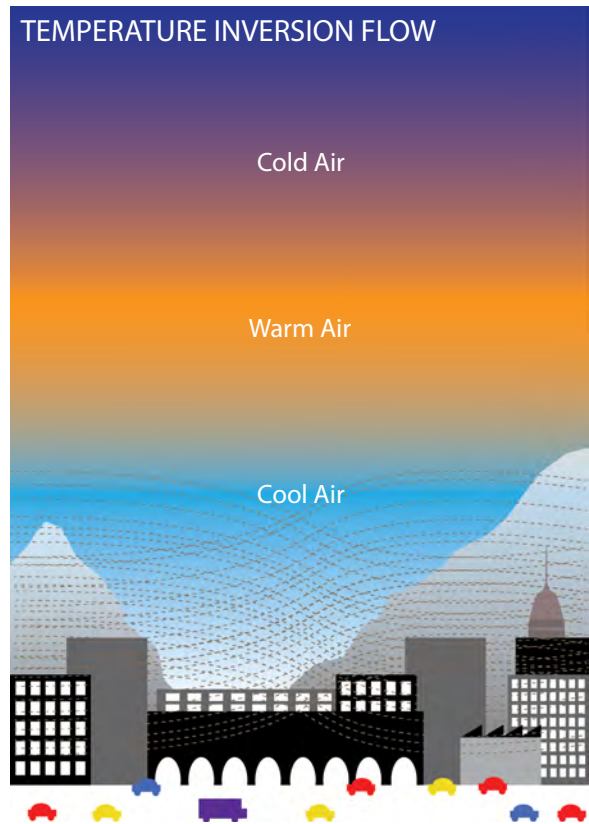
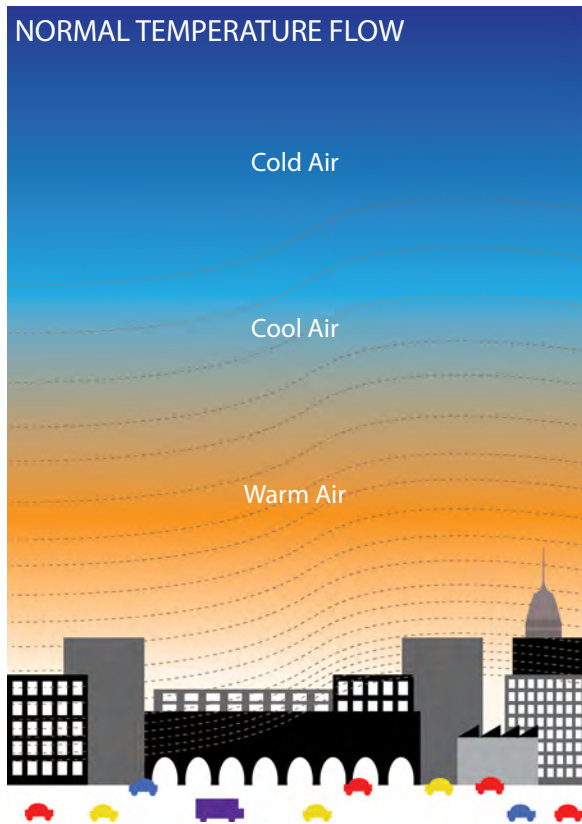
Geography and Air Pollution

The Piedmont Region has remarkable natural landscapes and cultural assets. Its location just south of the Alps mountain range results in impressive spreads of mountains, hills, and plains, with historic towns and religious sites dotted throughout the valleys.

The capital city, Torino, sits in the center of the region at the eastern end of the Susa Valley. On a clear day, the surrounding landscapes provide dramatic backdrops to residential buildings, church towers, and civic plazas.

However, the basin-like topography also promotes a temperature inversion effect, which traps dense cool air under a layer of warm air. Without the ability to escape and circulate, the trapped air is stagnant and heavy with pollutants. A city that locates within this basin sits amongst dense pollutants exacerbated by vehicular traffic, building heating, factories, and wildfires.

Any urban development proposal for Torino must consider this risk when planning for increased construction, transit, or manufacturing activity.





An aerial shot of the Piedmont region.

BASIN CITIES FOR COMPARISON

Salt Lake City, Utah, sits within a valley surrounded by steep mountains. Smog and high pollution levels are prevalent in winter months. Home heating and car use have been targeted as main sources.

*Salt Lake City's problem
(photo by Daily Herald)*



Los Angeles struggled with massive air pollution problems in the 1950s-60s, mostly from chemical plants, oil refineries, and hydrocarbon emissions from automobile exhaust. This effect was exacerbated by the natural basin-like geography.



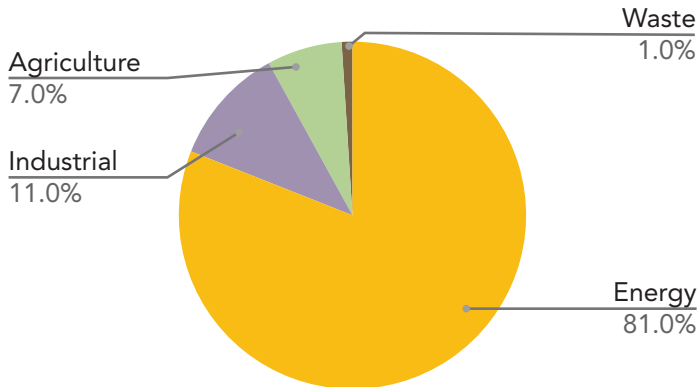
*L.A.'s infamous smog
(photo by L.A. Times)*

Torino displays a similar temperature inversion effect as Salt Lake City and Los Angeles, holding air pollution and dangerous emissions within its bowl-shaped geography.

*Torino's pollution risk
(photo by Bahij Chancey)*



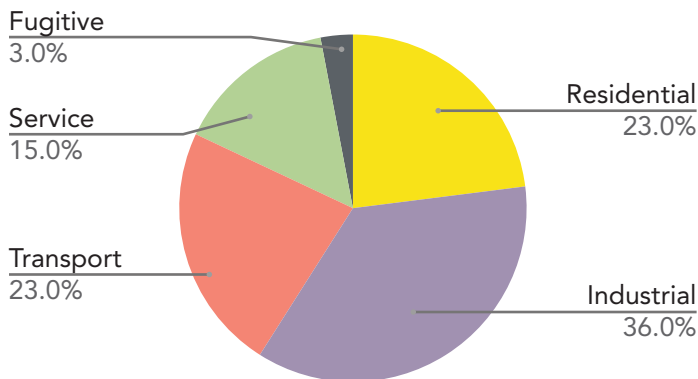
TORINO'S EMISSIONS SOURCES



Energy is the biggest source of emissions in the area. Thus to reduce emissions, Torino must tackle energy.

◀ Data from CEP-REP, 2013

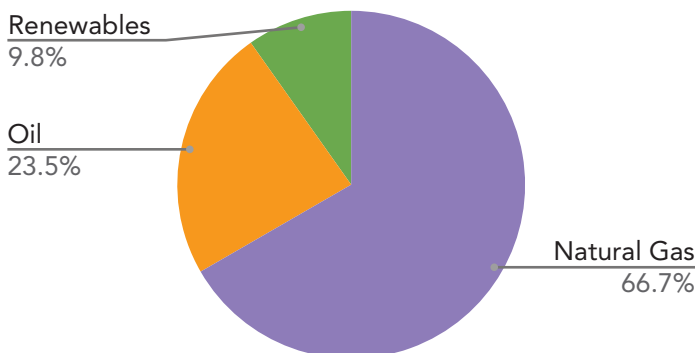
TORINO'S EMISSIONS BY SECTOR



Industry and Residential uses are currently the biggest energy consumers. Energy efficiency and renewables should be a priority.

◀ Data from The University of Manchester, 2009

TORINO'S ENERGY SOURCES



At present, renewable energy is still a relatively small proportion. Thus, any new development could address this gap by prioritizing clean energy usage.

◀ Data from The University of Manchester, 2009

Historic Fabric of Torino

Conservation and Challenges with Urban Change

For centuries, Torino has been a significant political and cultural nexus for the country. Once the seat of the Savoy royal dynasty and later the Kingdom of Italy, Torino's linkage with its historical roots is immediately evident in the urban forms, architectural decadence, and abundance of palaces and grand cathedrals.

Briefly the capital city of the Kingdom of Italy from 1861-1865, Torino took a hit when the capital moved to Firenze (Florence). Torino

was forced into action to recover for the loss. In response, it strategically prioritized innovation and entrepreneurship that built upon its existing strengths in engineering, production, investment, and working culture, soon birthing an auto-industry that would be known around the world.





A walk through city center reveals historic architecture.





Manufacturing in Torino

A Historical Overview

Fabbrica Italiana Automobili Torino (Fiat) was founded in 1899 and pumped immense lifeblood into the city, the workforce, and the economy. “Mama Fiat” as it was known, provided not only jobs but welfare to the Torino citizens, including direct benefits such as employment, housing, and local investment, as well as indirect benefits such as neighborhood vitality, Torino brand pride, collective momentum, and global recognition.

The auto industry, while the largest player, was not the only manufacturing actor in town. Ferrero chocolates and Nutella confectionery, both local brands, were produced in or around Torino. Hydroelectric energy was also collected via plants built around the mountainous areas of the Piedmont region.

By the 1970s, Torino’s manufacturing was declining due to competition, labor costs, and financial crises. Political and social strife continued, and Fiat slowly merged with foreign auto companies, namely General Motors in 2002 (dissolved) and Chrysler in 2014, now headquartered in London and Amsterdam.

Remnants of industrial heritage still linger in various forms in Torino, some transformed into different uses, some abandoned, and some still active. For example, the Lingotto factory, the Mirafiori worker neighborhood, large empty factory spaces along the railways, and small-scale repair and service shops tucked within residential blocks.

Manufacturing in Torino

Past, Present, and Future

Torino's post-industrial recovery has been slow, and a combination of increasing immigration and stalled employment has resulted in economic and social tensions. Milano, whose performance is often compared with that of Torino, has been lauded for its ability to navigate the post-industrial space through flexible development and openness to foreign workers and businesses.

Torino similarly exhibits high attractiveness for incoming workers and burgeoning start ups, and can further capitalize on its natural, social, and creative capital, as well as devise strategic links to Milano and other regional assets.

At present, Torino's manufacturing has either shuttered or edged outwards to the urban periphery, leaving many industrial sites closer to the city center abandoned. This is despite government attempts for private-sector investment through tax incentives.

Top university programs, especially those focused on engineering, draw a diverse foreign and domestic student body to the city, but struggle to retain talent, often losing trained graduates to nearby cities offering more employment opportunities.

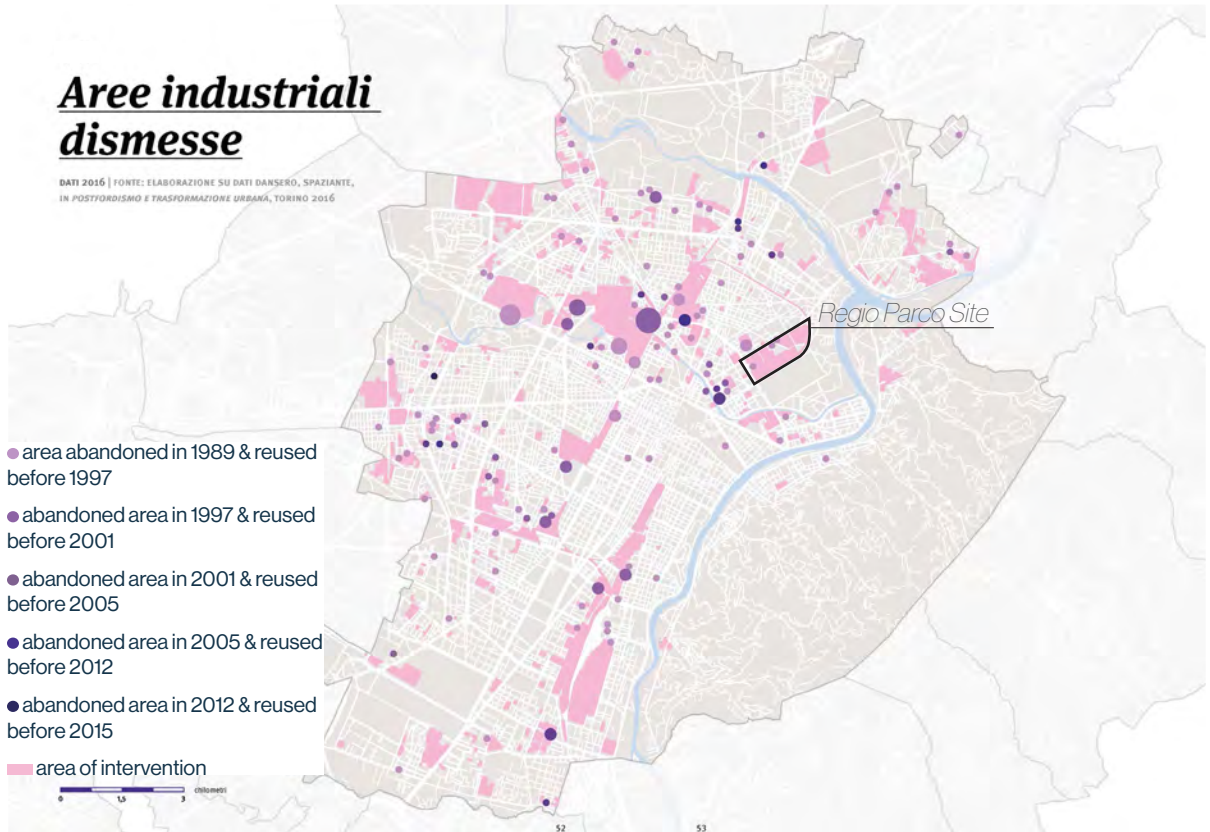
Abandoned Industrial Areas, 2016 
Source: Torino Atlas

Main Industrial Areas, 2018 
Source: Torino Atlas

Aree industriali dismesse

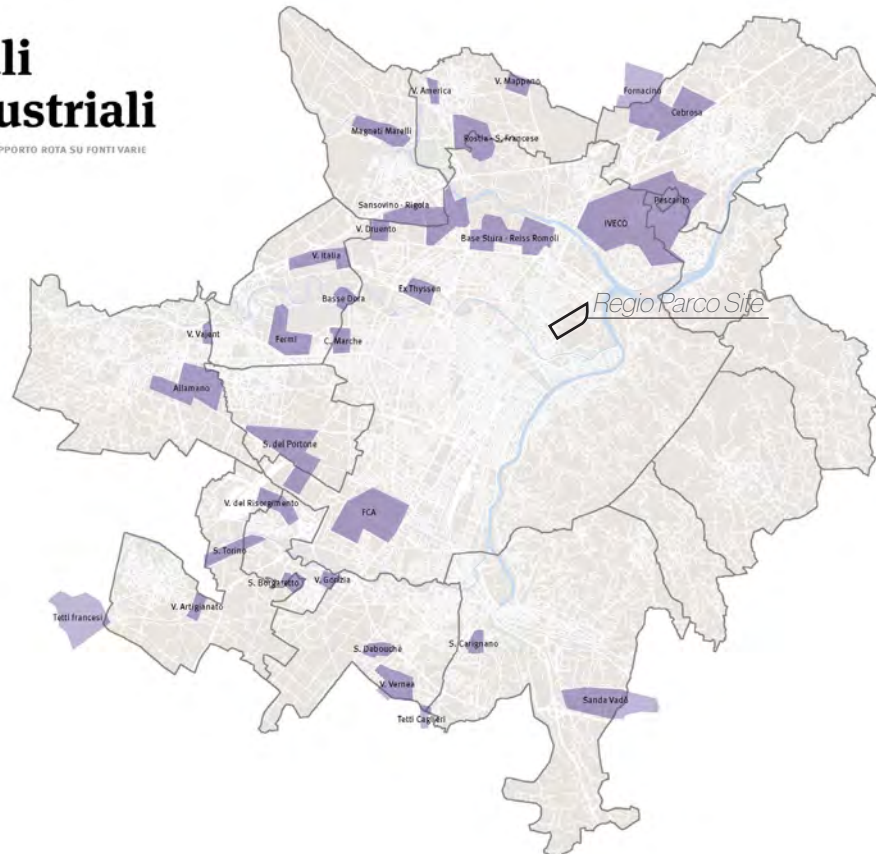
DATI 2016 | FONTE: ELABORAZIONE SU DATI DANSERO, SPAZIANTE, IN POSTFORDISMO E TRASFORMAZIONE URBANA, TORINO 2016

- area abandoned in 1989 & reused before 1997
- abandoned area in 1997 & reused before 2001
- abandoned area in 2001 & reused before 2005
- abandoned area in 2005 & reused before 2012
- abandoned area in 2012 & reused before 2015
- area of intervention



Principali aree industriali

DATI 2018 | FONTE: ELABORAZIONE RAPPORTO ROTA SU FONTI VARIE



Manufacturing in Torino

Past, Present, and Future

Some local production and services survived the industrial decline - a testament to localized supply chains, specialized skills, and constant reinvention.

Another factor contributing to urban industrial survival is the change in spatial requirements from old to new industry. Smart Manufacturing, or Industry 4.0, augments present computerized automation with machine learning and data-driven systemization. From a management perspective, this improves efficiency and decreases waste. From a spatial perspective, this often requires less floor area and is less spatially prescriptive. It is also more adaptable to quick change, be it a shift in the market, economy, or workforce. From a planning perspective, there is less need for wide separations between residential and industrial uses. Furthermore, changing consumer behavior, along with increased e-services and web aggregators, is affecting how products are made, scaled, and marketed. New technology and systems organization in smart manufacturing offer opportunities for better integration with housing, safer industrial processes, decreased waste and pollution, and more cohesion with the surrounding neighborhood.

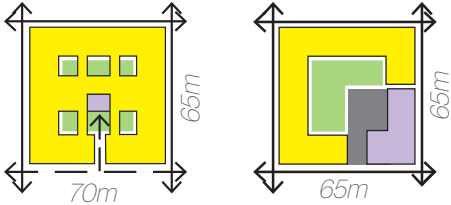
Current Land Use and Zoning practices, however, do not reflect these technological or industrial advancements, and have not adapted to these new forms of manufacturing. This has created unnecessary difficulties for productive land uses to locate in places like Regio Parco.

Furthermore, after the decline of Fiat, there resulted a tension between top-down and bottom-up industry growth in terms of larger and smaller firms. The economic changes brought to light the risks of such massive all-encompassing corporate structures. It is thus useful for the city to consider ways to integrate the benefits of top-down action (investment incentives, targeted industry sectors, subsidized tenancy) and bottom-up action (coordination with local community groups, artisan small industries, cooperatives) to better diversify industrial activity and disperse economic opportunity.

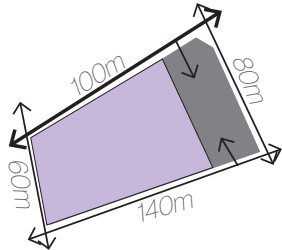
Interior Courtyard Block Types are common in Torino, with small scale manufacturing surrounded by taller residential buildings.



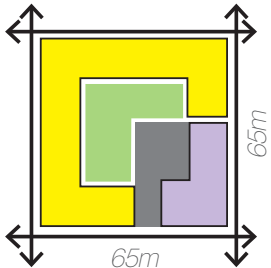
The following examples of existing sites represent variations in location, size and scale of Torino's industrial landscape. Except for the large scale Pirelli Tire Factory, which is located on the outskirts of the city, all the others are within the city center. Often they coexist with the existing urban fabric, deceptively integrated with the surrounding buildings or sitting adjacent to other land uses without posing nuisances to neighbors. These exemplify how innovation and tradition can be combined to encourage safe, successful, and attractive manufacturing in urban areas.



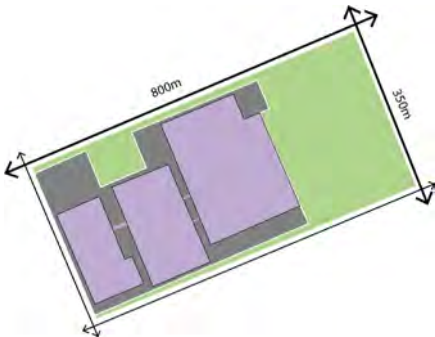
The Makr Shagr and Guido Gobino sites represent typical layouts of Torino blocks, with housing engulfing small-scale, non-disruptive forms of industry.



The Quercetti Toys site has a larger footprint and is a stand-alone building located in a mixed residential-commercial area.



Mattioli Jewels is located on the northeastern edge of the Regio Parco site as a stand-alone building but part of a larger manufacturing campus.



Pirelli Tires, located in the peripheral area of Settimo Torinese, represents a traditional land use that includes a large buffer between industry and urban life.

While it may not be appropriate to integrate Pirelli-like manufacturing into Torino's urban core, there is possibility to reintroduce small- and medium-scale manufacturing, thus adding to the definition of productive spaces in land use and zoning considerations.

Housing
 Industry
 Open space
 Parking/loading/circulation
 *Diagrams' scale not relational.

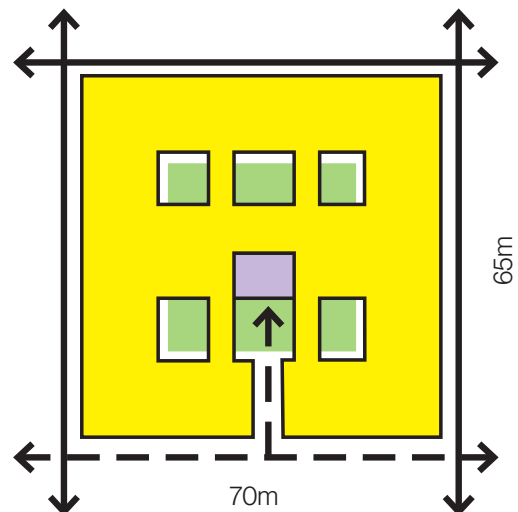


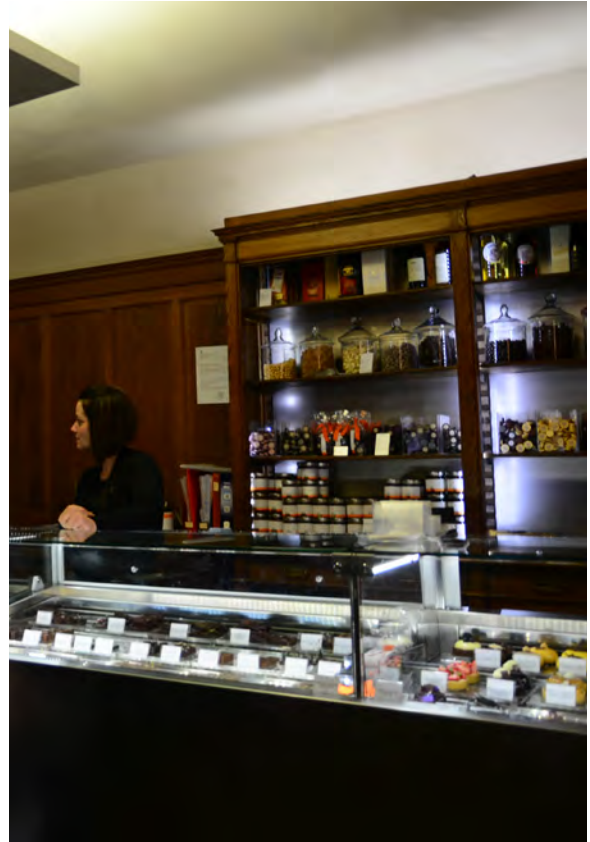
SMALL SCALE MANUFACTURING / R+D

Makr Shkr, a robotic bar system designed by Carlo Ratti Associati, is headquartered in Piazza Vittorio Veneto of Torino's city center. The headquarters consist only of office space and R+D, occupying approx. 170sqm, with the manufacturing located outside of Torino and the flagship bar located in Milano. The Makr Shkr company shares its workspace with another technology startup called Scribit, evidencing the possibility of flexible coworking office and R+D spaces.



▲ Makr Shkr



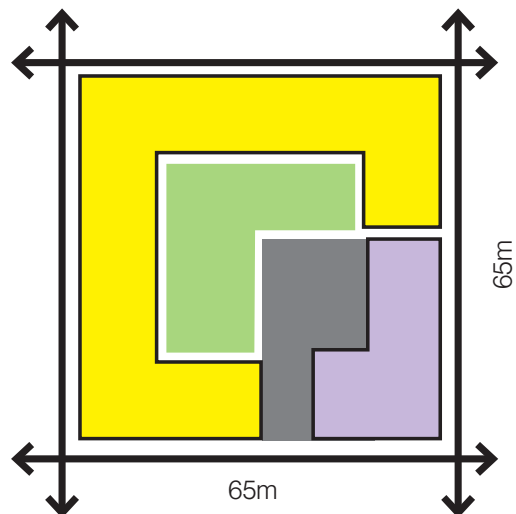


SMALL SCALE MANUFACTURING

Guido Gobino artisan chocolatiers have been producing high quality chocolate in Torino since 1946. While staying consistent with “ancient recipes”, the company has renovated their production processes over the years to improve manufacturing and business. Their current factory site, on Via Cagliari, contains an impressive supply chain from production to sales within a relatively small area of approx. 600 sqm. Tours are offered for the public to showcase the legacy and quality of the product, and to build brand loyalty.



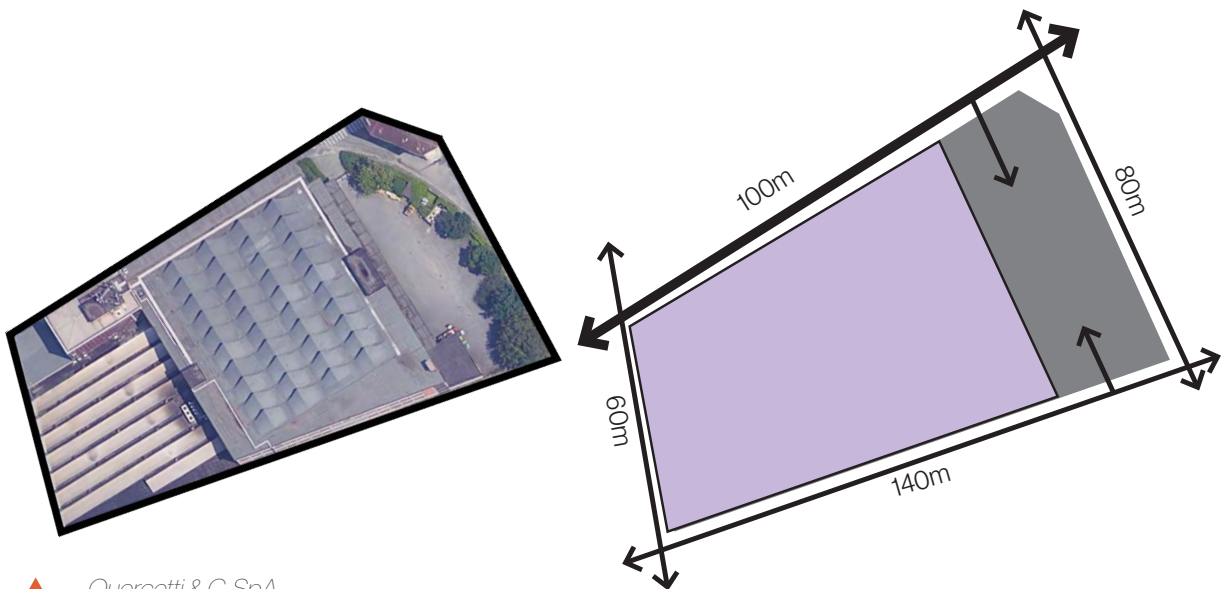
▲ *Guido Gobino*





MEDIUM SCALE MANUFACTURING

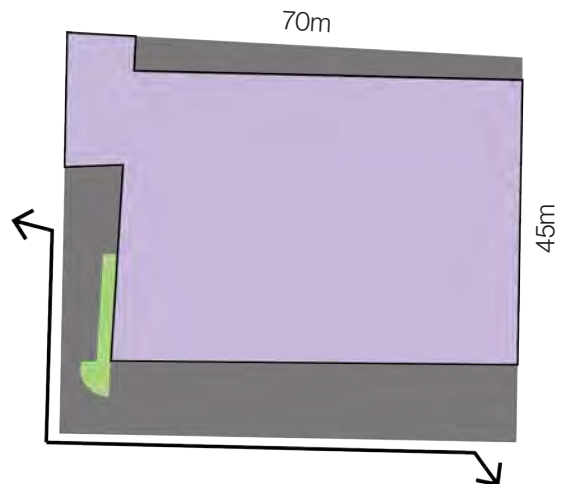
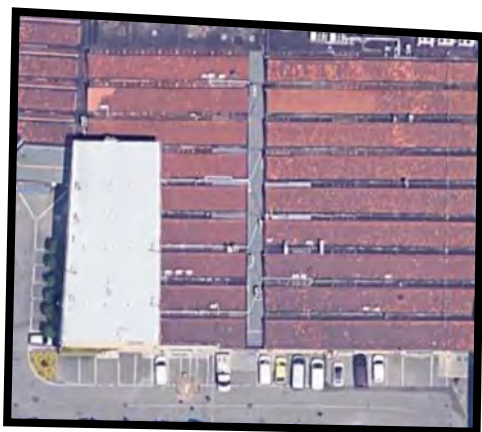
Quercetti & C. SpA, an educational toy company, has been manufacturing children's toys in Torino since the 1950s. Headquartered in the Barriera di Milano neighborhood, Quercetti's medium scale factory covers a surface area of 16,000 sqm, of which 14,000 are assigned to production departments. Adjacent offices allow convenient R+D feedback and oversight of manufacturing.





MEDIUM SCALE MANUFACTURING

Mattioli Jewels has roots in Torino stemming from 1860. Early goldsmithing and master craftsmanship have evolved into contemporary processes using advanced technologies. A state-of-the-art factory, based in the northern side of Regio Parco, houses the entire production cycle. Mattioli is committed to a plastic-free factory by 2020, high safety protocols, product traceability, social accountability, gender equality, environmental management and employee training.

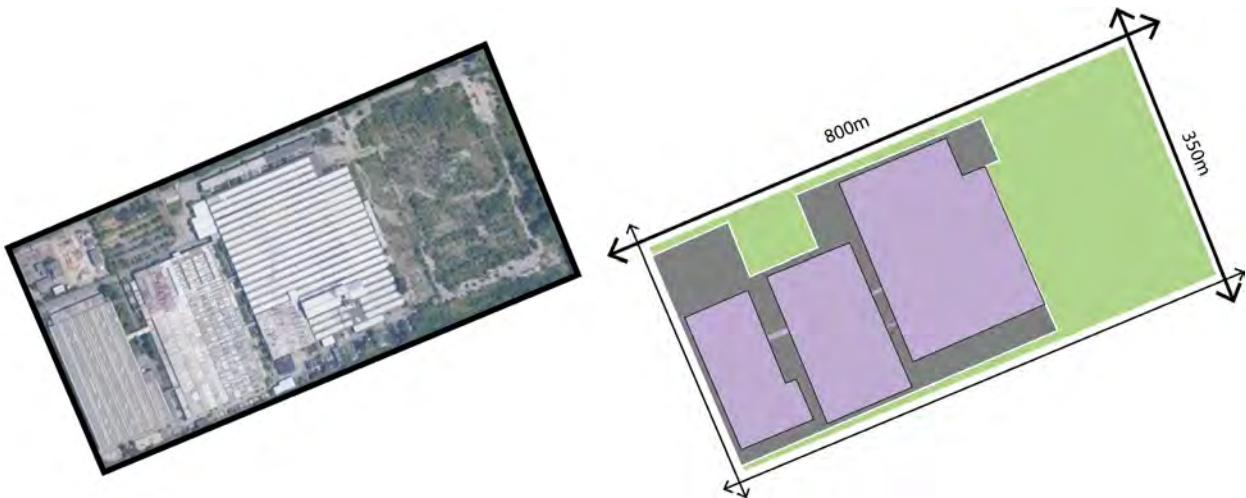


▲ *Mattioli SpA*



LARGE SCALE MANUFACTURING

Pirelli Tires has origins in Milano rubber manufacturing dating back to 1872. In 2008, after global expansion, Pirelli opened the Settimo Torinese industrial plant, a site approx. 0.3 square kilometers designed to be the most technologically advanced of its factories. From 2014-2020, Pirelli partnered with Politecnico di Milano and Telco for a “Total Efficiency 4.0” project to devise scalable smart manufacturing infrastructure for better competitive advantage in the Lombardy Region.



▲ *Pirelli Tires in Settimo Torinese*



View from Monte dei Cappuccini

Regio Parco

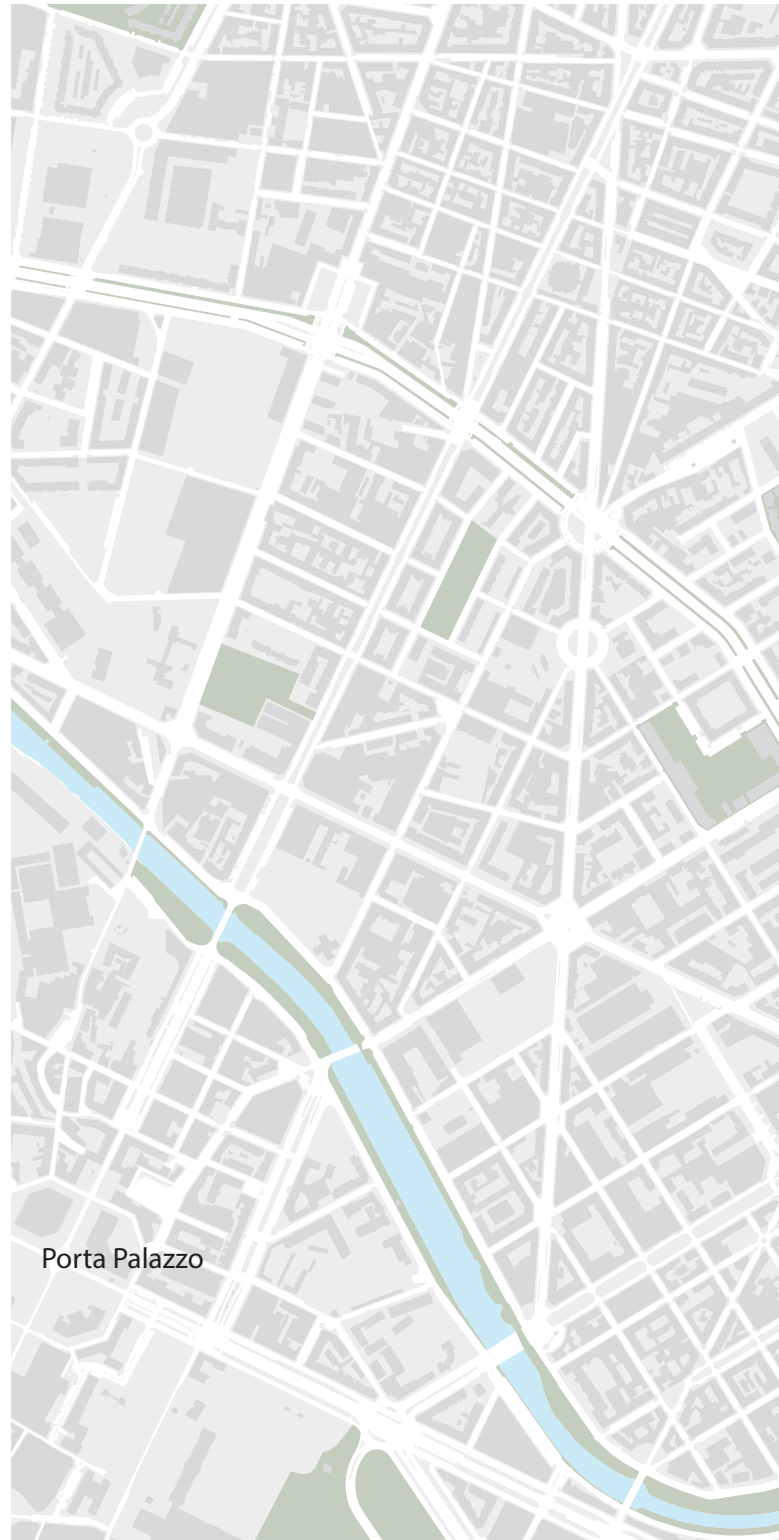
A Testbed for Torino's Future

SITE CONDITIONS

Regio Parco presents an optimal testbed for a reintroduction of integrated urban manufacturing. Located just north of the city's heart, the delineated Regio Parco site has an area of 0.6 square kilometers and consists mostly of the decommissioned Torino-Vanchiglia railway yard and sparsely utilized buildings.

Its proximity to the Barriera di Milano area offers links to established residential communities and social spaces. To the south-west of the site is the Torino city center including the significant Porta Palazzo marketplace and cultural hub which draws locals and tourists alike. Nearby open spaces such as Parco Colleta, Cimitero di Torino (cemetery), the River Po, the Dora Riparia, neighborhood pocket parks and green corridors along the rivers are valuable amenities.

With improved transit, the Regio Parco site could strategically be connected to the nearby established residential, commercial, tourism, and university areas.





Barriera di Milano

Po

Via Bologna

Corso Regio Parco

Cimitero di Torino

Parco Colleta

Corso Novara

Dora Riparia

500 m

Existing Zoning and Land Uses

Industrial and non-Industrial Activities

Current land use is a combination of industrial, institutional, residential, and commercial, all of which are sprinkled throughout the site. Activities are isolated from each other, often divided by walls or disconnected from lack of street connections and an abundance of abandoned areas. Torino's urban character has many introversions, such as interior courtyards and small alleyways, that contribute to its charm. However, if too hidden or difficult to access, it can isolate activities and limit public life.

ZONE OF URBAN TRANSFORMATION (ZUT)

A significant portion of the site is vacant or underutilized, with sparse housing and lingering mixed-production zones. A handful of governmental and cultural services are established on site, with potential for expansion and integration into a future mixed-use industrial area. The majority of the site has been slated as a "Zone of Urban Transformation" (ZUT) with different layers of variances being granted over time, all for the purpose of encouraging revitalization through flexible zoning.

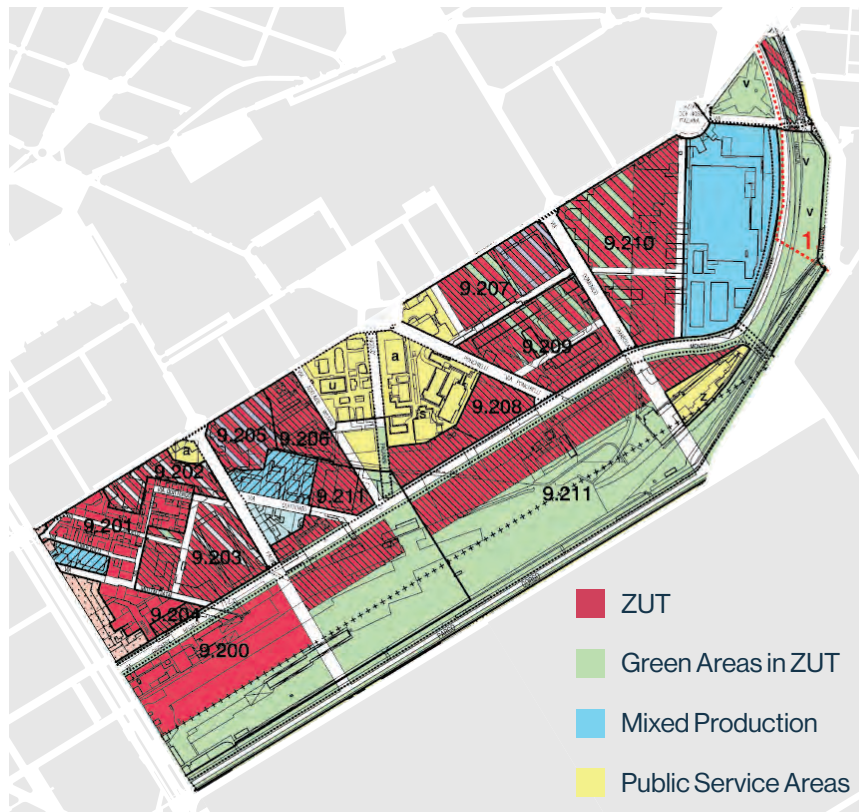
CONNECTIVITY

A new metro line and a high-speed rail link with Lyon are under construction, bringing further connection between this site, the city, and farther areas. Effective infrastructure for movement of people and goods is at the forefront of industrial revitalization.

WORKFORCE

Immigration to Torino has been increasing since the 1990s, mostly consisting of young people from Africa and the Middle East, and the Roma population. As of 2016, immigrants consisted of 15% of the population, mostly clustering in areas like San Salvario (early 2000s) and Barriera di Milano (today). With the city struggling to manage this influx, various social enterprises and civic associations work to integrate these new populations. Regio Parco is adjacent to Barriera di Milano and near to Porta Palazzo, a major center of immigrant commercial activity, and thus can be positioned as a future asset for training, employment, and social integration.

Current Land Use and Zoning in Parco Regio



La Casa del Quartiere is a social enterprise network of 8 neighborhood associations aimed at improving the quality of life for residents through workshops, services, events and community space.

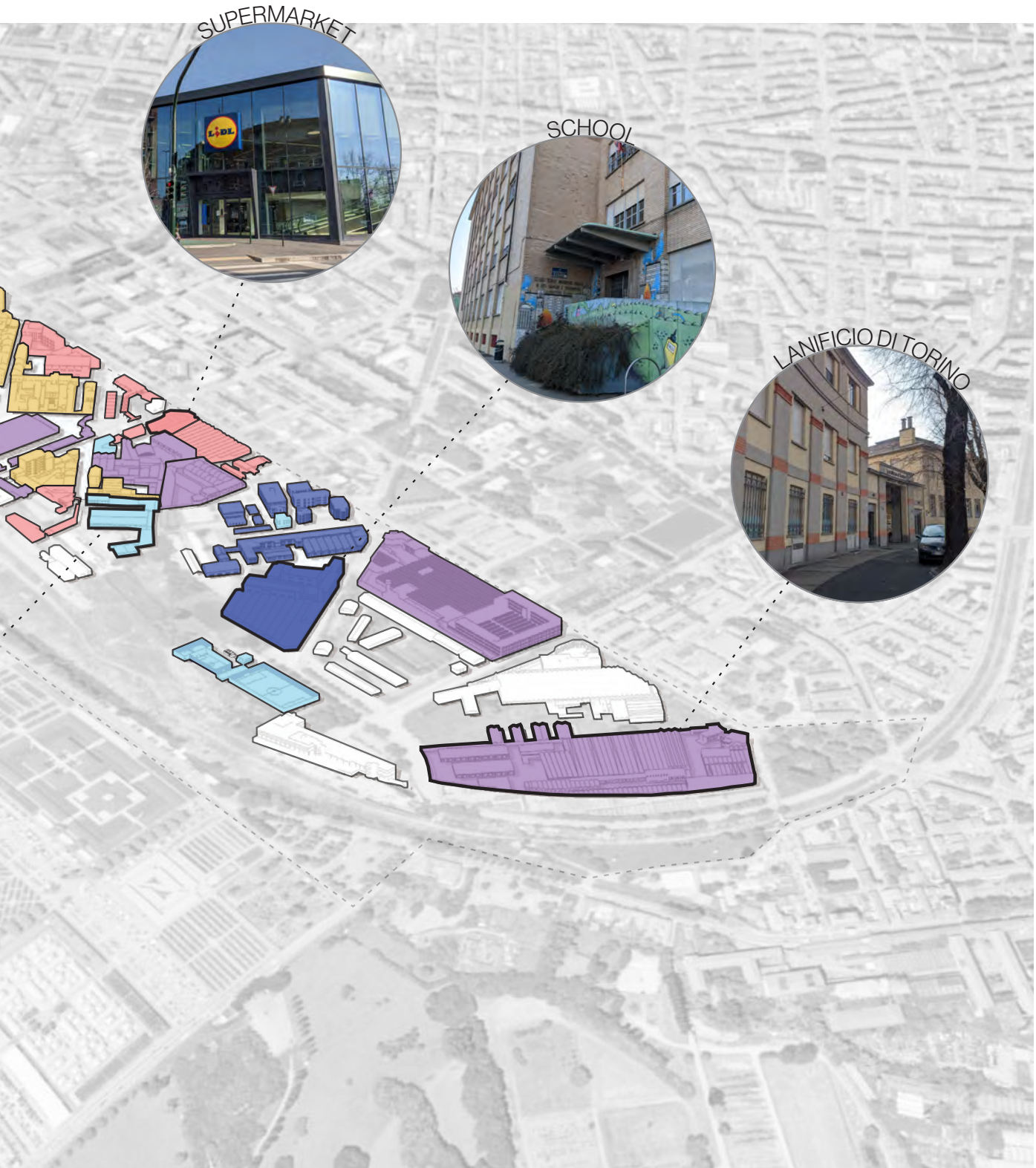


ON-SITE ACTIVITIES

The northeast end is anchored with manufacturing spaces, both active and inactive. The active spaces are part of the Lanificio manufacturing complex, whose textile legacy dates from 1889. The complex now includes luxury jewelry maker Mattioli, and well as other small and medium sized artisan headquarters and production spaces. The complex is walled off from nearby streets, including towards the social housing across from it, disconnecting industrial activity from residential uses. Towards the center of the site are two schools, IIS Bodoni-Paravia (Institute for Graphic and Photographic Arts Giambattista) and I.I.S. "J. Beccari" (State Vocational School Hotel Management), that line the streets leading up to the Bunker, a cultural center that adaptively reuses a post-industrial building for flea markets and outdoor cultural activities. Overall, there are no signs or advertisements for this space with the exception of murals on the walls of the schools and in the Bunker. While there is great potential for integration of uses, especially with institutions and cultural centers, currently there is no visible connection.

The opposite end of the site has a mix of residential, small-scale commercial, and industrial relics that are being repurposed for creative industry office spaces such as Bellissimo, a design agency that actively advocates for Torino's urban future. Despite more vibrancy compared to the other parts of the site, underutilized and abandoned spaces still present challenges to dynamic, integrated activities. A new supermarket recently opened in this area, providing much needed amenities for nearby residents and increasing foot traffic in the general area. A small sample of interviews revealed that the location of this supermarket is convenient for commuters traveling from city offices to peripheral homes. Lastly, there is a small amount of commercial activity along the southern edge, mostly flower shops that serve visitors to the adjacent cemetery. These flower shops, while active to their target user, are detached from the site as a whole.





SUPERMARKET

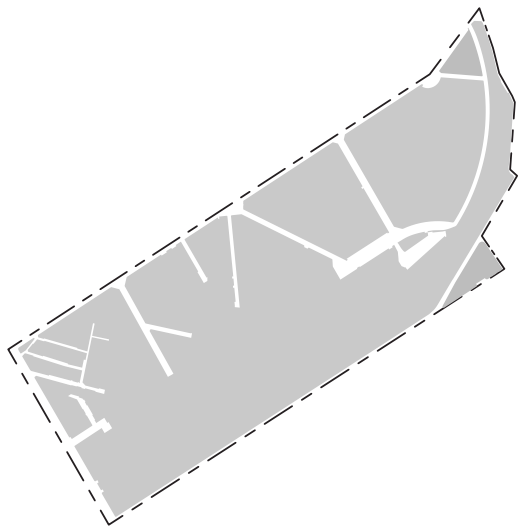


SCHOOL



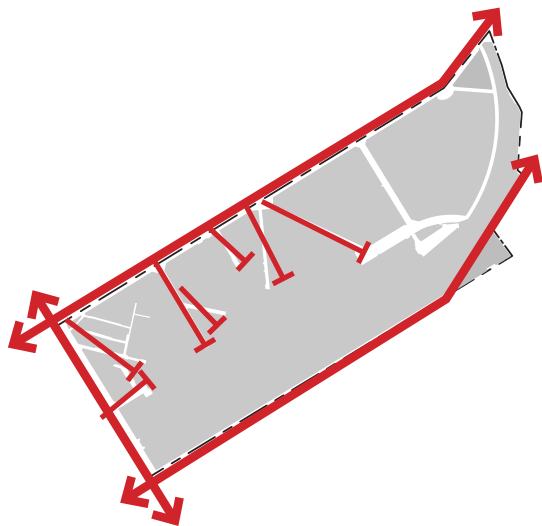
LANIFICIO DI TORINO





DISCONNECTED ACTIVITY

Isolated activity within each parcel leads to minimal interaction with the public realm and limited street visibility.



LIMITED PERMEABILITY AND CONNECTIVITY

Dead-end streets and uninviting thoroughfares discourage entry. Pedestrian, auto, and public transit traffic tends to run along the edges rather than through the site.

Existing Mobility

Traffic Flow and Transit

The site at Regio Parco is isolated from its surrounding communities by large arterial streets, fences and ditches. Automobile traffic dominates the streets with a lack of safe pedestrian and bicycle infrastructure. Via Bologna, bordering the site's northwest is a thoroughfare for auto traffic traveling to and from Torino's northern neighbor Settimo Torinese and onwards to Milano. Torino's bus network serves the neighborhood, but the metro does not come north of the River Po.

At present, the site is difficult to penetrate and navigate. Respondents to the survey expressed difficulty accessing parts of the site. The streets that do enter the site dead-end inside, or turn to come back to the perimeter, dissuading automobile traffic from cutting through the site. This leads to low traffic levels within the site, but significant traffic on its perimeter roads.

Pedestrians are forced to take long walks between intersections without much on-street stimulæ. There is a lack of street trees, plantings, and other types of public furniture that may make walks more inviting and comfortable for pedestrians. Between the site and the cemetery along Corso Regio Parco is the most forbidding pedestrian barrier, including a 500m walk with no opportunity to cross. Here, the overgrown ditch of the former canal is flanked by the fencing around the old rail yard and no sidewalk on the street's northern side.

The bus network encircles the site, but only one bus line, the No. 2 bus, enters the site to turn around at its terminus.



▲ *Corso Regio Parco, looking northeast*



Existing Green Space

Pervious Surfaces and Tree Cover

Regio Parco currently consists of limited green space making it not just unappealing but unhealthy for residents, neighbors, and visitors.

Regio Parco currently has vast expanses of concrete and asphalt and even the pervious surface areas are inadequately shaded by trees. Most green areas on site are neglected and offer little in the way of an amenity to residents, neighbors, employees, and visitors, let alone to the environment.

With 58% of the site covered in impervious surfaces, the site likely also contributes to high stormwater runoff, the urban heat island effect, and poorer air quality.

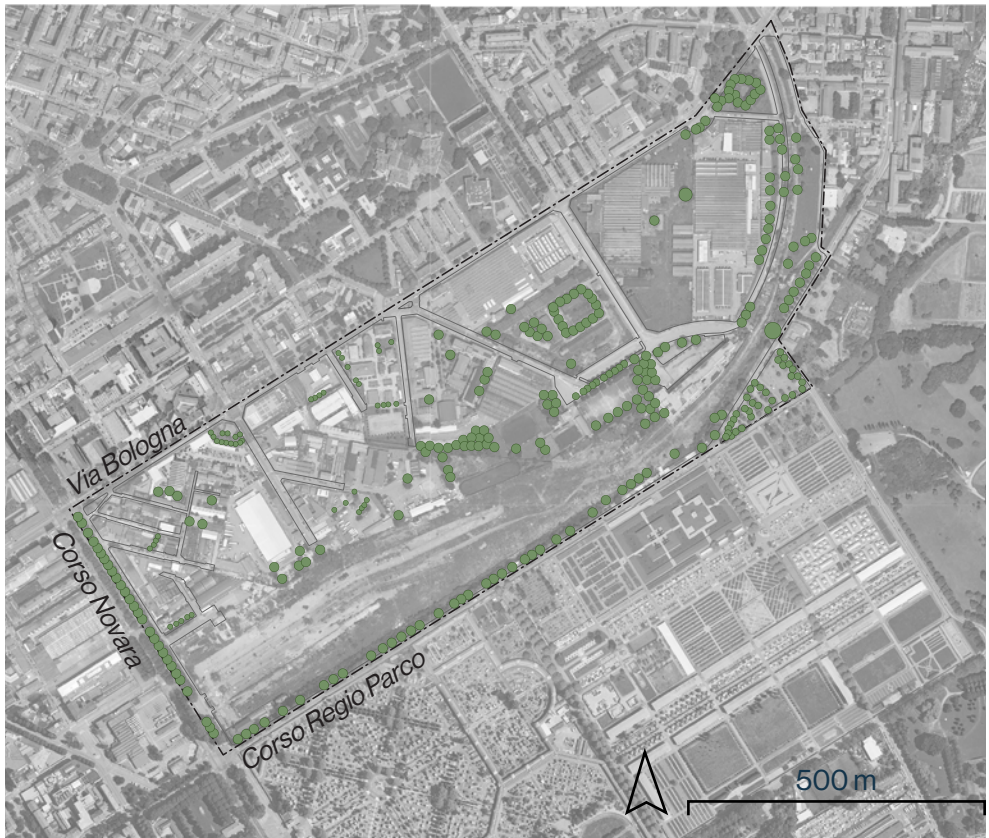
The 8% tree cover across the site is a major opportunity for increasing the tree canopy to improve stormwater management, beautify the site, and build a true public amenity.

There are further opportunities to connect green spaces on site with neighboring parks and create a continuous green network.





42% pervious surfaces on site



8% tree cover on site



PASSIVE OPEN SPACES

The eastern and northern edges along the site are unmaintained and provide little or no pedestrian-friendly infrastructure. Within the site, there are large expanses of pavement, especially around the abandoned ex-post office.



▲ *Unmaintained edges along the canal*



▲ *Unmaintained edges along the rail*



▲ *Parking Lot*



▲ *Arboretum to the east of the site*

ACTIVE OPEN SPACES

There are active open spaces within the site, such as the recreational sports fields. Adjacent to the site, there is also Parco Colleta with running trails and a public cemetery.



▲ *Recreational Area*



▲ *Cemetery to the south of the site*



▲ *Parco Colleta*

Unique Opportunities

Parco Regio offers site-specific opportunities for a testbed of urban manufacturing and creative production work.

Vast open space and unused buildings in the site offer a unique opportunity to rethink the site's relationship with the city.

The abandoned railway space can be reimaged to better connect with the green spaces around the site, especially with the surrounding parks and riverfronts. It also can be used to anchor the site with new, diverse uses that serve the nearby residents as well as attract people from all over the city.

In the past, Torino's residents have informally and temporarily occupied the site for market and community events, evidencing the demand for more public open spaces.

Additionally, the unused buildings, such as the old post office building on the southeastern corner for which the city has held design competitions, can be repurposed for diverse projects that bring industry back into the area.

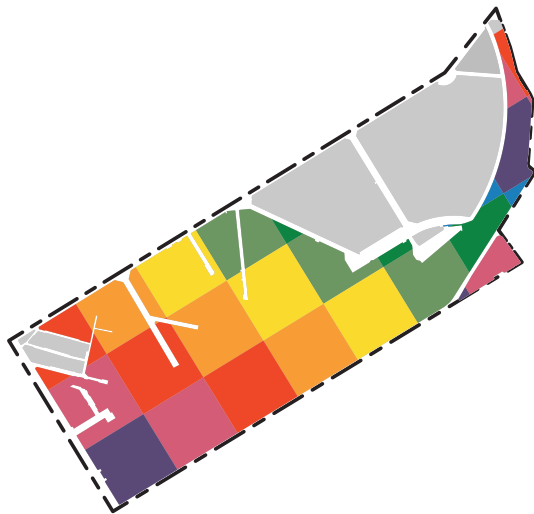
The location of Regio Parco provides an opportunity to bring together diverse communities, especially the migrant and immigrant population that live in the area. The neighborhood is already a vibrant place of exchange with many cultures coming together in the form of street markets. Moreover, there is history in the site as a host for such spaces.



▲ *The former train depot is taken over for a temporary market in 2015. [Image: Google Earth]*



Luca Ballarini of Bellissimo speaks to students ▲

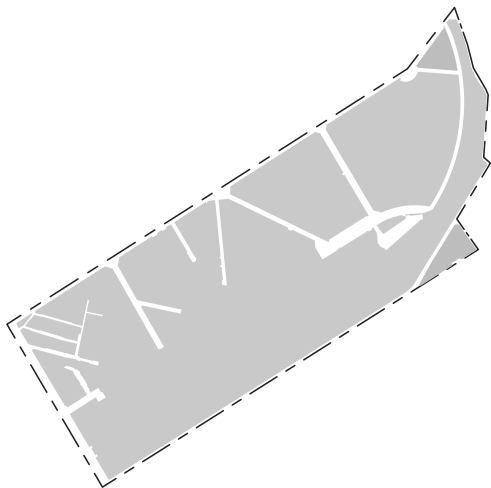


A COMMUNITY MOTIVATED TO REVITALIZE

Creative urban placemaking agencies, such as Bellissimo Design Studio, already locates on site, drawn to the area's industrial history, flexible working spaces, and entrepreneurial energy.



A peek-through into Parco Regio reveals unused space ▲

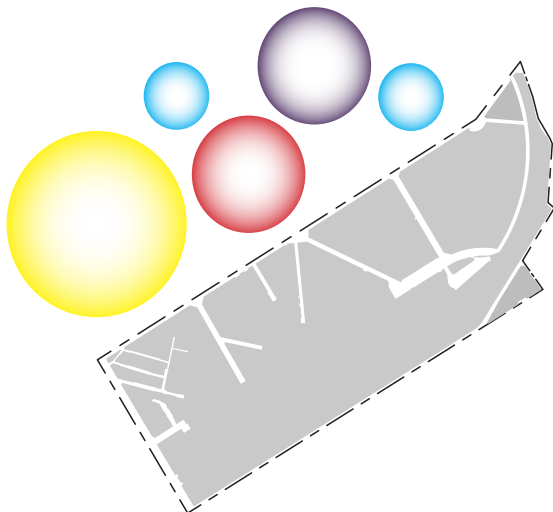


POTENTIAL FOR TRANSFORMATION

Vast open space offers the opportunity to rethink the site's relationship with the city.



Torino's active street life ▲



A VIBRANT PLACE OF EXCHANGE

Nearby to the site are dense residential neighborhoods inhabited by native Torinese and new immigrants. An overlapping mix of cultures thrives in the urban area, seen especially in the many large outdoor markets.



A sunrise from Regio Parco

Vision

Torino is well-poised to become a center of urban industrial innovation.

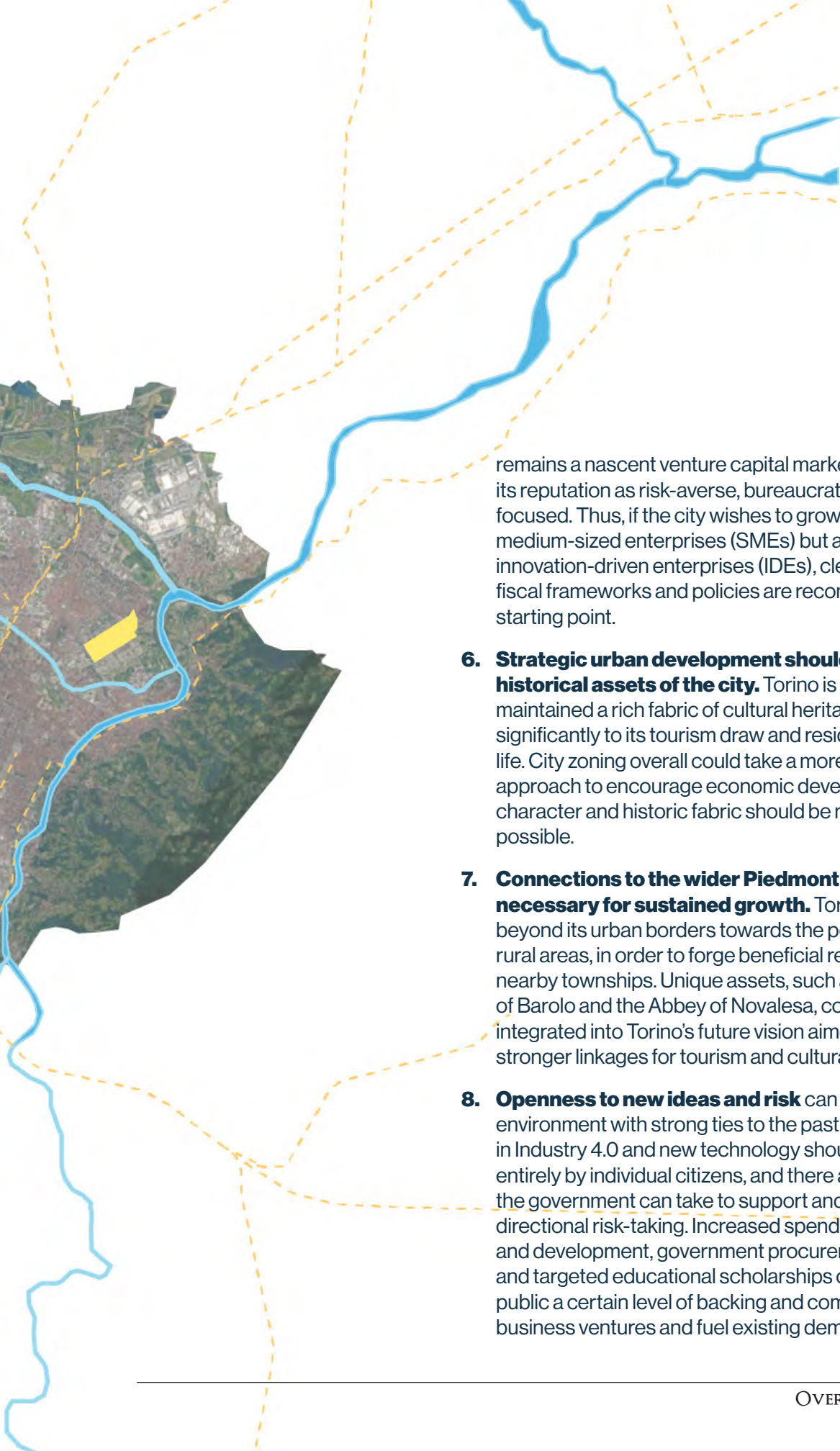
The greater city has fifteen colleges and universities, with many offshoot research and development centers, incubator initiatives, and entrepreneurial accelerator hubs. As of 2019, the Piedmont region hosts 8% of the national total business, and 11% of the national total of export capital. Torino, with approximately half of the region's population, has a diverse economy with clusters specializing in automotive, design, ICT, aerospace, and biotech and life sciences. This strong foundation allows it to position itself towards a high-tech and knowledge-based economy.

In many ways, Torino is a maker's dreamscape. It is lively and well-connected, with access to high-quality STEM education and a strong creative class. Goods and materials can be sourced locally and transformed by skilled workers. The city is filled with young entrepreneurial-minded students, residents, and new immigrants who seek to cultivate new opportunities. Additionally, it is an affordable city, steeped in cultural heritage, that wishes to protect its past while looking to the future.

Strong Foundations

However, in order to leverage its assets and develop sustainable industrial growth, Torino should give particular consideration to the following:

- 1. Adequate infrastructure is vital to business growth and scaling.** This applies to transit, freight and work areas. Creative approaches to land use-zoning, shared facilities (such as distribution centers), and adjustable building forms (such as flex spaces) should be considered.
- 2. Environmental protection is often pitted against industrial activity.** Any proposal for urban manufacturing should consider not only mitigation of negative externalities, but innovation in green technology and environmental policies within an industrial site. Sustainable practices should extend across all land uses to the extent possible on this site.
- 3. Social integration should not be underestimated as a driver of economic growth.** The city should tap into its existing workforce - including long term residents, the immigrant populations, and the student body - by creating incentives to retain, develop, and attract talent.
- 4. Business networks should be strengthened by leveraging existing systems and operations.** For example, an industrial supplier marketplace could help facilitate connections between Torino producers and suppliers. Similarly, a “Made in Torino” brand could push supply chain transparency that advocates local sourcing, responsible consumption, and a reliable regional chain. Moreover, strong business networks and a unified brand will provide Torino with increased global awareness and competitiveness.
- 5. Financial investment, often as risk capital, is a key component to any innovative and entrepreneurial activity.** While some large banks such as Compagnia di San Paolo fund early stage startups, Italy as a whole



remains a nascent venture capital market, unable to shake its reputation as risk-averse, bureaucratic, and internally-focused. Thus, if the city wishes to grow small- and medium-sized enterprises (SMEs) but also develop more innovation-driven enterprises (IDEs), clear and effective fiscal frameworks and policies are recommended as a starting point.

6. Strategic urban development should not forsake the historical assets of the city.

Torino is fortunate to have maintained a rich fabric of cultural heritage, which adds significantly to its tourism draw and residential quality of life. City zoning overall could take a more lenient, creative approach to encourage economic development, but city character and historic fabric should be maintained as best possible.

7. Connections to the wider Piedmont Region is necessary for sustained growth.

Torino needs to look beyond its urban borders towards the peripheral and rural areas, in order to forge beneficial relationships with nearby townships. Unique assets, such as the vineyards of Barolo and the Abbey of Novalesa, could be better integrated into Torino's future vision aimed at creating stronger linkages for tourism and cultural recreation.

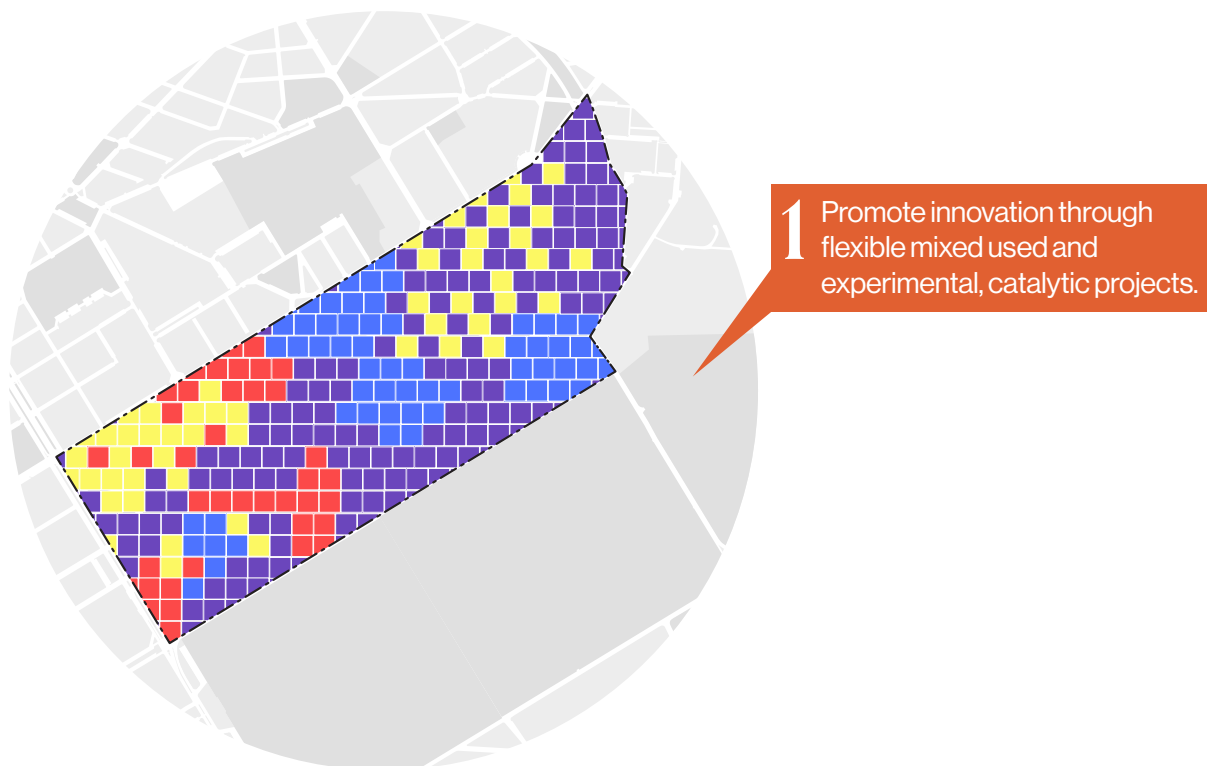
8. Openness to new ideas and risk

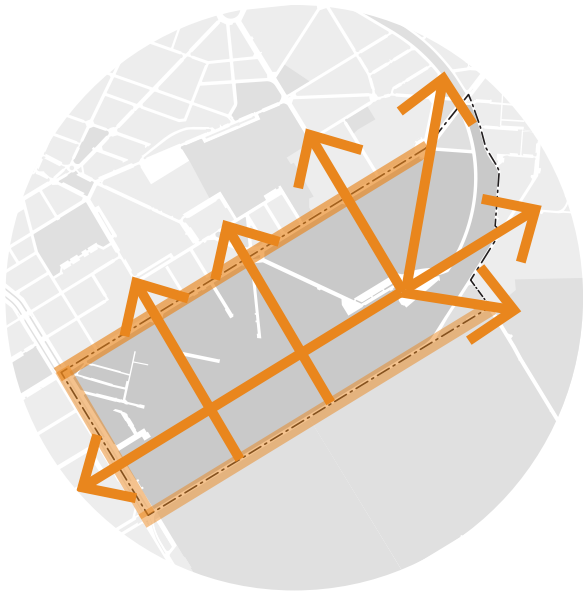
can be difficult in an environment with strong ties to the past. Risky ventures in Industry 4.0 and new technology should not be borne entirely by individual citizens, and there are actions that the government can take to support and encourage directional risk-taking. Increased spending on research and development, government procurement contracts, and targeted educational scholarships can signal to the public a certain level of backing and commitment to new business ventures and fuel existing demand.

Framework Principles

The overall goal for Regio Parco is to become an experimental site to test projects that will drive Torino's future. It aims to challenge the existing and nostalgic concept of manufacturing and ultimately to build upon developing innovations. The site should allow for creativity through flexible land uses and mix-use strategies, while promoting engagement with the rest of the city. It should also be a leader in rethinking sustainability and environmental issues.

Therefore, recommendations for Regio Parco are guided by the following five principles:

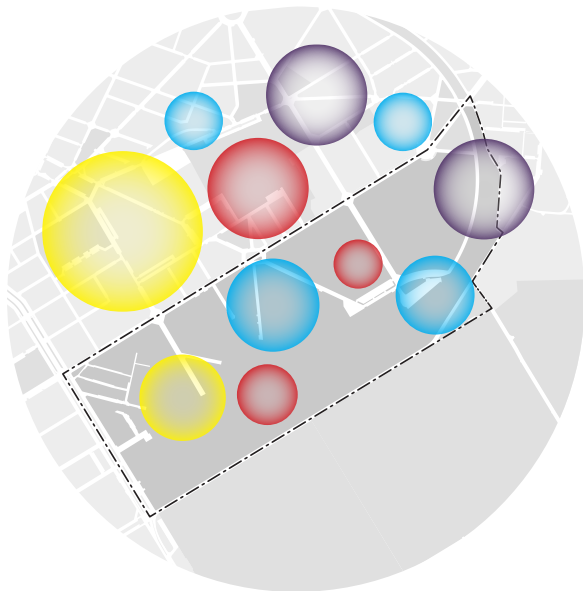




2 Increase accessibility by improving connections and site transparency.



3 Encourage organic growth by establishing robust manufacturing network and logistics infrastructure.

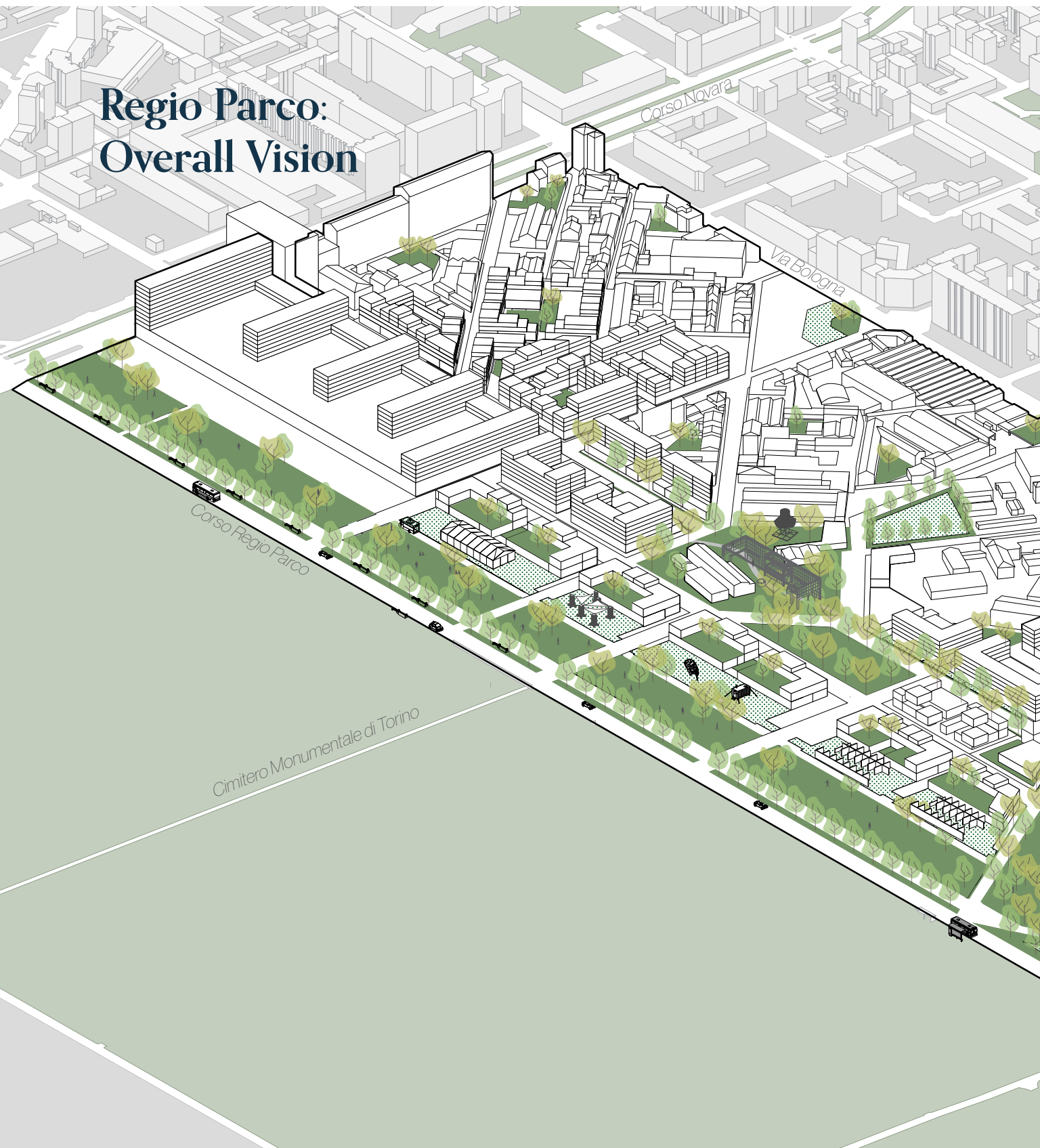


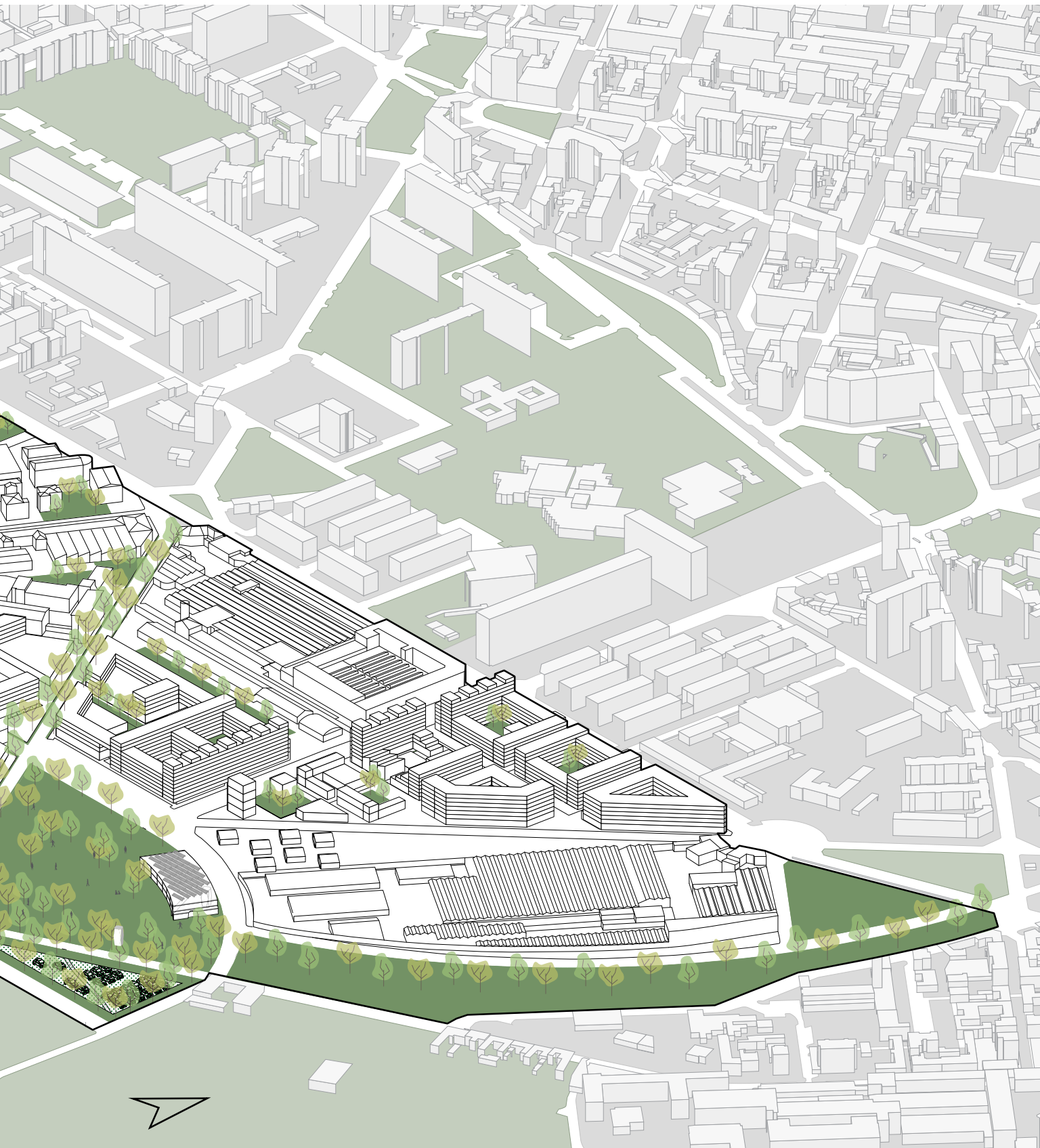
4 Serve diverse communities by boosting existing programming.



5 Ensure environmental sustainability through a dynamic open space network and green infrastructure.

Regio Parco: Overall Vision





03

Recommendations

INDUSTRY & MANUFACTURING
LAND USE & ZONING
MOBILITY
OPEN SPACE
CATALYSTS & IMPLEMENTATION
ENVIRONMENTAL SUSTAINABILITY

This chapter is organized into six subsections: Industry & Manufacturing, Land Use & Zoning, Mobility, Open Space, Catalysts & Implementation, and Environmental Sustainability. Recommendations for each of these subsections are intended to work together to create a mixed-use site that acknowledges an evolving definition of industry and production.

Land use and zoning codes around the world have failed to keep pace with the changing requirements of production and their ability to better coexist with other land uses. By relegating manufacturing and industrial production to the peripheries of metropolitan regions, cities have been losing out on the opportunity to support the manufacturing industry and improve work-life conditions for employees.

Industry & Manufacturing

Introduction

Today manufacturing represents almost 20% of Torino's economy. Despite an industrial decline since the mid 20th century, the city retains two key factors that contribute to its potential for smart industrial revitalization: a local supply chain and a skilled workforce. With creative mixed-use typologies and land use flexibility, Regio Parco could integrate these assets into an urban design that supports their industry.

Torino's local supply chain is currently fragmented but still active. High quality materials and expertise can be found within the winding streets and boulevards of Torino's urban areas. Furthermore, the local workforce specializes in precision mechanics, often employed in the automotive or the aerospace industries, and more recently applied to new industrial sectors such as food engineering.

However, in past decades, the workforce population has shifted towards the service sector, namely tourism. Torino's industrial sector employs 29% of the population while the service sector employs 69% of the population.

In consideration of the changing economic landscape, it is proposed to have adaptable spaces that vary in size, capacity, and activity. Transparency, openness and access are also key design features of new industrial typologies, which allow for visibility and visitation from both residents and tourists.

Proposed are four industrial typologies for the Parco Regio site: the Courtyard Block, the Tower Podium, the Industry and Distribution Center, and the Cultural Pods. For each typology, we show the FAR and building footprint size, as well as the percentage of industrial, commercial, residential, and cultural use. The designs are intended to allow flexible use, industrial productivity, healthy living, and compatible design to the existing Torino landscape.

Goals

Targets



INNOVATIVE

- Compatible mixed-uses
- Green technologies
- Inclusive designs
- Financial synergies



FLEXIBLE

- Live/Work spaces
- Plug-in spaces
- Open adjustable floorplans



CONNECTED

- Strengthened local supply chains
- Cross-sector collaboration
- Community links



ADAPTABLE

- Mixed industrial facilities
- Variation of scales
- Virtual and remote work support
- Ample open spaces



Historical documentation of Lanificio di Torino, an industrial site still in use today.

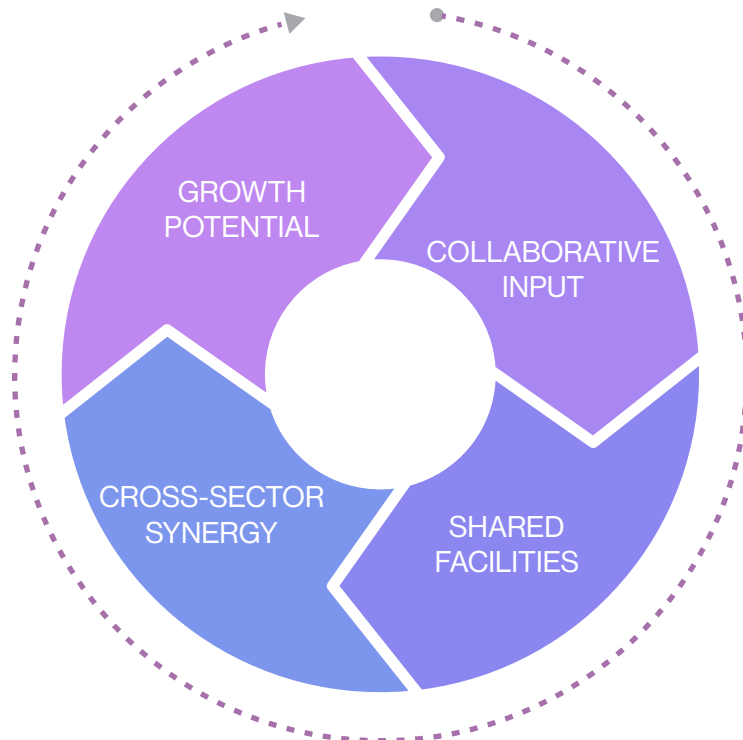
Guiding Principles

GROWTH POTENTIAL

Industrial buildings of the past were static structures, built with a one-size-fits-all approach for large manufacturing systems, equipment, and workforce. The industry of today is multifaceted (with differing equipment needs, changing working styles, digital and remote partnerships) and building typologies should address this diversity of services. Programmatic elements, such as incubator and accelerator programs, financial supports, skill building, and R+D, should easily integrate into the site's flow and capacity, and should be designed to welcome creativity and innovative ideas related to industry 4.0.

COLLABORATIVE INPUT

Collaboration and partnerships is key to sustainable growth and evolving industrial growth. University networks hold significant potential for research and testing of new technologies. Diverse entrepreneurs bring vision, corporates offer specialized expertise, government provides stability and targeted incentives, and risk capital balances the mix with private investment. Industrial areas must reflect such diversity of activities and skillsets. Mixed-use sites facilitate communication and feedback to ensure quality and productive effectiveness.



SHARED FACILITIES

Co-working spaces not only reduce set-up costs for small businesses, but promote collaboration and networking amongst different teams. Shared spaces such as offices, technology and testing labs, interior courtyards, and outdoor leisure areas increase interaction amongst residents and workers. Open spaces allow flexible uses that can be divided if needed. Specialized facilities, such as distribution centers, significantly help small business growth by streamlining and consolidating storage and distribution of products manufactured on site, while simultaneously cutting down on environmental impact.

CROSS-SECTOR SYNERGY

Typologies on site can be designed to allow for specialization, without being prescriptive in use. Sectors can be strategically combined for mutual benefits and reduced waste. For example, material sciences, agricultural technology, gastronomy, and industrial tourism might function with distinct objectives but whose operations and output can be leveraged as a collective. In this way, cross-sector synergy can produce more profit, job growth, and stronger business networks.

Policy Recommendations

The typologies proposed in this section are designed to be adaptive to emerging industry sectors, while facilitating collaboration and knowledge-sharing. Furthermore, they address the future of work as a fast-changing environment reliant on global conditions. With one eye to present-day needs and the other eye to future potentials, the four typologies encourage a quality work environment, a healthy balance with nature, and an ability to adapt and scale as needed.

MIXED-USE BUILDING TYPOLOGIES

Allow mixed-use buildings through zoning and creative land use regulations.

SHARED SPACES

Incentivize sharing, collaboration, and horizontal movement of ideas and workers. Protect intellectual property while creating lasting partnerships.

FLEXIBLE DESIGNS

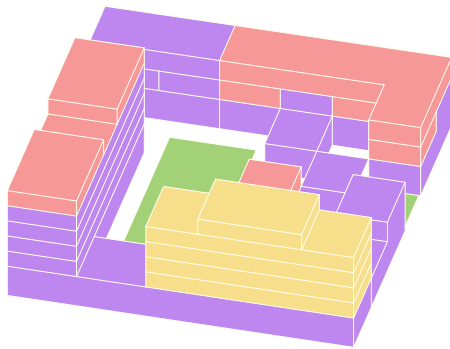
Ensure buildings are adaptable to a changing economy and a changing social landscape. Avoid overbuilding and prescriptive designs.

TRANSPARENCY & VISIBILITY

Produce a welcoming environment that draws people into the space. Integrate the industrial area with residential life, social and cultural activities, leisure and recreation, and the surrounding neighborhood.

The Courtyard Block

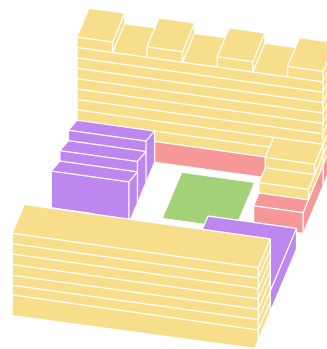
This design references Torino's existing mixed-use courtyard configurations. In this iteration, residential sections are elevated, with the ground floor for commerce or light manufacturing. This encourages street-level activities and opens up the inward-facing nature of courtyards.



20% Residential, 55% Industrial, 25% Commercial

FAR: 2.2

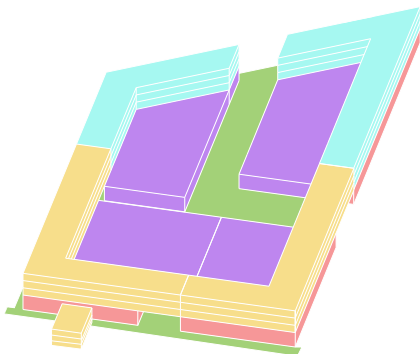
Building footprint: 2600sqm



80% Residential, 10% Industrial, 10% Commercial

FAR: 2.1

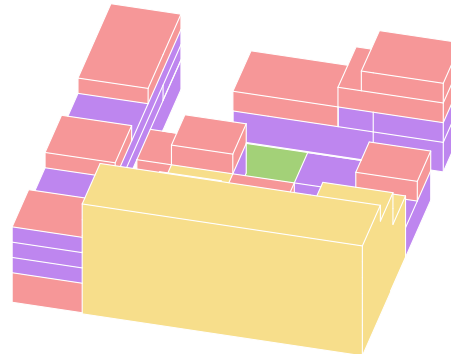
Building footprint: 2500sqm



30% Residential, 40% Industrial, 30% Cultural

FAR: 2.4

Building footprint: 4000sqm



35% Residential, 30% Industrial, 35% Commercial

FAR: 2.7

Building footprint: 2800sqm



Case Studies

Examples of mixed-use courtyard typologies combine small-scale, low disturbance manufacturing with residential and cultural activity. In some examples, the production activity is tucked within interior spaces but public access is maintained, creating an urban village-type experience.



OCT Loft Creative Culture Park | Shenzhen, China

Residential units mix with studios for light manufacturing and office space. Ground floor spaces feature cafes, shops, and galleries. Interior courtyards hold craft fairs, outdoor concerts, and community events.

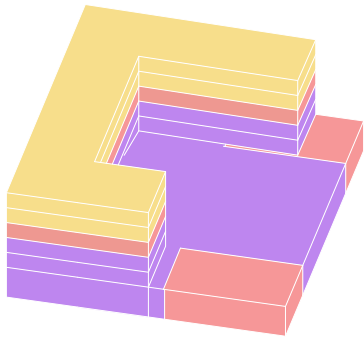


Makr Shkr / Scribit Design | Torino, Italy

Headquarters for two small start-ups include office space and R+D. The site is located within a traditional courtyard configuration, surrounded by residential buildings, in the city center.

The Tower Podium

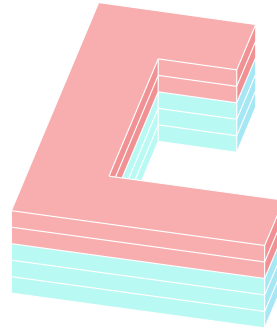
This typology allocates the first floor mostly for medium-scale industrial use. The tower section can be used as residential, cultural, and/or office uses.



40% Residential; 50% Industrial; 10% Commercial

FAR: 2

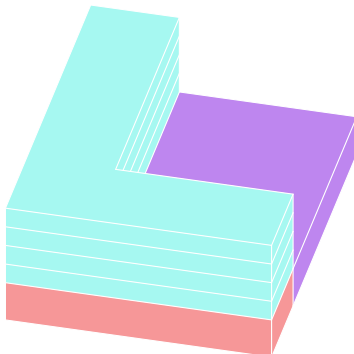
Building footprint: 2600sqm



60% Cultural; 40% Commercial

FAR: 1.2

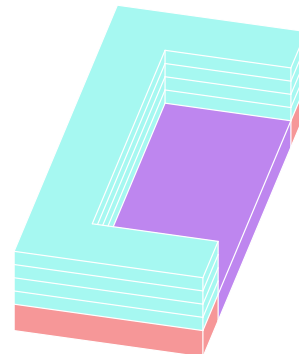
Building footprint: 1200sqm



20% Commercial; 20% Industrial; 60% Cultural

FAR: 1.3

Building footprint: 1700sqm



20% Commercial; 20% Industrial; 60% Cultural

FAR: 2

Building footprint: 3000 sqm



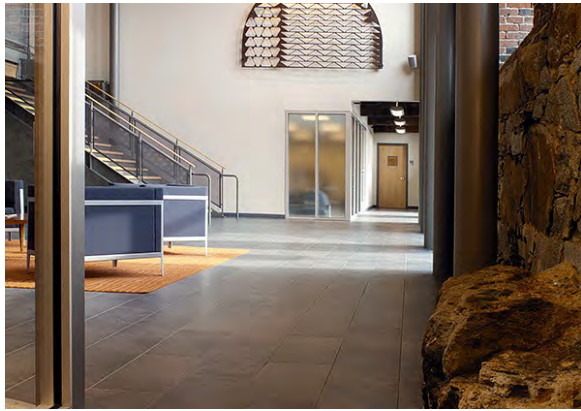
Case Studies

Tower podium typologies are popular globally, especially in renovations of former factories, where manufacturing areas are converted into live/work spaces.



Brewery Blocks | Tacoma, WA, USA

The redevelopment project of former industrial blocks uses a live/work/play approach, introducing luxury apartments and new restaurants. The 14-story proposal required applications for a height variance.

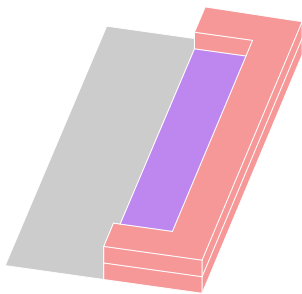


Washington Building No. 1 | Lawrence, MA, USA

The former textile mill was awarded a 2008 National Preservation Honor Award from the National Trust for Historic Preservation. The project, which created a large stock of mostly market-rate housing, was supported by the city for targeted investment into the neighborhood.

The Industry and Distribution Centers

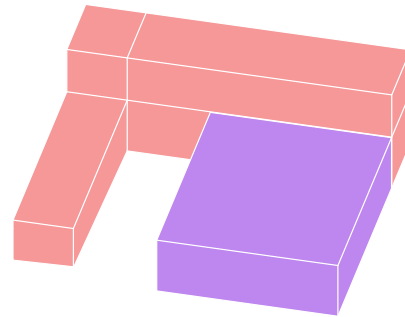
This typology aims to accommodate different scales of manufacturing on site. Shared spaces, such as storage or distribution, should be considered for extra support to small-medium scale businesses and more effective transportation of goods overall.



60% Med-Scale Industrial; 40% Commercial

FAR: 0.7

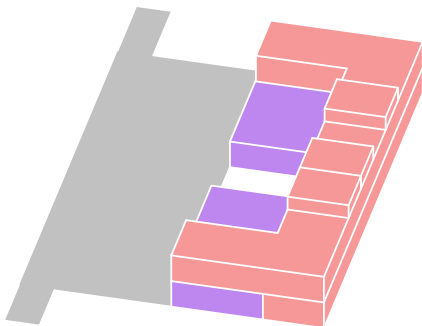
Building footprint: 1300sqm



50% Med-Scale Industrial; 50% Commercial

FAR: 0.6

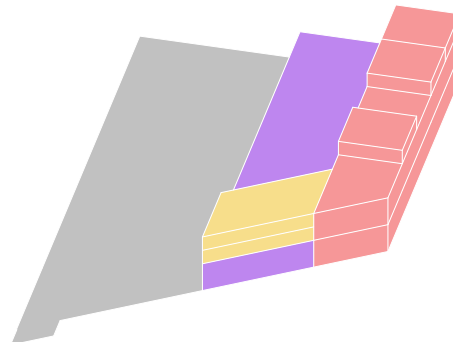
Building footprint: 900sqm



60% Small-Scale Industrial; 40% Commercial

FAR: 0.7

Building footprint: 3200sqm



30% Residential; 50% Small-Scale Industrial; 20% Commercial

FAR: 0.8

Building footprint: 2500sqm



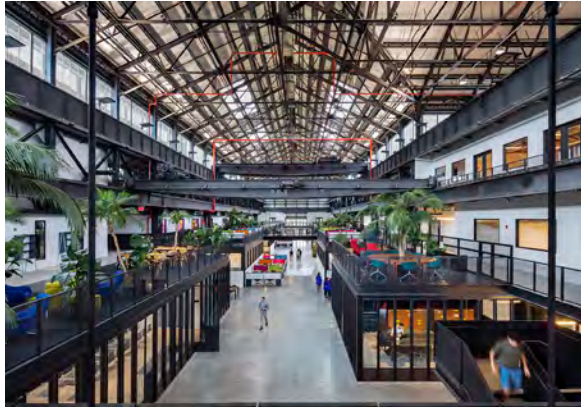
Case Studies

In comparison cases, light industry is supported by mixing retail, commercial and/or office use into the site. Often, sites are made more transparent and welcoming to the public, using the manufacturing process itself as marketing and branding.



Mixed-Use Light Industrial Proposal (by Utile Design) | Alewife, MA, USA

Proposals to preserve industrial jobs mix low-rent light manufacturing with high-rent commercial and office uses in order to subsidize and preserve light industry, seen as a tool for a more inclusive economy.

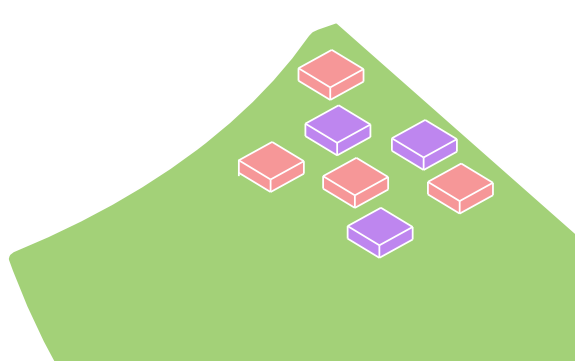


Brooklyn Navy Yard | Brooklyn, NY, USA

A 300-acre former shipbuilding park, converted into an industrial park, is seen as a “manufacturing community” that houses more than 450 businesses and 11,000 employees. The production site generates over \$2.5 billion annually in economic impact for Brooklyn.

The Cultural Pods

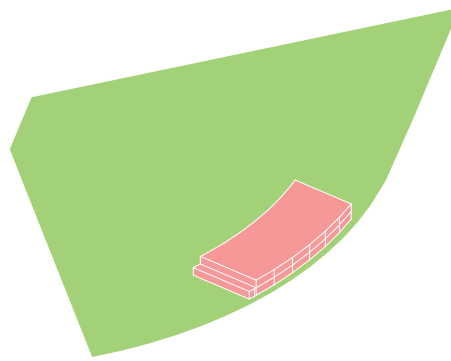
Cultural Pods are used for cultural-commercial purposes such as open markets or small manufacturing. The mixed-use buildings can also be used as training centers, art workshops, or exhibition halls. These are aimed to be visible and accommodating to public visitation.



50% Industrial; 50% Commercial

FAR: 0.2

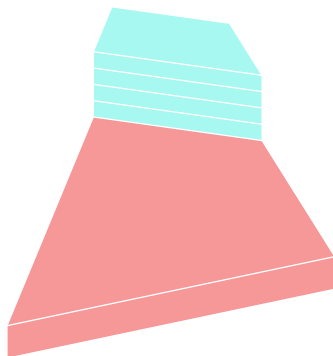
Building footprint: 1000sqm



100% Commercial

FAR: 0.2

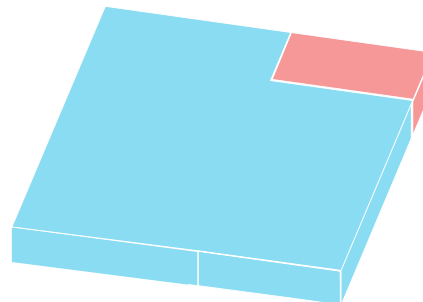
Building footprint: 500sqm



60% Cultural; 40% Commercial

FAR: 0.8

Building footprint: 1800sqm



80% Cultural; 20% Commercial

FAR: 0.6

Building footprint: 1000sqm



Case Studies

In global examples, modular containers serve as temporary buildings for food, art or cultural activities. In other cases, former industrial factories are renovated into arts districts, housing galleries, workspaces, and showrooms. Such sites depend highly on visibility and public access.



Manifesto Market | Prague, Czech Republic

Modular units create an active food and culture market that draws locals and tourists. The temporary structures support bottom-up organic community growth. Low overhead fees support small businesses.



798 Art District | Beijing, China

A 148-acre former military industry complex began to draw creatives in the 1990s, eventually being converted into an arts district with galleries, shops, cafe, and performance spaces. Today it is seen as a force of China's arts scene and new development trajectory.

Land Use & Zoning

Introduction

A flexible zoning overlay, expanding upon the City of Torino's existing "Zone of Urban Transformation" (ZUT), is proposed to encourage a mixed-use industrial district that accommodates evolving needs and future uses.

Land Use and Zoning regulations, aimed at improving quality of life through compatible proximal uses, can have the negative effect of inhibiting desired growth by being overly restrictive or compartmentalized. Furthermore, regulations often lag behind the rate of technological innovation and managerial changes, thus not addressing contemporary issues or leveraging opportunities.

Industrial manufacturing carries with it a slew of unappealing connotations related to pollution, disturbances, truck traffic, and vast concrete lots. Under these conditions, cities have preferred to relocate industry to the peripheries of their urban boundaries.

With technological advances and careful planning, we posit this does not have to be the future of urban manufacturing. An increasing demand for entrepreneurship

and innovation has cities rethinking the role of manufacturing within their borders. Today, cities around the world are reassessing their industrial districts, long abandoned and disinvested, to ask the question:

Can manufacturing return to urban centers, and if so, in what capacity and form?

Recent global events have highlighted the need for adaptive spaces that can handle shocks to traditional systems. Revealed weaknesses in global supply chains should be considered in future regional and economic development. Flexibility and adaptation are key, and should apply to all aspects of development, from workforce abilities, to building structures, to zoning. With aims for a productive and attractive industrial remix, we posit that urban industry can and should return to cities.

Goals



FLEXIBLE



DIVERSE



INCLUSIVE



HUMAN-SCALE



ACTIVE & SAFE



COMMUNITY-ORIENTED



VIBRANT

Targets

- Flexible land use and zoning regulation
- Modular residential, commercial, and productive units

- Mixed-use blocks
- Multiple scales of live/work/play units
- Varied ownership, joined in collective action (such as a Business Improvement District)

- Housing options to serve renters and homeowners
- Market and subsidized rates

- Walkable amenities
- Extensive ground floor portico network
- Urban village experience through density and connected spaces

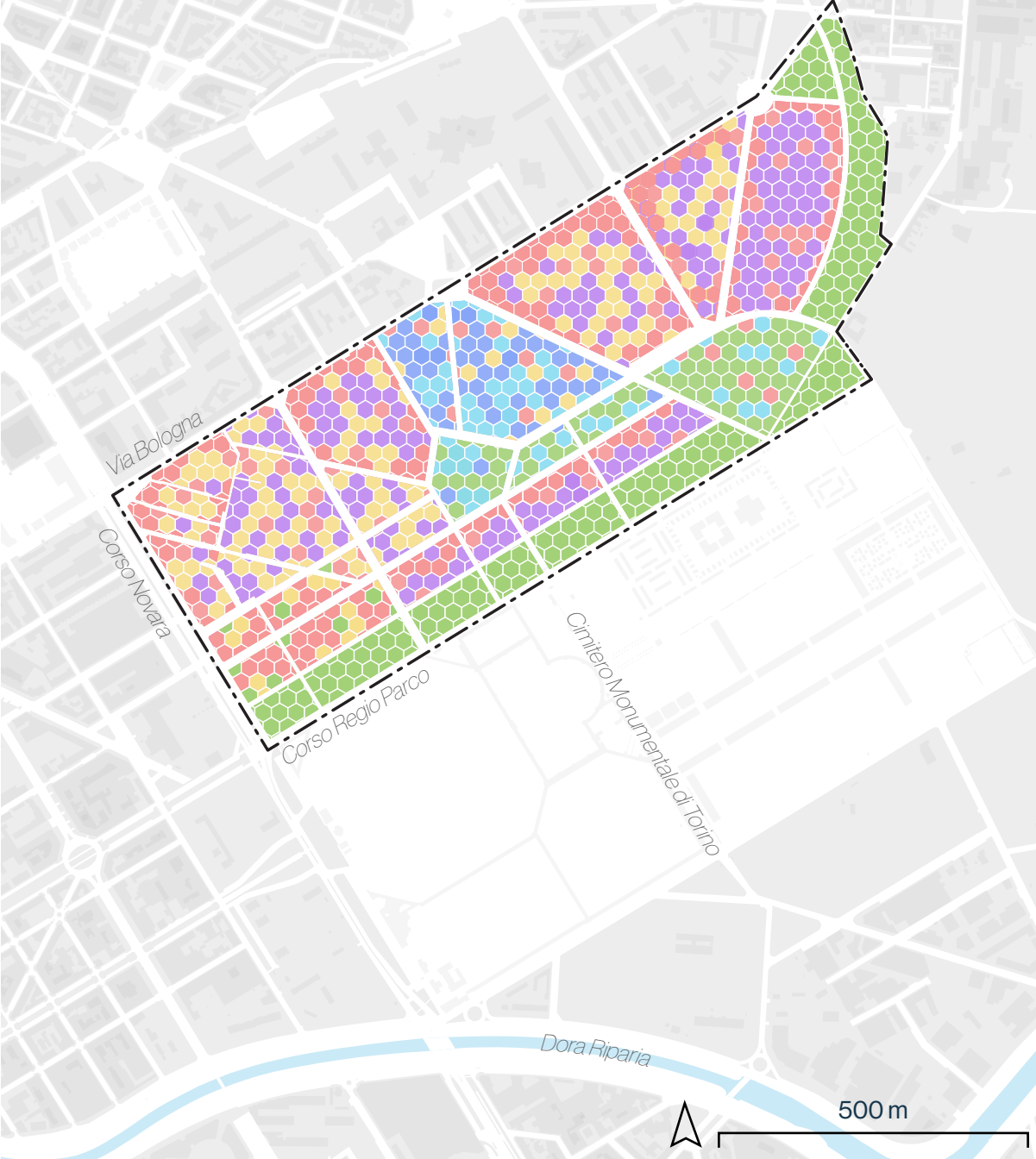
- Ground floor activity
- Transparent facades and adequate lighting
- Day and night programming

- Residential units spread across the site
- Dispersed pocket amenities
- Support for small and local businesses

- Abundant and diverse economic activities
- Integrated educational-production spaces
- Friendly to tourists and visitors, without losing authenticity as a productive space

PROPOSED LAND USE

As an alternative to conventional zoning, Pixel Zoning offers a gradient, rather than a strict percentage, of land uses within a designated zone. Pixel Zoning regulates uses to ensure compatible adjacencies, a balance of activities, circulation, and access to green space, while still allowing flexibility in land use siting to encourage incremental growth and adaptation to future changes.



Zoning Guidelines

These policy recommendations can be followed in order to create a diverse mix of uses that promote inclusive, active, safe, productive, and community oriented development. These policies must be flexibly adapted to accommodate new technologies and future needs. Regio Parco will act as a test bed to build the Torino of the future.

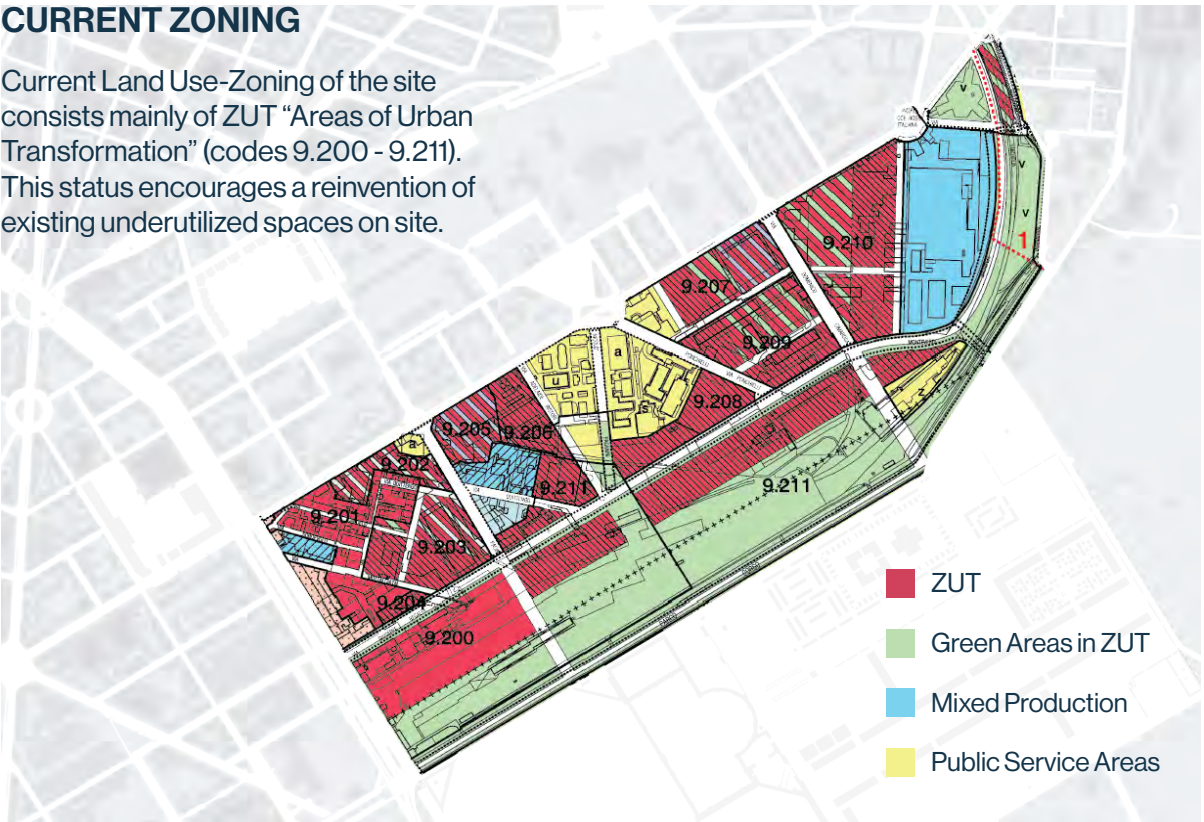
Under the proposed Land Use scheme, gradients of uses are adjustable to the needs of the site. This is meant to allow immediate flexibility for the city, for developers, and for users, but perhaps more importantly, to anticipate both steady and sudden changes to Torino's economic landscape in future scenarios.

Zoning Guidelines ensure safe and compatible adjacent activities on-site.

| Activity | Zone A | Zone B | Zone C | Zone D |
|--------------------|---------------|---------------|---------------|---------------|
| Residential | By Right | Not Permitted | By Right | Not Permitted |
| Commercial Retail | By Right | By Right | By Right | By Right |
| Commercial Office | By Right | By Right | By Right | By Right |
| Low Impact R+D | By Right | By Right | By Right | By Right |
| High Impact R+D | Conditional | By Right | Not Permitted | Not Permitted |
| Light Industry | By Right | By Right | Not Permitted | Not Permitted |
| Medium Industry | Not Permitted | By Right | Not Permitted | Not Permitted |
| Cultural | Conditional | Conditional | By Right | By Right |
| Institutional | Not Permitted | Conditional | By Right | By Right |
| Outdoor Recreation | Conditional | Conditional | By Right | By Right |

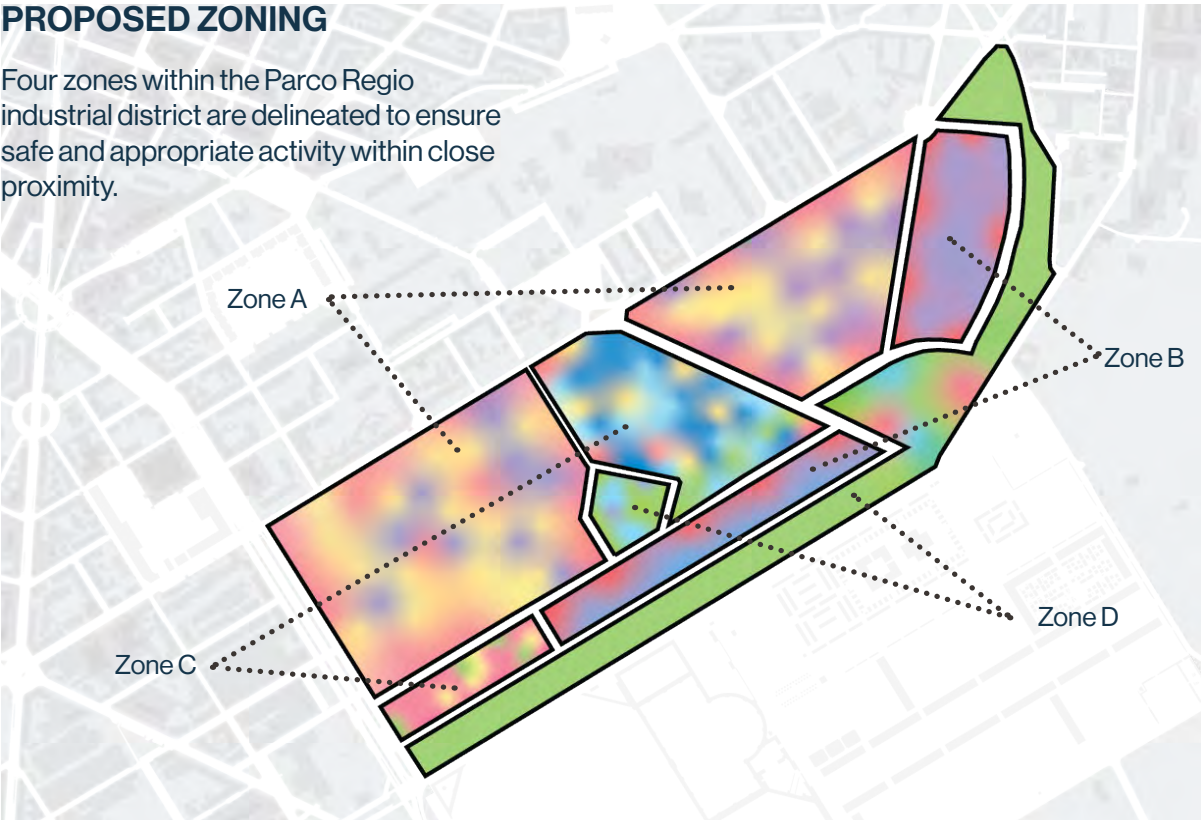
CURRENT ZONING

Current Land Use-Zoning of the site consists mainly of ZUT "Areas of Urban Transformation" (codes 9.200 - 9.211). This status encourages a reinvention of existing underutilized spaces on site.

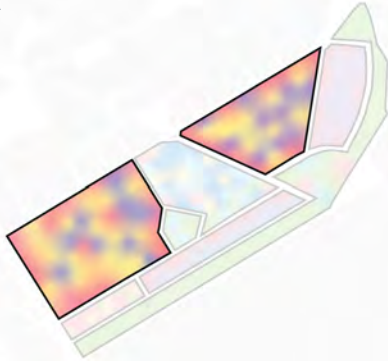


PROPOSED ZONING

Four zones within the Parco Regio industrial district are delineated to ensure safe and appropriate activity within close proximity.

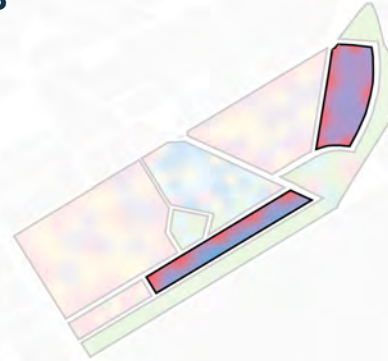


ZONE A



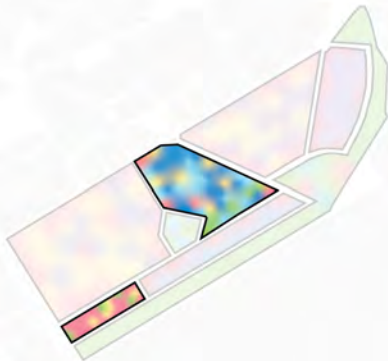
Zone A is the largest area on site, and is intended mostly for housing and commerce, with pocket amenities like small neighborhood parks and errand shops conveniently scattered throughout the zone. Light industry, coupled with low impact R+D, can take place by right, but higher disturbance activities are only conditionally allowed.

ZONE B



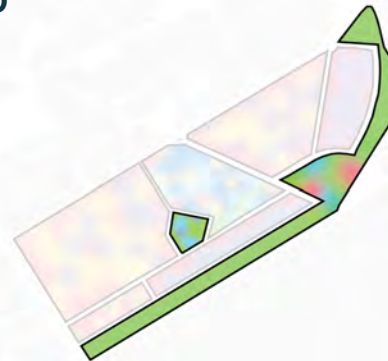
Zone B is designed for higher manufacturing activity, consisting mostly of light and medium industrial production. The activities yield higher disturbance with noise, pollution and traffic levels, thus residential use is not permitted. Clustered mixes of light and medium industry, along with commercially-fronted streets, allow growth for businesses.

ZONE C



Zone C prioritizes cultural and institutional uses, such as training facilities and community spaces. It also allows residential and commercial activities, with green spaces included. Industrial manufacturing is not permitted, although office and low impact R+D is permitted by right.

ZONE D



Zone D is the green heart and lung of Regio Parco. It aims to be the community breathing space, complete with public recreation and open space. Cultural, institutional, and commercial amenities are also permitted, such as open markets and educational centers. Zone D also acts to mitigate pollution and disturbance from nearby manufacturing activities.

Zoning Categories

RESIDENTIAL

pertains to permanent single and multi family units. Residential areas may include open spaces.

COMMERCIAL RETAIL

pertains to commercial shops, restaurants, and services that serve residents, workers, and visitors.

COMMERCIAL OFFICE

pertains to commercial office spaces. The zoning scheme considers the fluidity of research activities, thus always permitting low impact R+D alongside commercial office use.

LOW IMPACT RESEARCH & DEVELOPMENT (LOW IMPACT R+D)

pertains to R+D activities that do not produce offensive external impacts such as noise, pollution, or vibration. This activity naturally overlaps with office use, thus permitted as a compatible activity.

HIGH IMPACT RESEARCH & DEVELOPMENT (HIGH IMPACT R+D)

pertains to R+D activities that would be safe, but not ideal, for neighboring tenants. This includes higher levels of noise, pollution, or vibration. This is sometimes permitted in commercial office use.

LIGHT INDUSTRY

pertains to manufacturing activities that do not produce offensive external impacts such as noise, pollution, or vibration. Examples include wearable technology, artisanal food, and VR / AR.

MEDIUM INDUSTRY

pertains to manufacturing activities that would be safe, but not ideal, for neighboring tenants. This includes higher levels of noise, pollution, or vibration. Examples include coffee roasters, breweries, agricultural technology, cut stone products, low energy electronic systems, and distribution.

CULTURAL

pertains to social, religious, and educational activities such as music performances and events.

INSTITUTIONAL

pertains to social, religious, and educational institutions such as churches and clubs.

OUTDOOR RECREATION

pertains to sports facilities, jogging paths, and exercise areas. Pocket parks, open green spaces, and neighborhood playgrounds may apply depending on scale and activity.



▲ Residential housing exists just beyond the site, and can be better connected to the Regio Parco site.



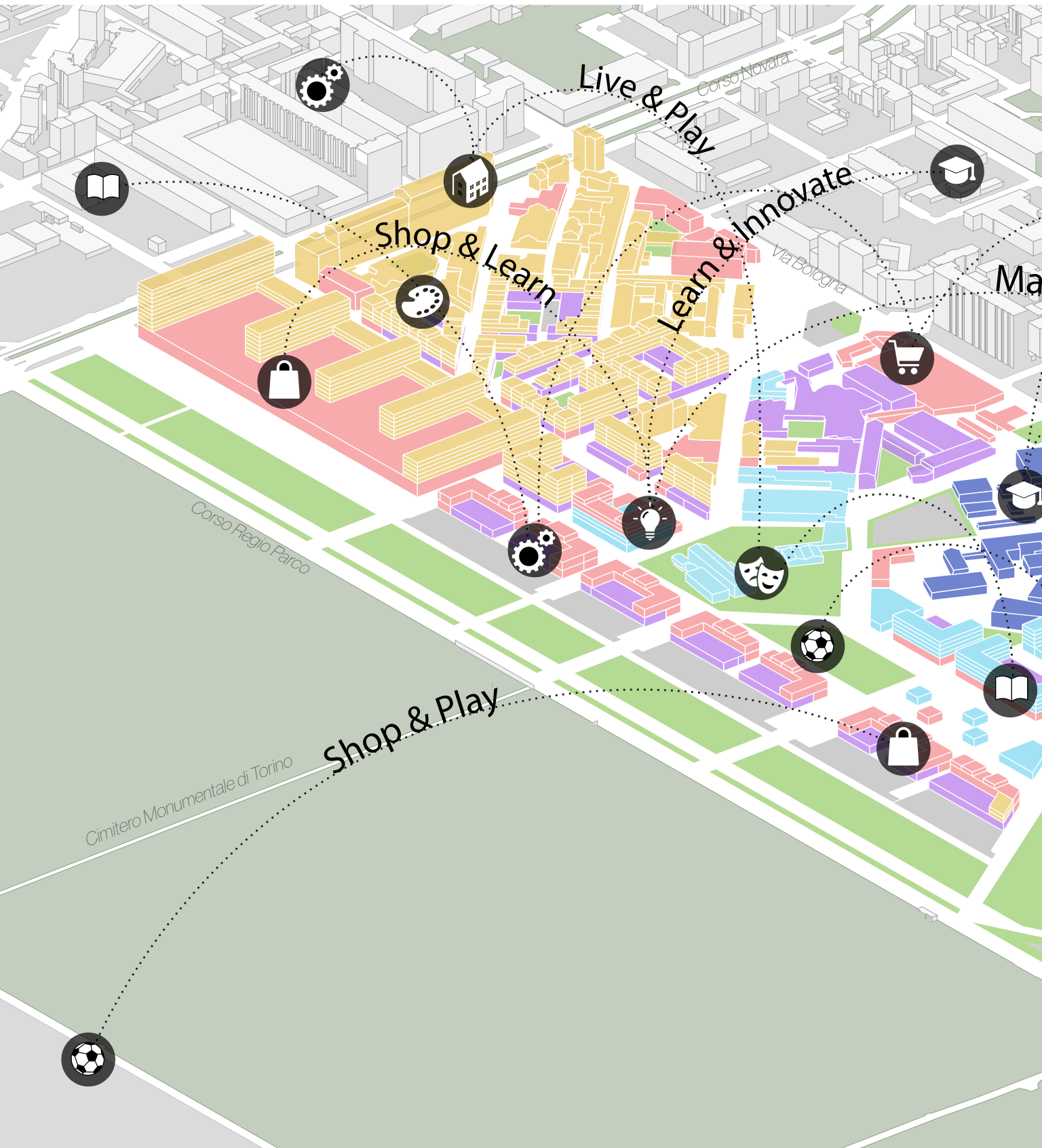
▲ Creative cultural spaces offering pop-up shops attract locals and tourists alike.



▲ *A small flower shop on site complements the nearby cemetery.*

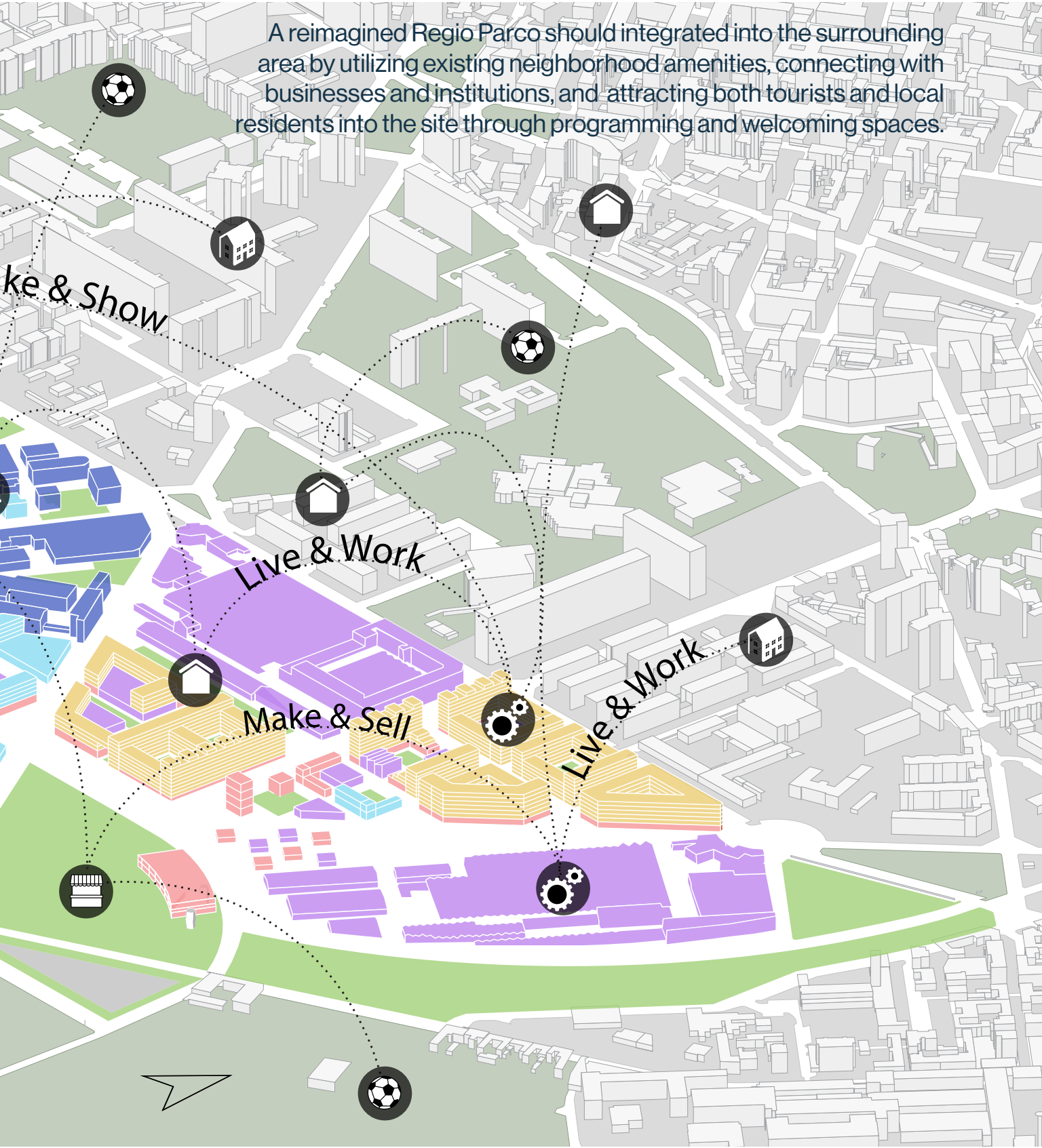


▲ *Medium manufacturing, such as this cut stone and stone product business, already exists on site.*



NEIGHBORHOOD CONTEXT

A reimagined Regio Parco should be integrated into the surrounding area by utilizing existing neighborhood amenities, connecting with businesses and institutions, and attracting both tourists and local residents into the site through programming and welcoming spaces.



Regio Parco: A Testbed for Torino

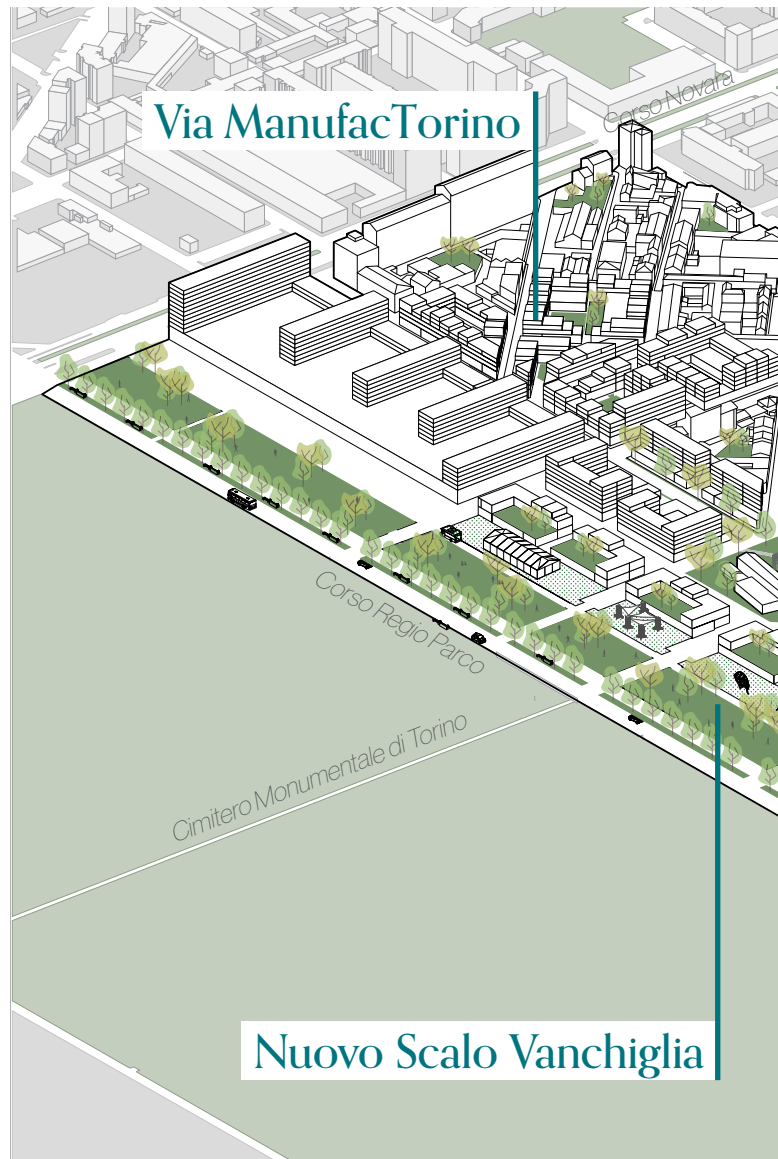
With the proposed Pixel Zoning approach, there is flexibility with land use configurations. Adaptable building structures further support different scales of industry, with the ability to grow or shrink as needed.

New development around the existing assets can differ in configuration, building size, and land use proportions to best serve the needs of the space.

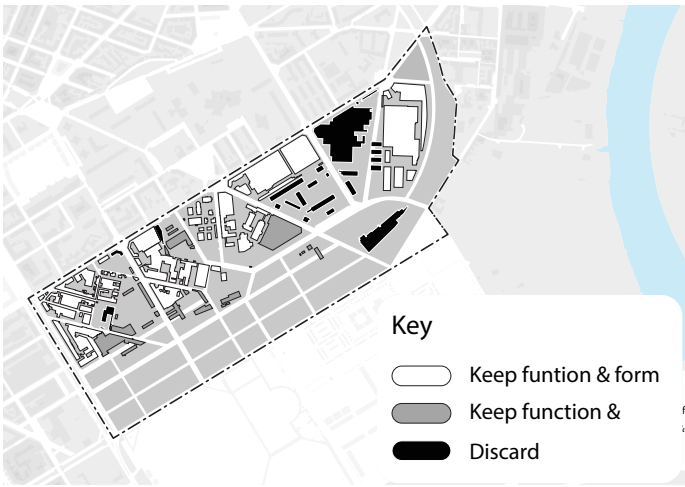
For illustrative purposes, the below four areas are targeted for different scenarios of new development:

1. Via ManufacTorino
2. Nuovo Scalo Vanchiglia
3. Builder's Piazza
4. Maker's Commune

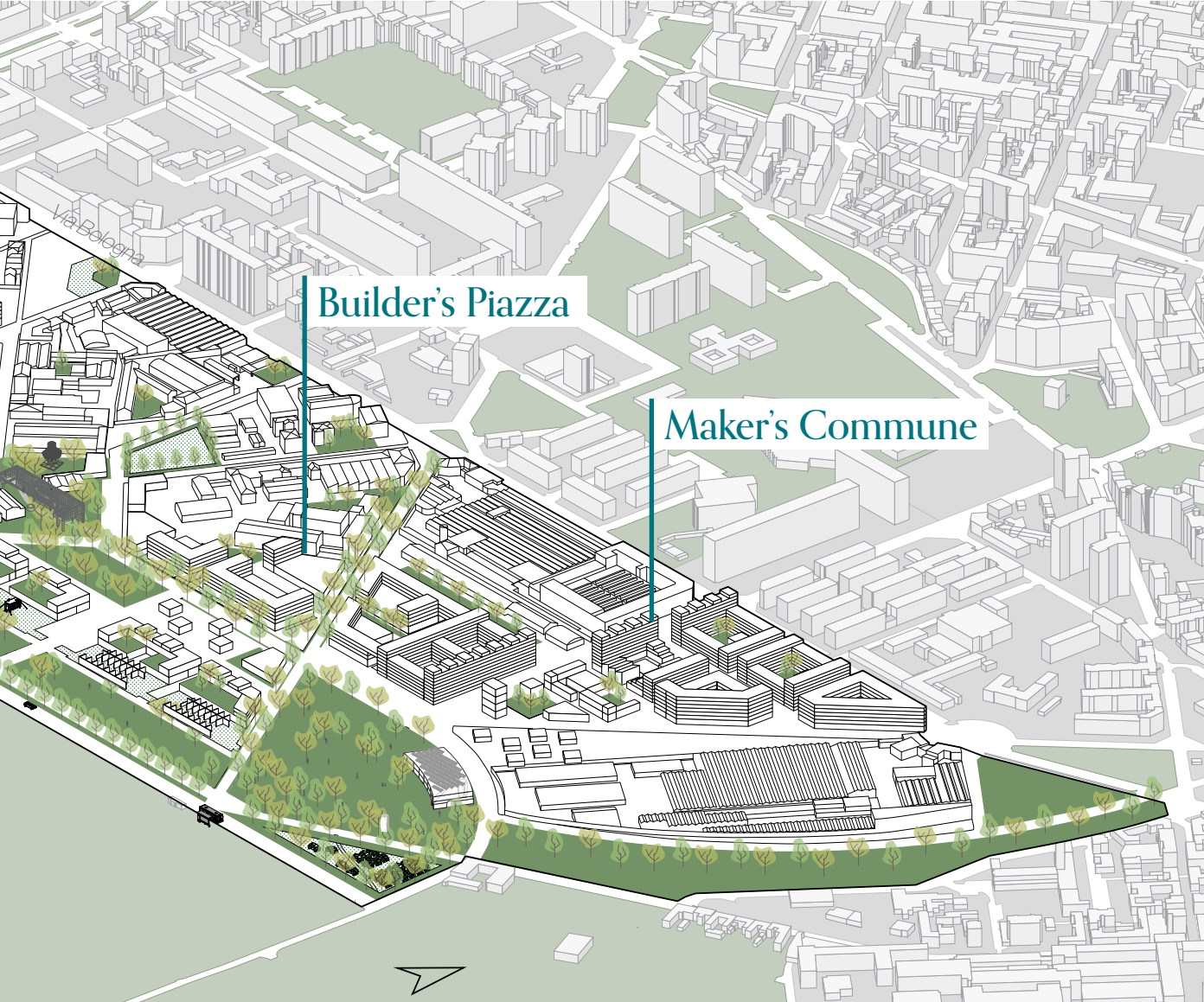
In the following pages, two scenarios of site planning are offered as examples of how different configurations could be implemented within the same zoning plan. In practice, area design samples are given as a kit-of-parts for adjustable mixing and matching based on Torino's evolving needs.



Regio Parco currently houses many existing assets which serve the community, including multi-family residential units, small and medium scale manufacturing, an arts and cultural center, and a secondary school. New development should aim to maintain these entities and fold them into the proposed fabric of the site.



▲ Buildings recommended to demolish or keep





Regio Parco Sample Scenario 1

Total Site Area: 627,771.69 sqm

- Residential: 34%
- Industrial: 26%
- Commercial: 21%
- Cultural: 19%

In this first sample scenario of Regio Parco redevelopment, the mixed-use site prioritizes new residential units, with a balance of industry, commerce, and cultural spaces. Lining the southern edge are manufacturing sites with smaller footprints that encourage small-scale manufacturing entities. With more residents integrated in the site, there is increased need for living amenities such as shops, recreation space, leisure sites, and transit options.

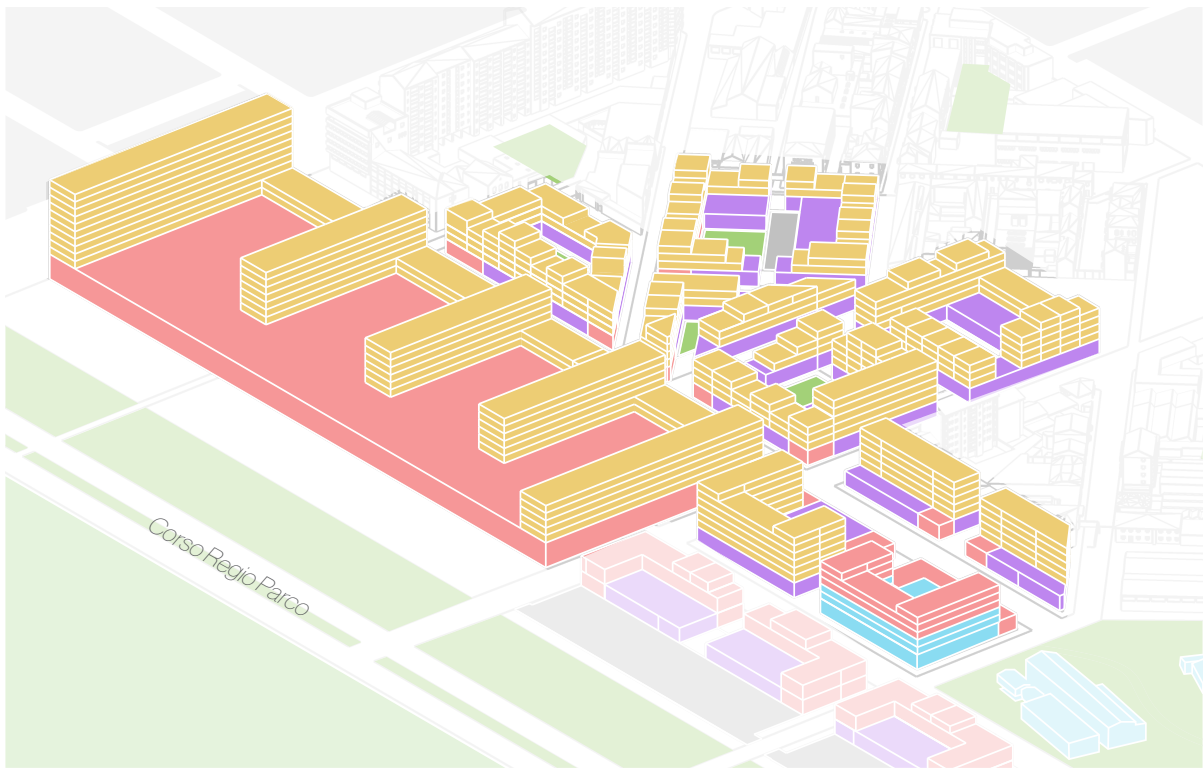


Regio Parco Sample Scenario 2

Total Site Area: 627,771.69 sqm

- Residential: 13%
- Industrial: 46%
- Commercial: 36%
- Cultural: 5%

In this second sample scenario of Regio Parco development, the mixed-use site prioritizes industry and commerce. Industrial buildings in this design tend to have larger footprints, allowing for medium-scale manufacturing that demands more space and maneuvering. Residential use is still incorporated, mostly on upper floors of buildings, which allows a strong community population within the site and supports local commercial sites and cultural spaces.

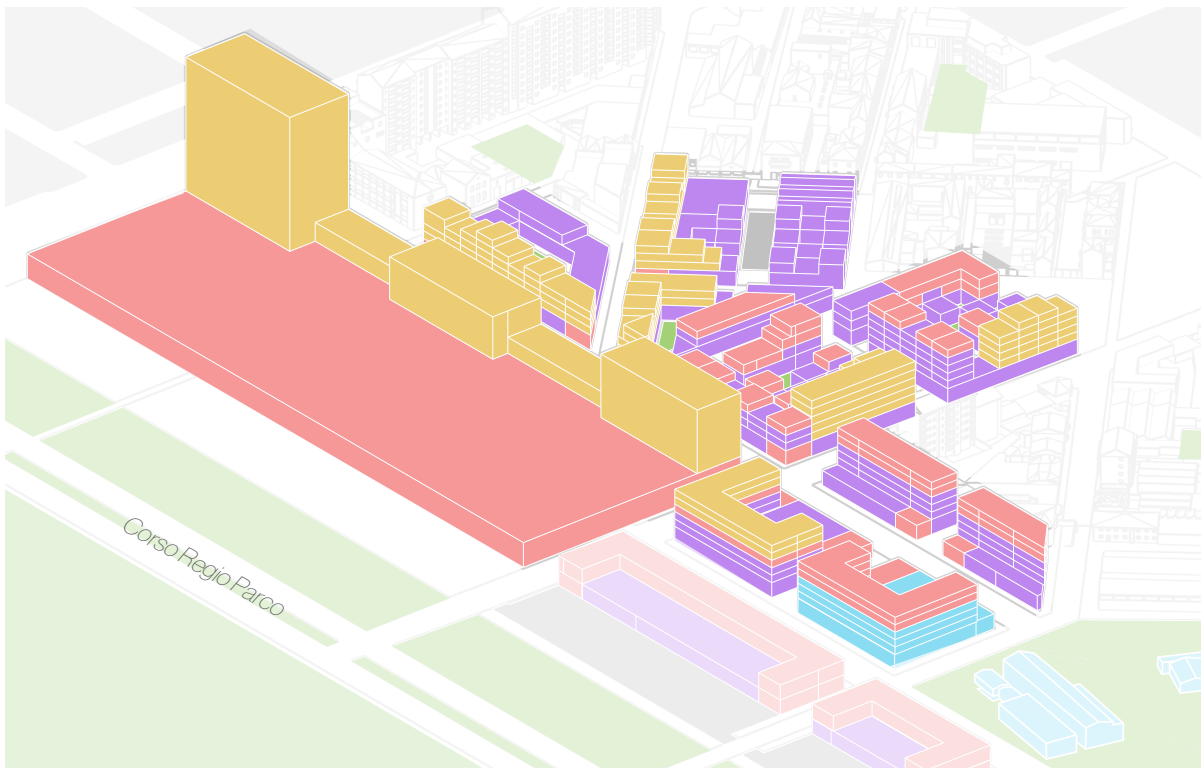


Iteration 1: Residential Priority Via ManufacTorino

Total GFA: 73,534 sqm

- Residential: 61%
- Industrial: 25%
- Commercial: 9%
- Cultural: 5%

**Proposed Mall not included in calculations.*



Iteration 2: Small Scale Industrial Priority Via ManufacTorino

Total GFA: 73,534 sqm

- Residential: 20%
- Industrial: 44%
- Commercial: 31%
- Cultural: 5%

**Proposed Mall not included in calculations.*



Iteration 1: Small Scale Industrial Priority Nuovo Scala Vanchiglia

Total GFA: 26,214 sqm

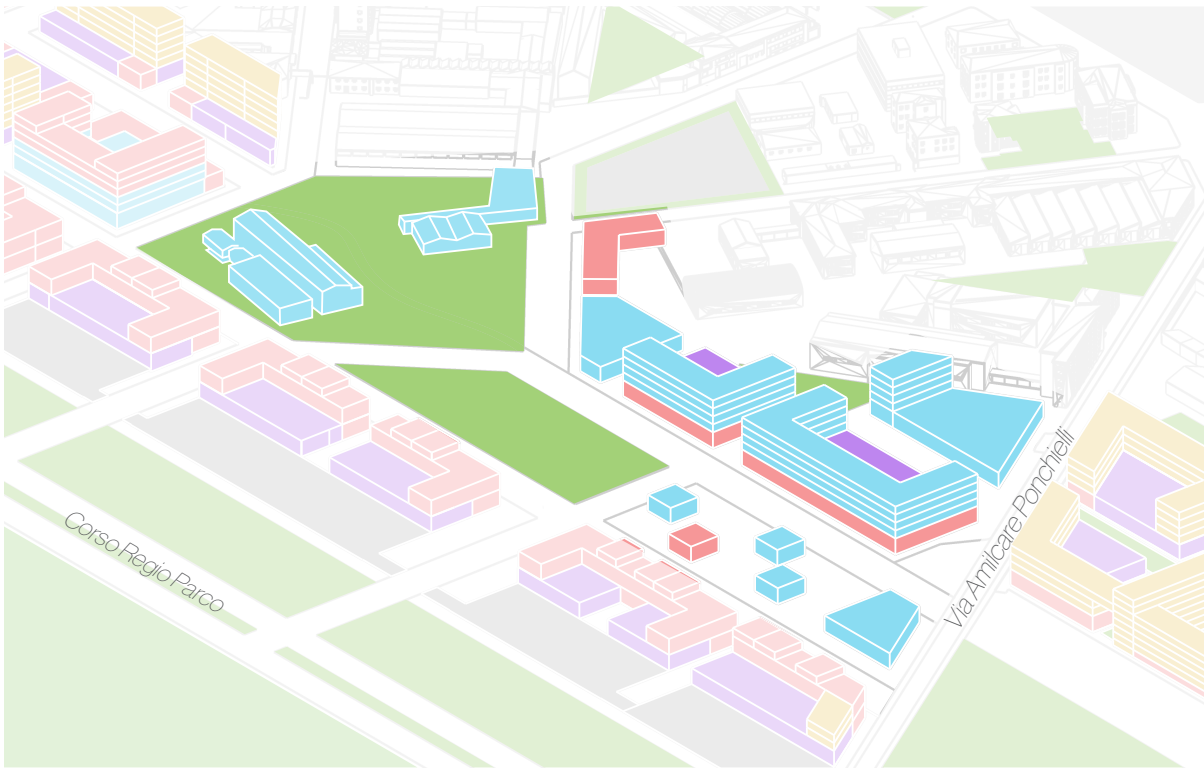
- Residential: 6%
- Industrial: 58%
- Commercial: 36%
- Cultural: n/a



Iteration 2: Medium Scale Industrial Priority Nuovo Scala Vanchiglia

Total GFA: 29,707 sqm

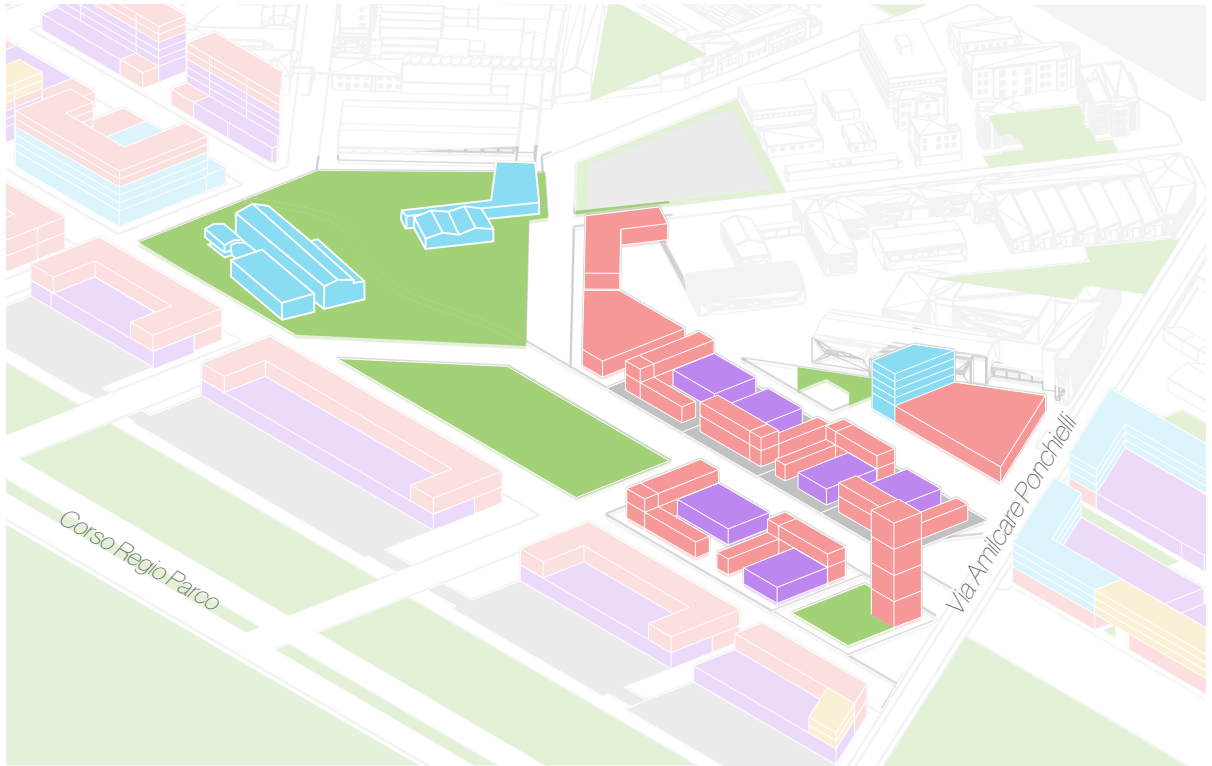
- Residential: 5%
- Industrial: 58%
- Commercial: 37%
- Cultural: n/a



Iteration 1: Cultural Priority Builder's Piazza

Total GFA: 25,434 sqm

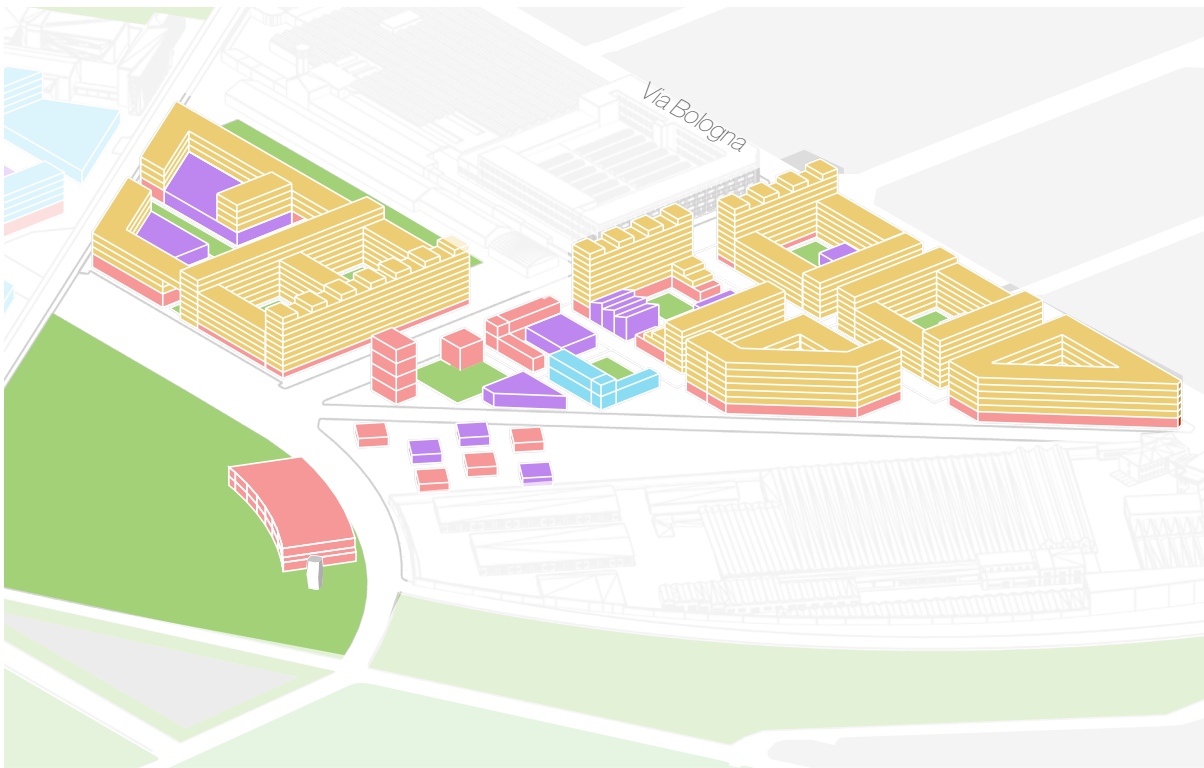
- Residential: n/a
- Industrial: 11%
- Commercial: 23%
- Cultural: 66%



Iteration 2: Commercial Priority Builder's Piazza

Total GFA: 25,434 sqm

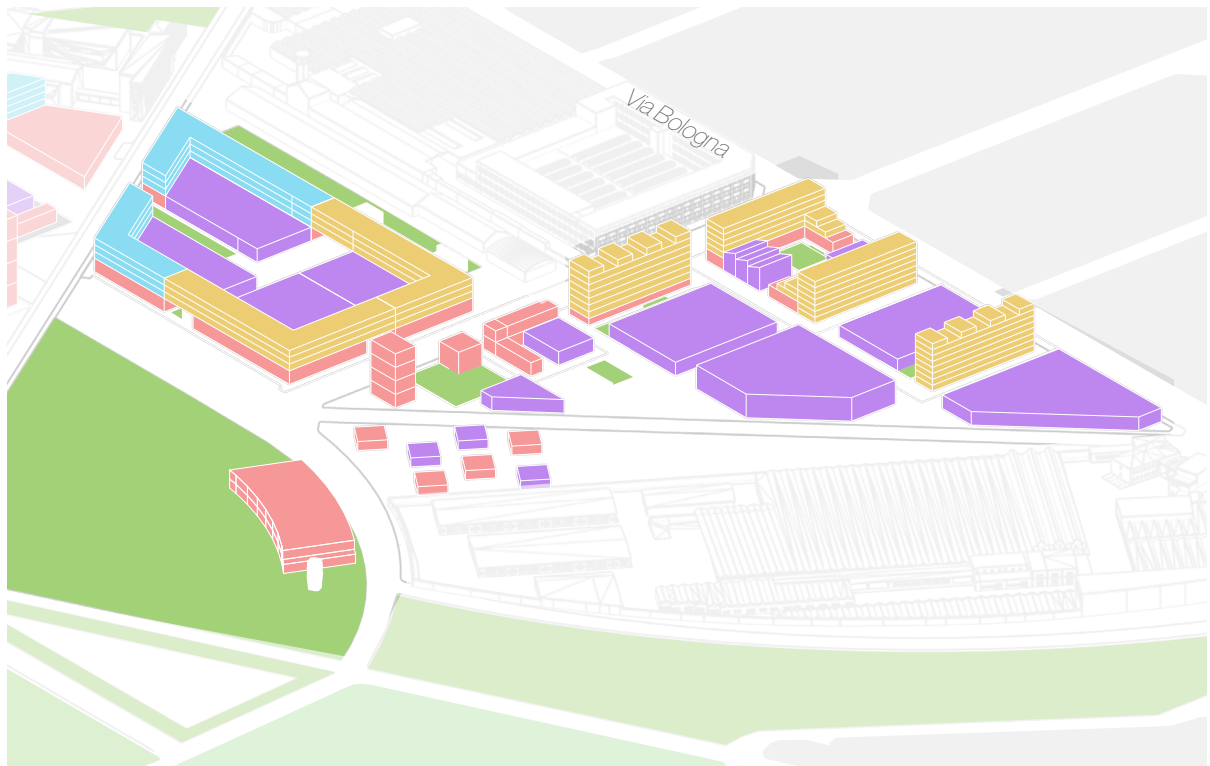
- Residential: n/a
- Industrial: 30%
- Commercial: 65%
- Cultural: 5%



Iteration 1: Residential Priority Maker's Commune

Total GFA: 103,568 sqm

- Residential: 69%
- Industrial: 12%
- Commercial: 16%
- Cultural: 4%



Iteration 2: Industrial Priority Maker's Commune

Total GFA: 103,568 sqm

- Residential: 27%
- Industrial: 52%
- Commercial: 12%
- Cultural: 8%

Mobility

Introduction

Streets play a vital role in the proposed site design to move people and goods, act as public spaces and showcases, and offer green corridors for comfortable walking and biking.

The automobile is central to Torino's industrial past, and today the city's streets pay tribute to this legacy. This section offers a new vision for the streets of Regio Parco and for the neighborhood's new industrial era.

In this newly imagined industrial district, pedestrians are the protagonists, street design allows for safe and direct bicycle use, and public transit gains dedicated corridors. Private car traffic is restricted to certain streets, with the exception of local drop-off and delivery. Truck traffic is routed to dedicated freight service roads to ensure support for commerce and industry, and avoid dangerous conflicts with pedestrians and cyclists.

Wide sidewalks and bike lanes encourage people to activate human-scale and walking-paced streets. Narrow car and bus lanes slow streets to prioritize safety. Frequent building entrances and displays break-up industrial monotony and the neighborhood's public streets become a showcase for innovation and commercial activity.

Green corridors represent the new clean character of the industrial area and offer breathing room to locals. They encourage active mobility on bicycles, e-bikes, and scooters, and create space for emerging mobility options like small electric vehicles. Variable street uses on weekends and in the evenings offer additional opportunities for public promenade and gathering while keeping the streets activated and safe.

The streets of the site act as a test bed for new technologies developed by innovative neighborhood industries. Regio Parco, thus, becomes the space for iterating ideas and strategies towards a more sustainable and inclusive Torino. New autonomous vehicles, energy saving paving materials, smart traffic lights and signaling can all be tested in the area.

Goals



SAFE



SUSTAINABLE



FLEXIBLE



SMART



HEALTHY



COMFORTABLE



ACCESSIBLE

Targets

- Active streets
- Lighting
- Clear signage
- Regulated speeds

- Abundance of street trees
- Permeable pavings
- Durable and low maintenance materials
- Energy saving lights

- Corridors easily close for events or to control vehicle flow
- Streets act as testbeds for new technologies

- Intelligent signals and traffic cameras
- Smart parking meters
- Transport system with integrated app
- Outlets in bus stations and benches

- Wide bicycle lanes and sidewalks that encourage biking and walking

- Shaded sidewalks
- Street seating and furniture
- Smooth slip-resistant paving

- Access ramps at every corner
- Buses with wheelchair accomodation
- Signage for the visually impaired



The Torino tramway network is a vital part of the urban transit system.

Guiding Principles

NEW INTEGRATED STREET PLAN

The proposed site design contemplates a new street hierarchy with lane distribution. A new design toolkit and paving palette proposes smart and energy saving materials, lighting, traffic lights, signage, and comfortable street furniture, allowing, among other things, for streets to be accessible for all abilities. Finally, the new plan pushes for streets to work toward Regio Parco's sustainability goals.

For these goals to be achieved, a plan must be approved at the city level. Any changes should adhere to the new mobility criteria. Implementation can happen in phases, adapting to developers' requirements to build certain areas before others.

FLEXIBILITY

The new integrated street plan's regulations must be flexible enough to allow for testing new technologies and ideas as they arise: new transit systems, new paving materials, reallocating space from cars to bikes, etc. Some streets intentionally lack rigidity and are designed for experimentation purposes. Via Mottalciata and the new proposed road Via Verde can be used for testing potential technologies.

SOCIAL DISTANCING

The social distancing requirements derived from the COVID-19 crisis, require that cities adapt to new needs. Milano and Paris are examples of cities that are prioritizing the implementation of bike circuits with wider

lanes throughout the city to promote cycling instead of driving for social distant mobility. These changes align with urban sustainability goals and should sustain beyond the crisis. The new integrated street plan already takes into account the implementation of wider sidewalks. Also, transit and bike lanes are shared on many streets, which allows for more space for cycles, especially when public transportation is limited.

ACTIVATED STREETS

The streets will be conduits of activity. Wide sidewalks, street furniture and bike lanes will encourage walking, bicycling and small electric vehicle use. Public facades with street level shops and showcases will offer pedestrians frequent stimuli. Greenery, lighting, public art, and seating will invite people to stroll or gather. Variable uses will activate the street with events and public gatherings at off-peak times, adding the new Regio Parco district to people's mental maps.

PUBLIC TRANSIT PRIORITY

Green corridors create ample space for public transportation and encourage people to leave cars at home when they come to the neighborhood. The new district offers a testbed for innovative public transportation technology. The area's slow streets and multiple points of interest offer an opportunity to build partnerships with autonomous vehicle producers and create closed-loop local shuttles, building on Torino's legacy of automobile manufacturing.

INTELLIGENT FREIGHT

The concentration of industry, the producer's marketplace, and local industrial networks all work to optimize freight, supply lines and resource sharing, reducing the need for freight trucking. A dedicated service road provides industrial lots with direct access to truck loading bays. Secondary streets offer conduits for goods to permeate the rest of Torino in smaller delivery trucks, cargo bikes, and carts.

INNOVATION LABORATORY

Drawing on Torino's legacy of innovation and the strength of its local technical universities, the new Regio Parco will be a lab for innovations in mobility and street design. New street types offer palettes for experimentation with emerging technologically-integrated materials, pavings, and sensors. Examples include solar roadways, kinetic energy capture paving, solar powered lighting, interactive on-street kiosks, and real-time sensors to monitor pedestrian, bike and vehicle traffic flows and parking.

Policy Recommendations

Regio Parco will act as a testbed to build the Torino of the future. The following policy recommendations can be implemented in order to create pedestrian oriented streets which foster outdoor activities, safety, accessibility, and sustainability. These policies must be flexibly adapted to accommodate new technologies and future needs.

FREIGHT ROUTES

Trucks over 15m long must operate on designated freight routes. Deliveries off freight routes should be performed with smaller trucks, cars, and electric cargo bikes.

OFF-HOUR DELIVERY

Delivery times outside freight routes are restricted to early morning, late evening, and overnight hours. Peak hour deliveries require special permits and may only circulate through main and secondary roads, unless these are being used for special activities.

NAKED STREETS

Streets should feature as little signage as possible to minimize distractions and promote flexibility. Paving materiality, texture, color and grade changes are used to indicate road user priority and movement.

HUMAN SPEED

Traffic signal timing and signage clearly communicates flow priorities and speed limits, encouraging slower driving off of main streets.

Street Categories

Proposed Street Characters

The four proposed categories for main and secondary streets, green corridors and passages offer a framework for the character and pace of the site's existing and proposed roads. Heavier traffic moves along main roads while pedestrians and bicycle riders have freedom to traverse passages and green corridors at their leisure.

| | Primary activities | Street Users | Speed (km/h) | Land Use | Flow priorities | Elements |
|---------------------------|--|---|--------------|---|---|--|
| Truck Service Road | Freight trucking | Freight Trucks Pedestrians | < 40 | Manufacturing Commercial | Truck flow prioritized. Traffic lights for pedestrian crosswalks. | Exclusive truck lanes. 2 lanes, double direction. Sidewalks on one side. Direct lot access for trucks. |
| Main Street | Public Transit Cycling Socializing Freight trucking | Buses Cars Bike Delivery Trucks Pedestrians | 30 - 40 | Commercial Residential | Transit flow prioritized. Traffic lights for pedestrian crosswalks. | 2 lanes, double direction. 2 bike lanes, double direction. Wide sidewalks on both sides. |
| Secondary Street | Walking Cycling Socializing Vehicular circulation | Pedestrians Cyclists Buses Cars Smaller delivery trucks | 20 - 30 | Commercial Residential Manufacturing Cultural Institutional | Traffic calmed. Pedestrians & vehicles are prioritized. | 2 lanes with double direction. 2 bike lanes double direction. Wide sidewalks on both sides. Parallel parking. Pedestrian amenities. |
| Green Corridor | Walking Socializing Gathering Shopping Transit circulation | Pedestrians Cyclists Buses Cars (local) | <20 | Commercial Residential Manufacturing Cultural Institutional | Pedestrian first priority. Bikes second priority. Buses & bikes share lanes, bikes have the priority. | 1 vehicular lane with one direction (new). 2 lanes with double direction (existing). Wide sidewalks on both sides. Parallel parking. Pedestrian amenities. |
| Passage | Walking Socializing Gathering Shopping Recreation | Pedestrians Cyclists Cars (local) | <15 | Commercial Residential Manufacturing | Pedestrian first priority. | 2 bike lanes. Wide sidewalks. Parallel parking. Pedestrian amenities. |

Proposed Street Grid



Proposed Street Categories



Travel by Mode

Circulation and Transit Routes

The mobility proposal includes four circulation modes that are relevant to activate the site. The existing transit and vehicular modes have been modified to improve mobility and there are two new modal foci, truck and bike/scooter circulation, proposed to increase flow, accessibility and connections throughout the site.

Proposed Circulation Routes

PUBLIC TRANSIT

The proposed transit circulation follows the existing routes that surround the site. There is a slight modification of bus line 2 which is extended to reach the heart of the site where cultural, institutional, and recreation areas are located.

FREIGHT TRUCKS

The proposal includes a new truck service road dedicated to freight services to support commerce and manufacturing operations and logistics. Large freight trucks can also circulate in Corso Regio Parco but are not allowed to circulate in Via Bologna and Corso Novara.

VEHICLES

Vehicular circulation pertains to cars, vans, motorcycles, and small delivery trucks. General vehicle circulation is not allowed in green corridors and passages, only local vehicles can circulate through the entire site to access the residential and commercial properties.

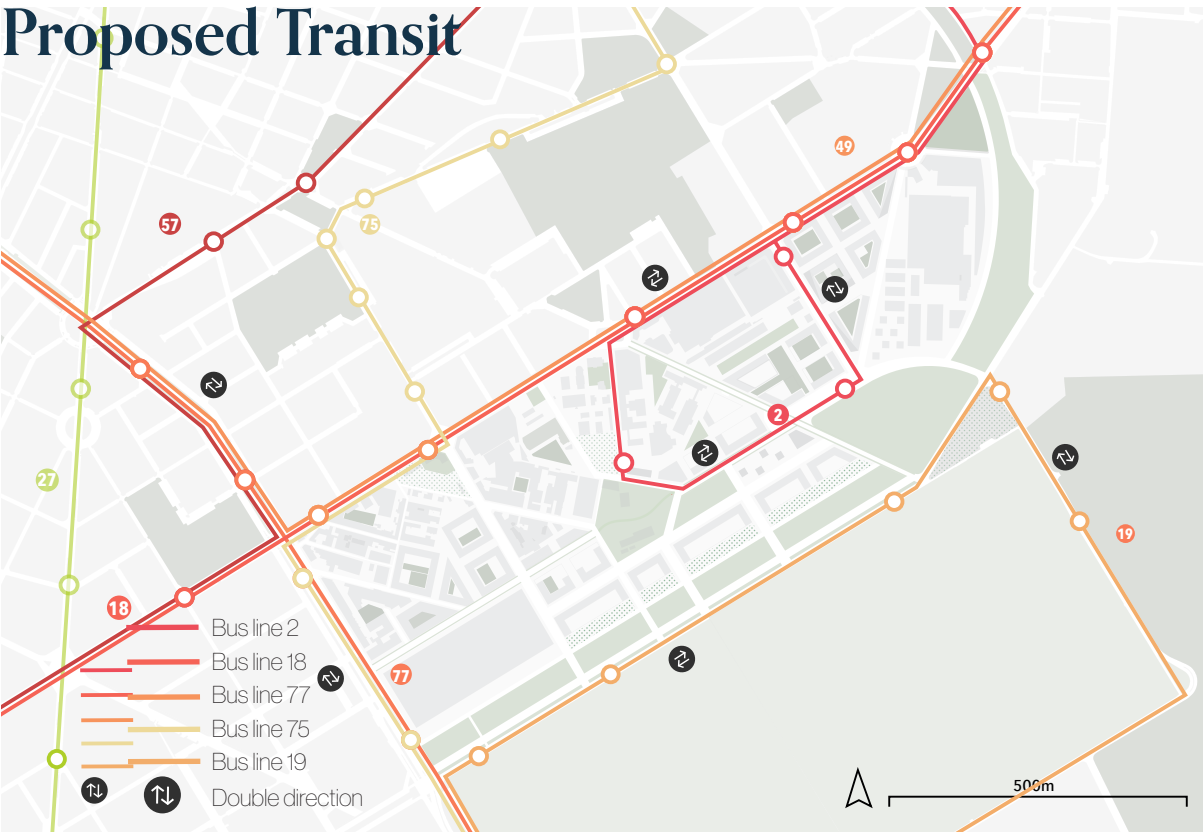
BIKES AND SCOOTERS

Bike and scooter circulation is new to the entire site and will promote biking. Bikes and scooters can circulate all over the site. The priority of the bike/scooter circulation depends on the category of the street.

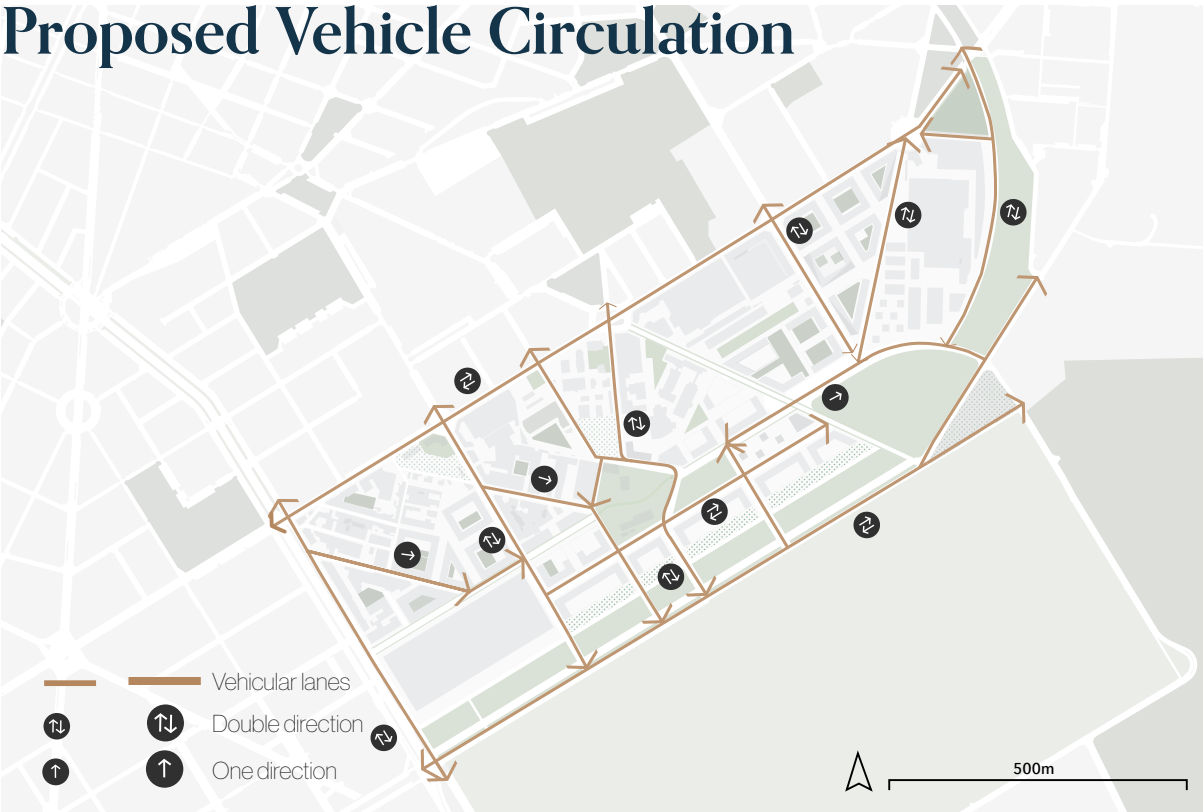


Despite public transit options, private car usage is still a major method of getting around in Torino.

Proposed Transit



Proposed Vehicle Circulation



Proposed Truck Circulation

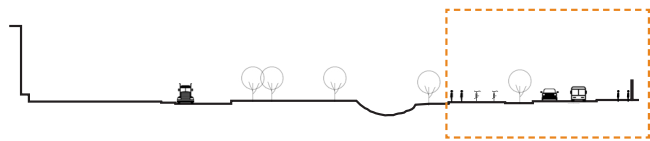
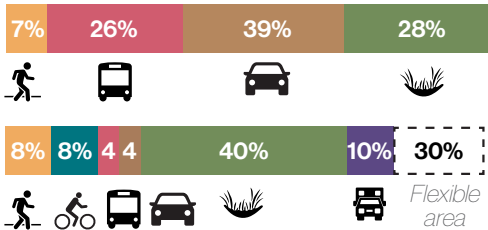


Proposed Bike/Scooter Circulation



Corso Regio Parco

Main Street

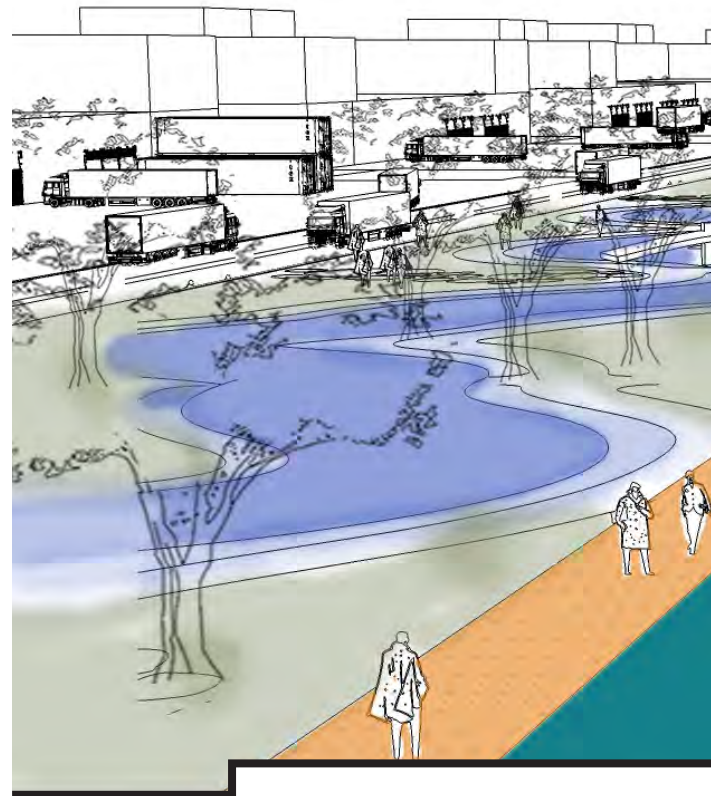


PROPOSED

Torino's regulations state that cemeteries must have a 100m buffer area where no permanent activities can take place. The Corso Regio Parco then widens from its existing 17m width to a section of 100m, by expanding into the old railway area.

The proposal takes advantage of this space to include 35m to expand the former canal bed and let it flow freely, creating open space areas on its banks (see open space section for more detail).

The street is separated by the canal into a main street and a truck service route. The main street next to the cemetery includes wide sidewalks, shared lanes for transit and cars, wide bike lanes, and keeps the existing tree line in place. Next to the industrial area, a new truck service route is implemented with a 30m flexible area which allows for freight handling during business days and for other activities like industrial fairs, food fairs, and concerts during evenings and weekends.



3.5 m



6 m



EXISTING CONDITIONS



4.5m



4.5m



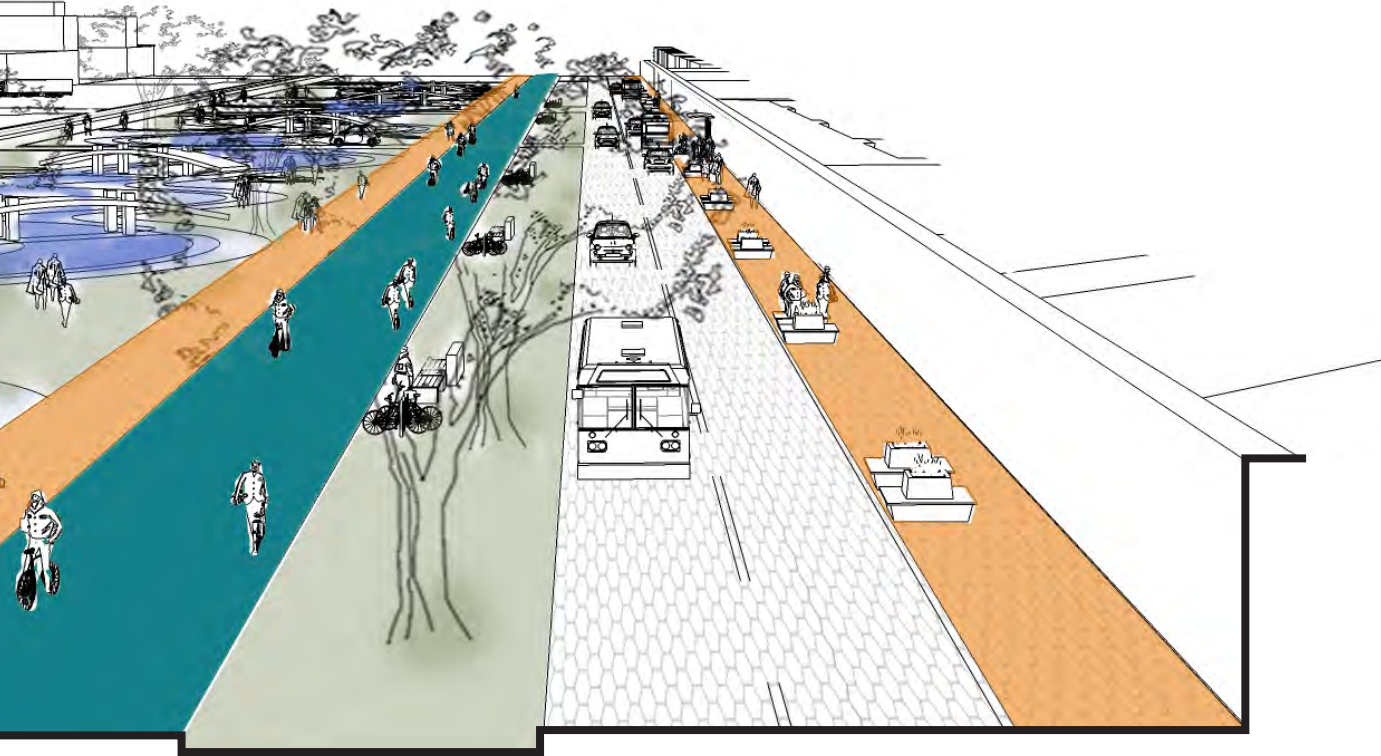
4.7m



2.3m



1.3m



5.5m

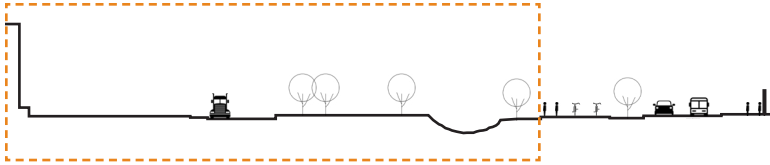


4.5m

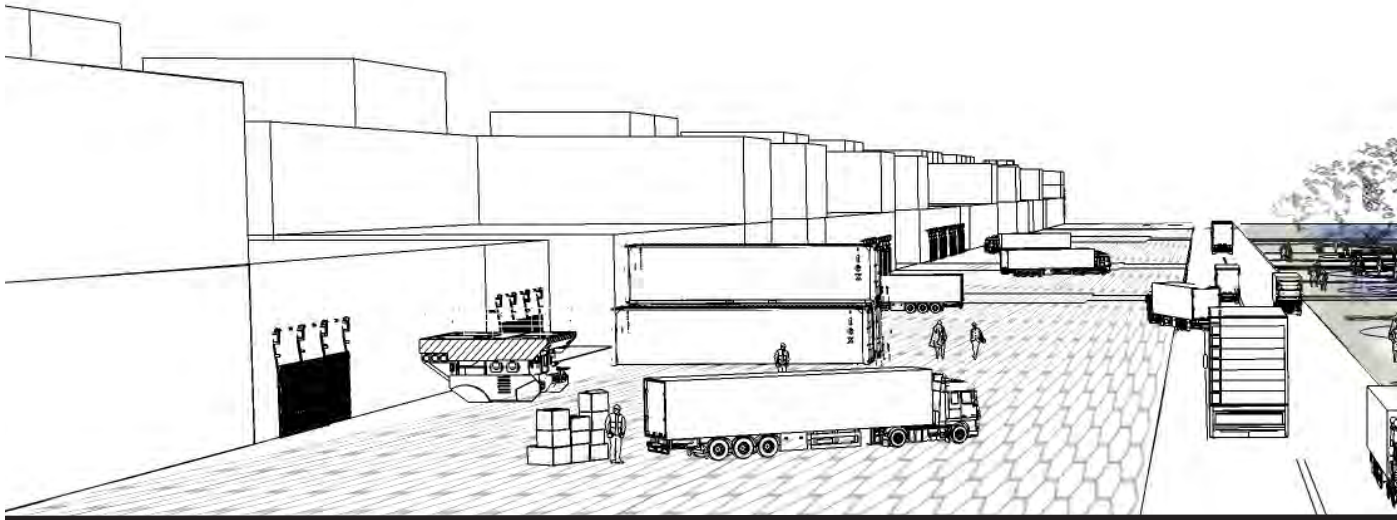


3.5m





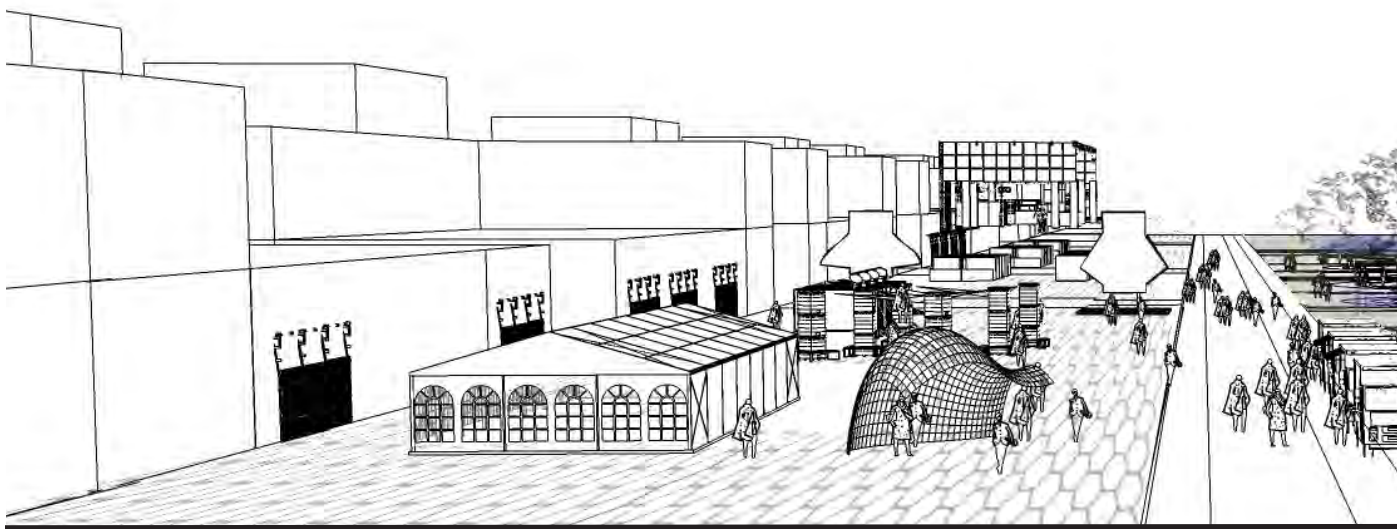
REGIO PARCO DURING BUSINESSES HOURS

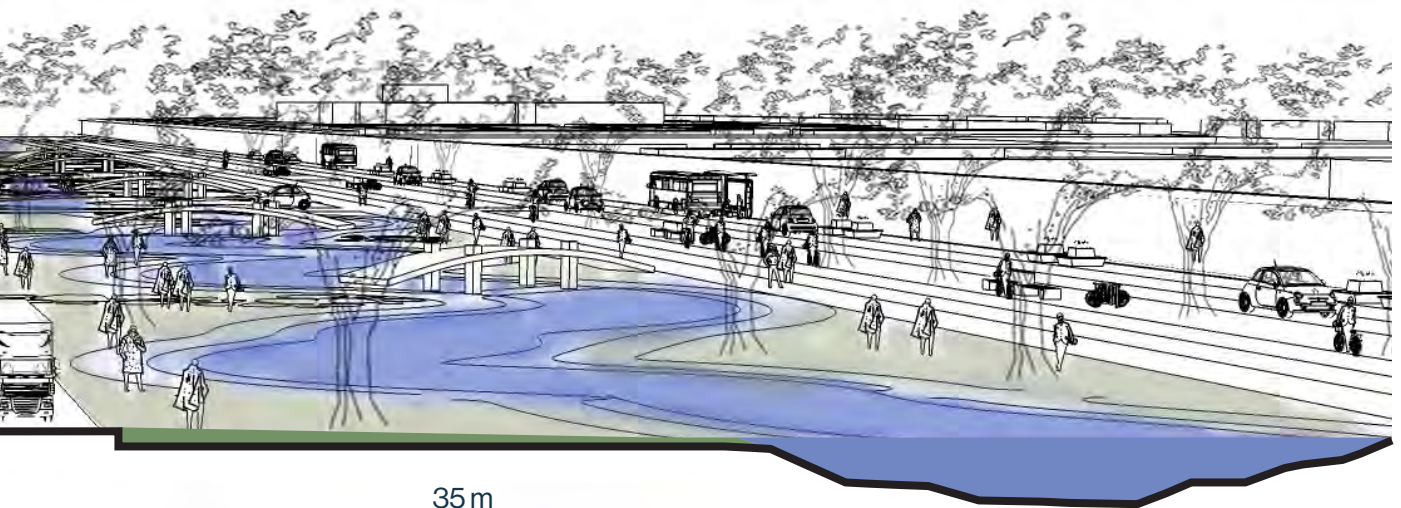


30 m
Flexible area

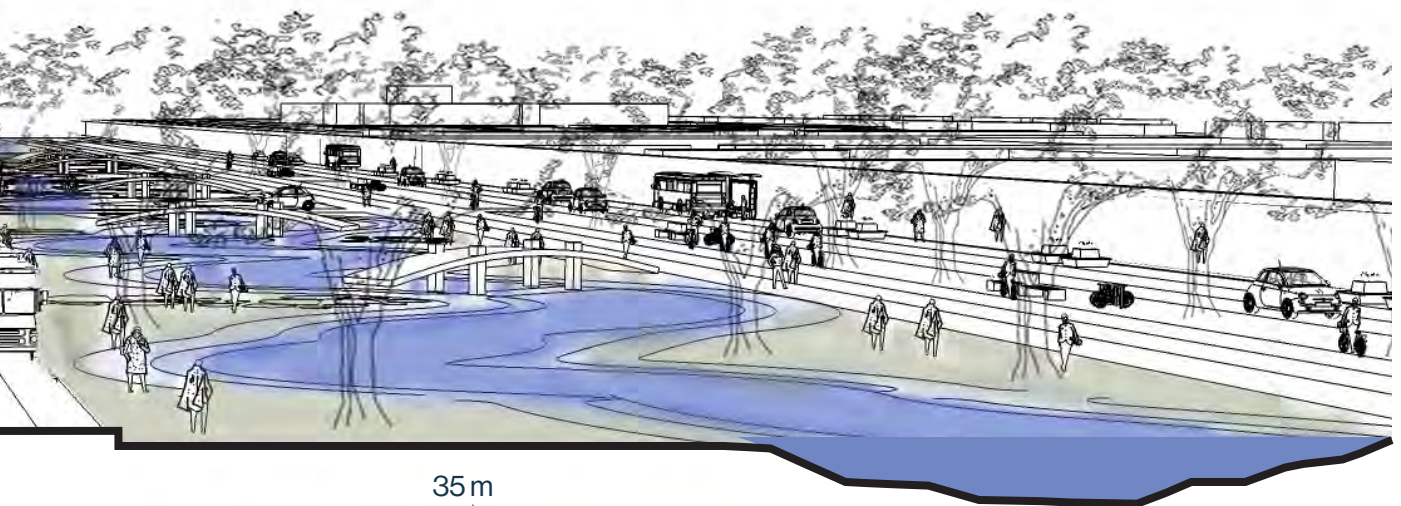
7.5 m


REGIO PARCO DURING WEEKENDS AND EVENINGS





35 m

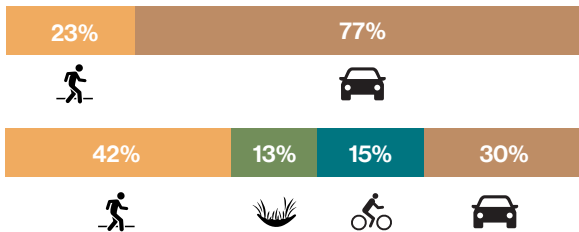


35 m



Via Giovanni

Secondary Street



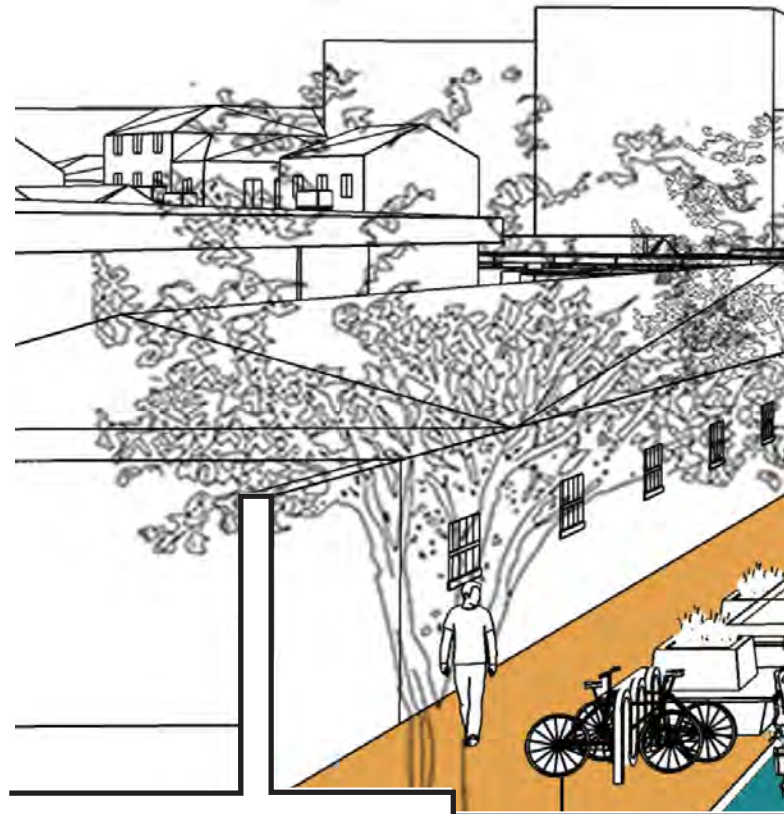
Via Giovanni is a representative secondary street. Walking, cycling, socializing, and vehicular circulation are the main activities.

It has two bi-directional central lanes for vehicular circulation. Next to each lane, there is a bike lane for local circulation. Scooters are also allowed to circulate in these lanes.

The sidewalk width varies along the street. When it narrows, it includes parallel parking for locals, whereas at wider points, people can use the streets for pleasure.

Sidewalks are made more comfortable for pedestrians with furniture, amenities, and two tree lines that provide shade to both sides. The width of the secondary street also allows pedestrians to practice social distancing.

Vehicular and bike lanes have the same textured paving to encourage slow transit.



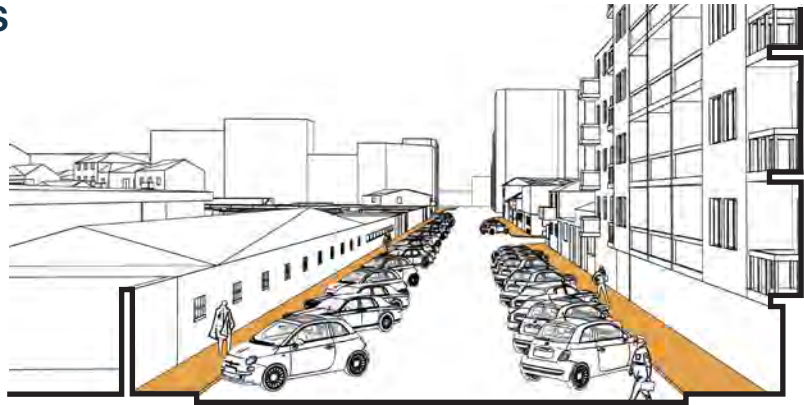
5.4 m



1.5 m



EXISTING CONDITIONS



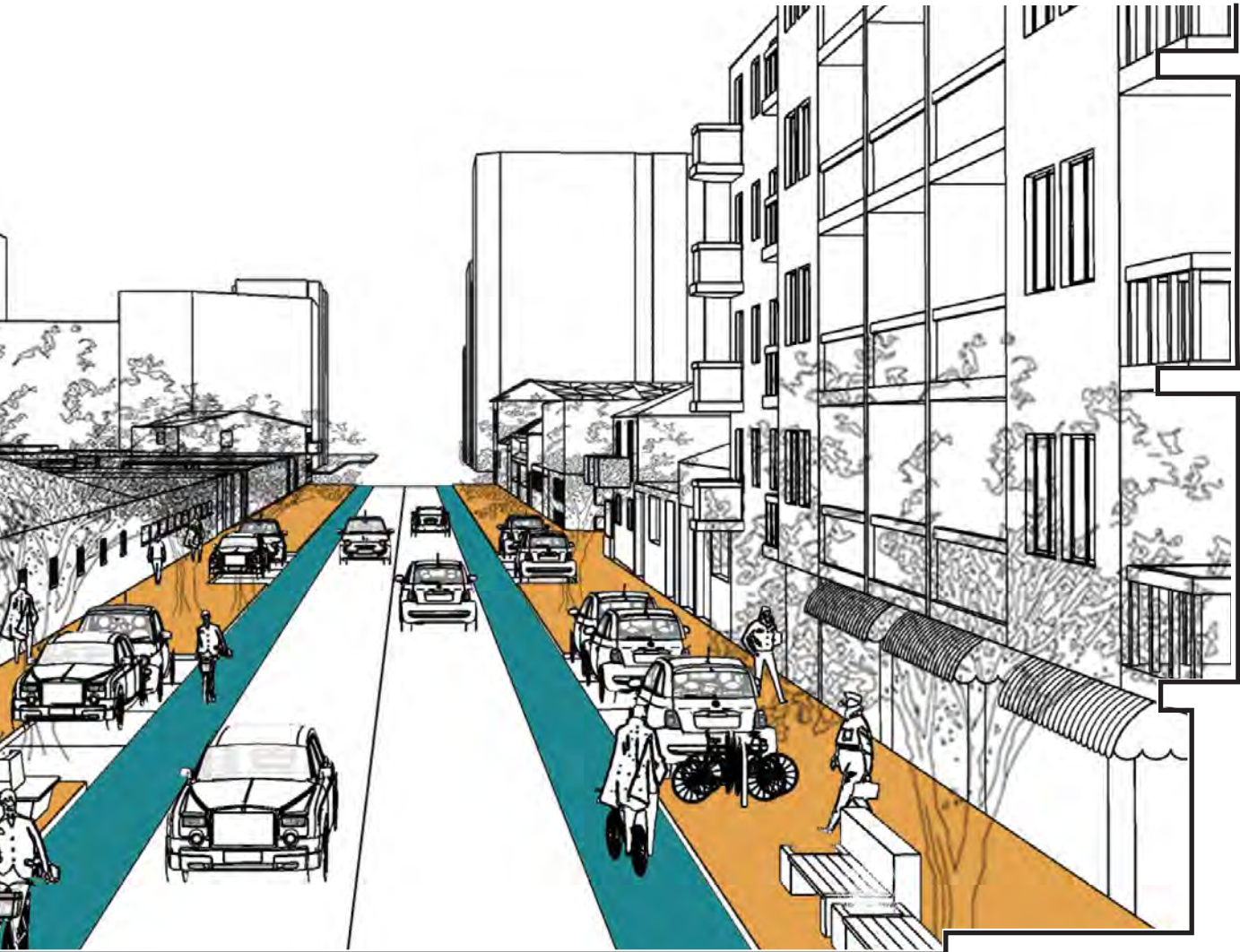
1.8 m



15.4 m



2.6 m



3.0 m



3.0 m



1.5 m

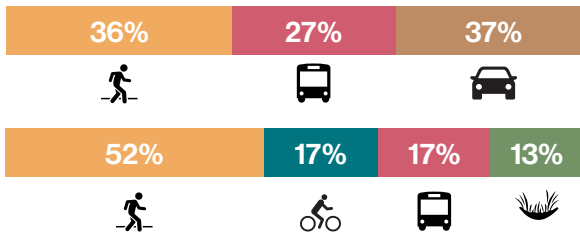


5.4 m



Via Ponchielli

Green Corridor



Via Ponchielli is a green connector between the green areas in Barriera di Milano and Parco Colleta. The central lanes have a shared use between transit (only bus line 2 runs through this street) and bicycles. The space between the sidewalks and the bike/transit lanes has a tree line which casts its shadows on both sides, increasing comfort and encouraging people to use the street for pleasure. The green areas are interrupted by extensions of the sidewalk which have benches and parking for bikes. All lanes are on the same level and have the same textured paving, encouraging slow transit.

PROPOSED



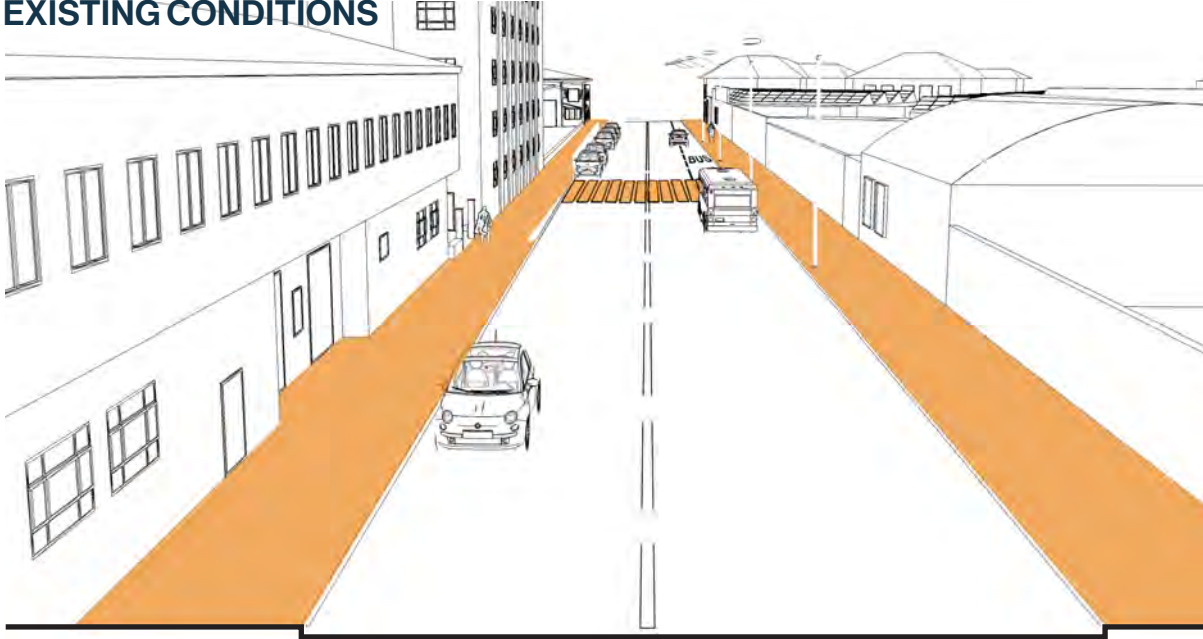
3.9m



2.5m



EXISTING CONDITIONS



3.9m



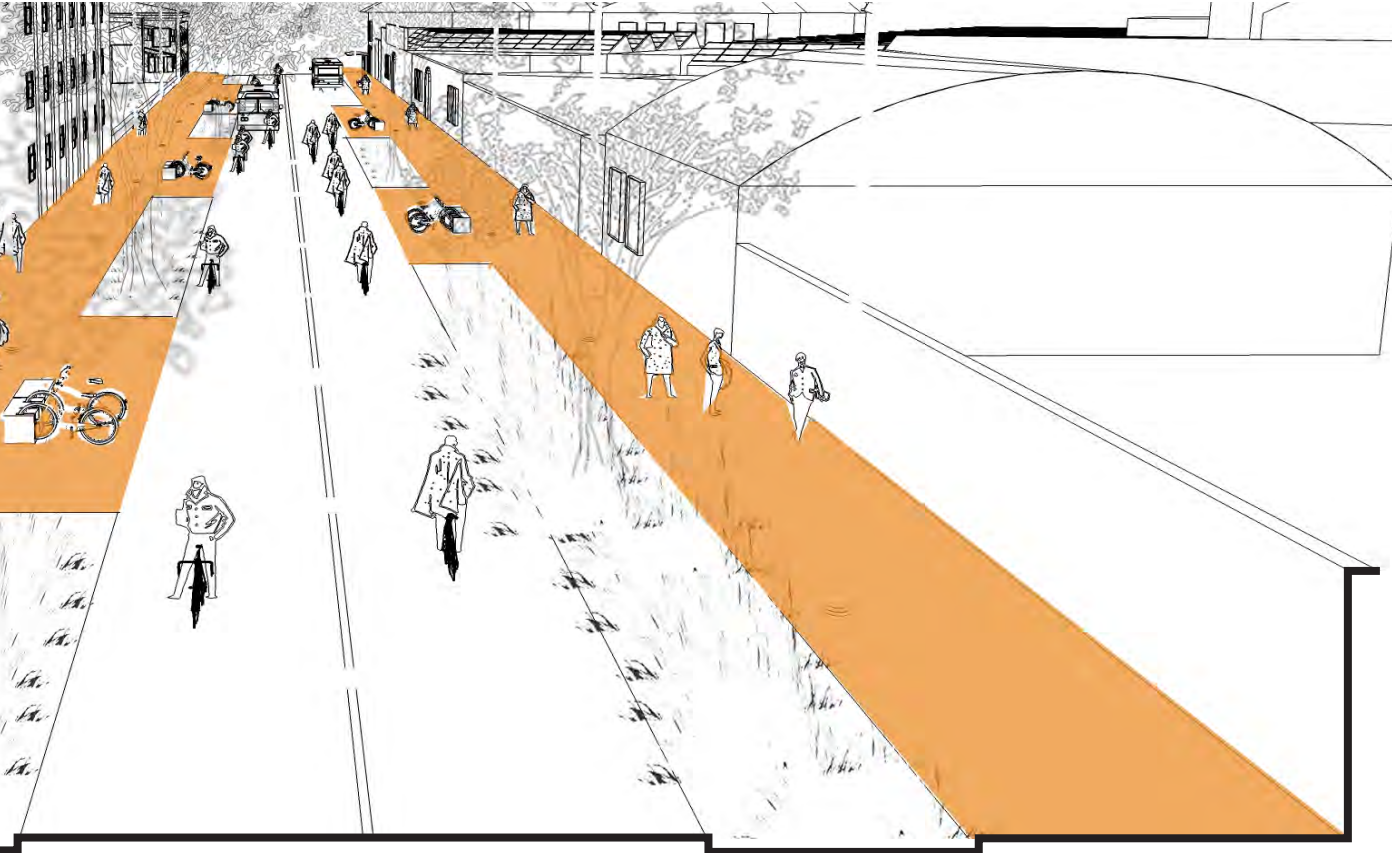
3.3m



3.3m



1.3m



3.3m



3.3m



2.5m

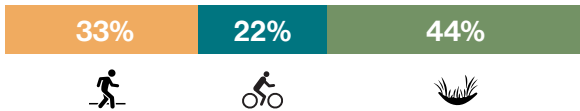


3.8m



Via Verde

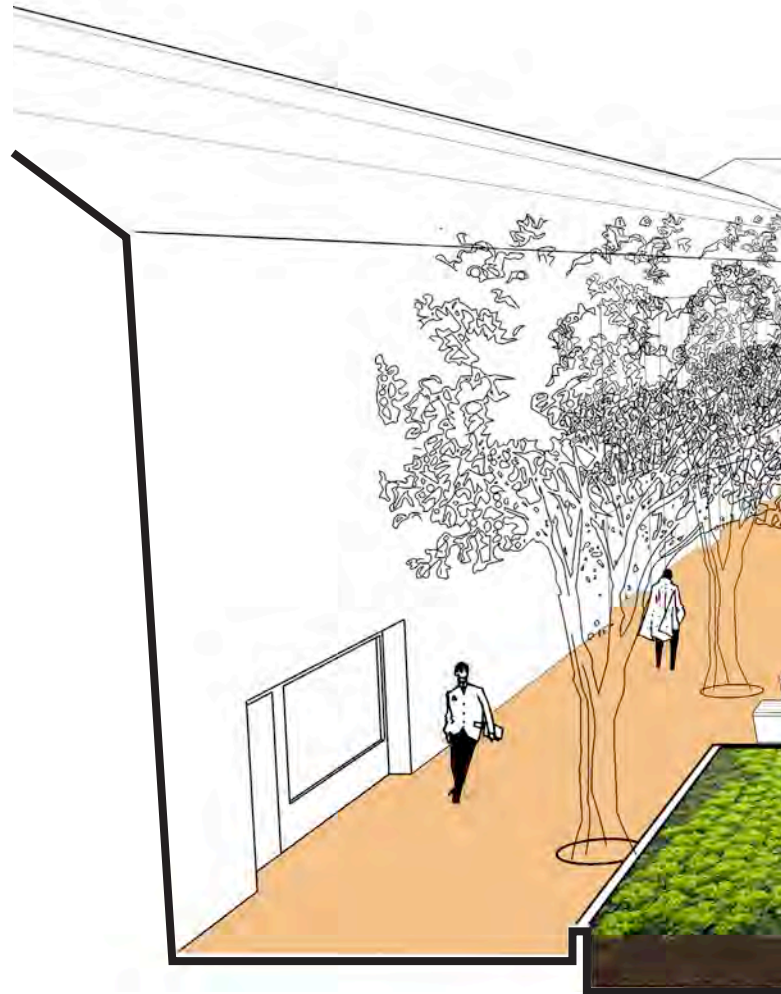
Green Corridor



Via Verde is the site's transverse green corridor. The newly proposed street runs lengthwise from southwest to northeast through the site, along the edge of the former railway and intersects with the central cultural open space.

The street disallows vehicular traffic in favor of pedestrian, bicycle, and scooter travel, and makes ample room for greenery. Two tree lines offer strolling pedestrians shade, and clusters of benches, kiosks and other street furniture offer a respite on daily journeys. Large planters create a space for urban agriculture and maintain permeability.

Any deliveries along Via Verde are encouraged to use hand trucks and cargo bicycles for all but the largest shipments.



3.9m



4.0m





Via Catania near Milan Barrier ▲



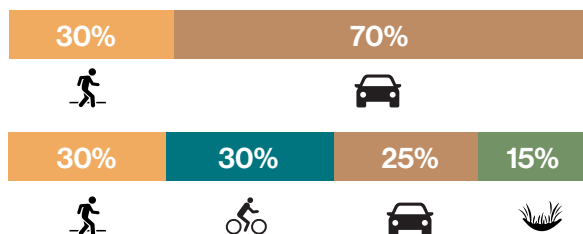
4.0 m
🚲

4.0m
🌿

3.0m
🚶

Via Sordevolo

Passage



Via Sordevolo is a pedestrian passage and bike-friendly residential street. Vehicular circulation is only allowed to access residential lots. Walking, socializing, gathering, and recreation are the main activities.

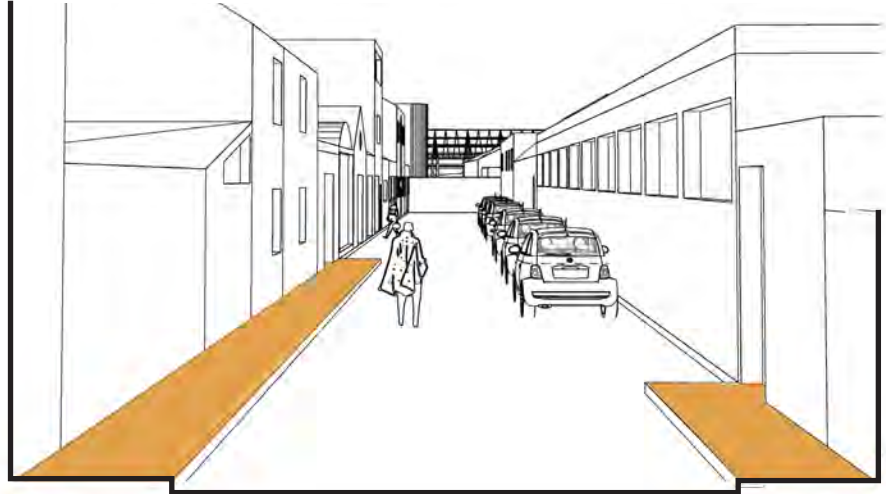
It includes a single shared space for bikes, pedestrians and residential parking. The installation of green areas will depend on the width of the passage; existing green areas will remain in the same place. Passages will include bicycle parking to encourage the use of bikes, pedestrian amenities, and furniture to provide comfort to the users.

The proposed street is at the same level all the way across and has the same textured paving encouraging very slow transit.



▲ Via Sordevolo

EXISTING CONDITIONS



6.8m



PROPOSED



6.8m



Paving Palette

From Traditional to Technical

The palette of materials used on the streets and sidewalks is a space for innovation and a signal to street occupants about the function and use of a space. A spectrum of materials from traditional to technical allows the site to fit in with its surrounding neighborhoods, while creating room to innovate and experiment with new purpose.

SUSTAINABLE

Wherever possible, materials should be sourced locally to minimize transportation costs and support local producers. Paving should be permeable to avoid pooling and mitigate stormwater runoff. Technological material selections offer opportunities to generate energy on-site.

INNOVATIVE

The palette plays on materials that exist throughout Torino, while offering new tools for a new district.

INDICATIVE

Integrated lighting and a variety of textures enable urban designers to communicate street functions simply and intuitively. Paving helps set the pace, directionality, and character of each street. Smooth and non-slip materials offer solid footing and smooth transit.



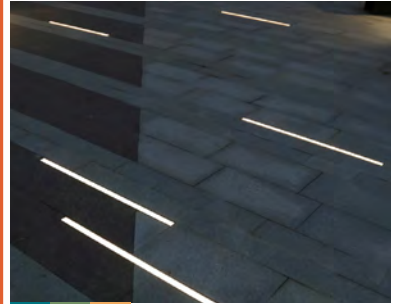
▲ Children play in Torino's Piazza San Carlo.



Smooth Stone



Patterned Cobblestone



Integrated Ground Lighting



Red Brick Paving



Permeable Pavers



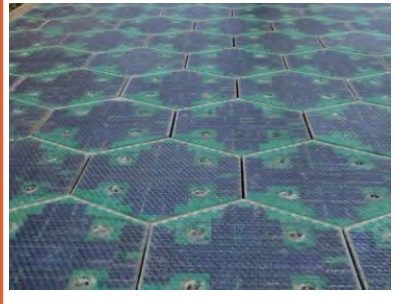
Kinetic Power Capture Paving



Asphalt







Colored Textured Asphalt



Solar Roadways

INNOVATION AISLE

Images courtesy of:
Smooth Stone - Vector Stock
Patterned Cobblestone - Getty Images
Integrated Ground Lighting - TRIF Lane
Kinetic Power Capture - OVO Energy
The rest - Wikimedia Commons

-  Main
-  Secondary
-  Green Corridor
-  Passage

Street Toolkit

Curb-ready urban interventions

This kit-of-parts can be applied to streets throughout the Regio Parco site to build public spaces where pedestrians are comfortable, active and safe. The mix of street furniture and street design tools offers a start, but new techniques and innovations from the area will continue to expand this kit.

Start with the essentials and streets can become a welcoming space for activity and gathering. Elements like seating, public wifi, and plantings can turn a street from a place to move through into a destination. Wide sidewalks can accommodate a line of these amenities along the curbside.

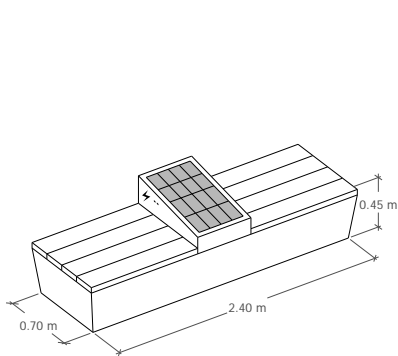
The street furniture recommended here represents a start, but as Regio Parco welcomes new workers and residents, the community should expand on this kit-of-parts as they see it.

Curbside interventions, like extensions at the corners and raised intersections, elevate pedestrians as the protagonist and force drivers to take turns and intersections slowly and carefully. Alongside these intersection treatments, mid-block chicanes and traffic diverters are physical cues that ensure walkable traffic speeds without the need for enforcement.



▲ *Public water fountains throughout Torino feature the city's namesake bull.*

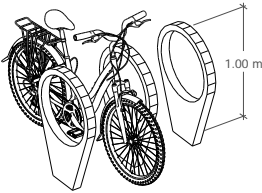
Street Furniture



Benches with Solar Charging Stations



Interactive Kiosks with Public Phones and Wifi

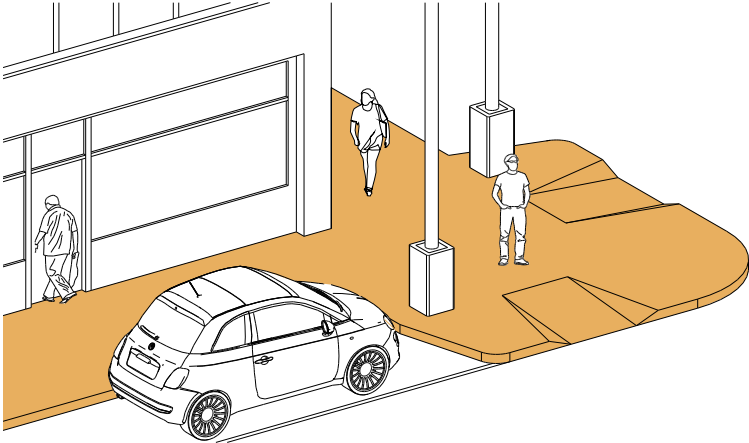


Bicycle Parking



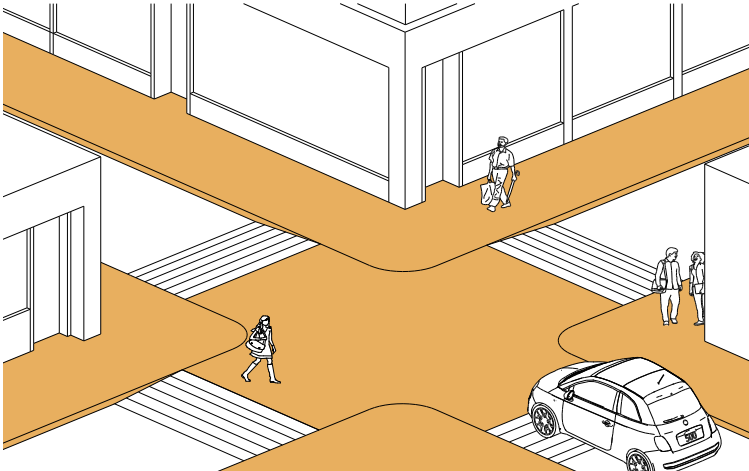
Planters

Curb Design



CURB EXTENSIONS

- Increase pedestrian space
- Provide wheelchair access
- Shorten crossing distances



RAISED INTERSECTIONS

- Slow drivers at intersections
- Allow pedestrian continuity
- Provide wheelchair access

Open Space

Introduction

Open space, green space, natural environment, and nature-based solutions are but a few terms that are used to refer to projects that actively shift away from trends of over-engineered and concretized solutions. This return to a better integration of nature in built spaces aims to address problems of human inactivity, air pollution, climate change, stormwater management, urban heat island effect, community-building, and so much more.

Open space is a broad term that encompasses areas for outdoor human activity, natural ecosystems, sustainability, air quality, and water management. Open spaces can often offer more than one of these benefits in any given place.

Torino has one of the highest per capita green space ratios compared to other major cities in Italy, at 21 square meters per person. Existing green spaces surrounding the Regio Parco site, including Parco Colletta and the Cimitero Monumentale, are larger than most open spaces found in Torino. While these areas are great amenities, the Regio Parco site itself lacks quality green spaces that are inviting to the public.

In addition to large green areas, the neighboring Barriera di Milano has pocket parks that serve residents. Regio Parco offers an opportunity to connect these existing green spaces as well as take innovative measures to create new ones.

This section seeks to offer guidance and design ideas for a comprehensive open space network in Regio Parco. The proposed open space network not only offers usable outdoor activity space to residents, workers, and visitors, but also creates a rich ecosystem of native plants, reduces local air pollution, and maximizes stormwater management on site. It proposes ways to manage industrial site runoff and describes the potential to expand sustainable solutions to a neighborhood scale.

Goals



HEALTHY

- Walkable access to open space
- Improved public health
- Community gardens for local produce



ENGAGING & INCLUSIVE

- 100m green space proximity to residences
- Accessibility for all abilities, ages, and groups of people



CLIMATE RESILIENT

- Tree cover
- Permeable surfaces
- Local wildlife and plants



RESOURCEFUL & RESPONSIVE

- On-site water storage
- Water treatment through nature and soils
- Directed and adaptable water flows



INTERLINKED

- Links to surrounding natural assets
- Green connections within site



BEAUTIFUL

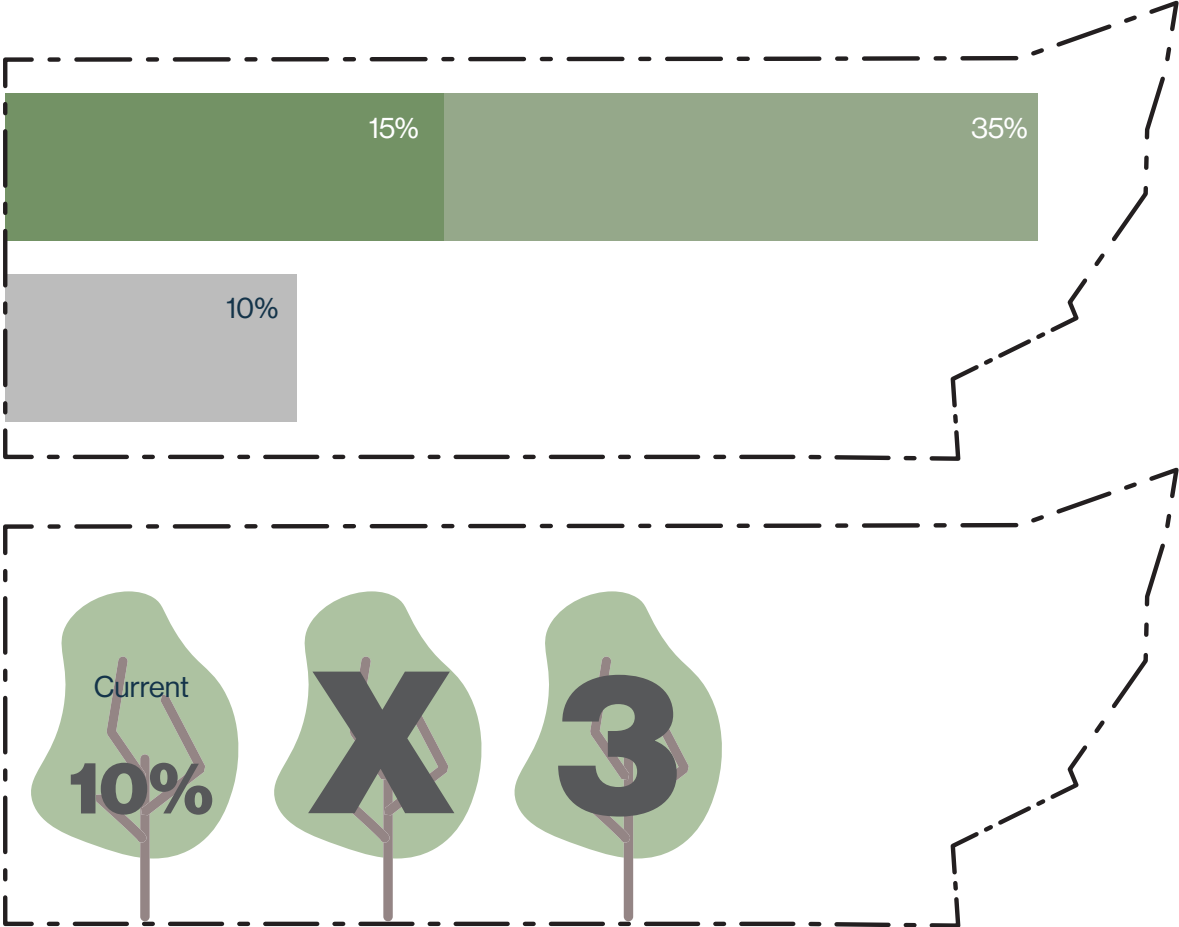
- Street tree cover
- Street plantings
- Pocket parks
- Larger recreational parks

Targets

Policy Considerations

On average, Torino offers 21 square meters of green space per capita. Given Torino's current average population density, we estimate around 46,000 people living within our site in the long run. The World Health Organization (WHO) recommends 50 square meters of green space per capita. Based on these figures, it would require 15% of Regio Parco to be green space to match Torino's average, and 35% to meet WHO recommendations. Thus, we have made target green space coverage a minimum of 15% and an ideal of 35%.

There are mixed tree canopy coverage recommendations that vary based on development density, land use patterns, ordinances, and climate. Taking into account the fact that Po Valley is natively forest land, and since this site is close to the center of the city and a high development density is ideal, we believe targeting a 30% tree canopy coverage would be desirable on this site. This target would put the site on par with other cities such as Seattle, Los Angeles, and Boston.



Guiding Principles

PUBLIC HEALTH

The increase in green space and tree cover proposed in this section aims to improve public health by providing more opportunities for outdoor activity as well as better air quality. The linear park is intended to connect beyond the boundaries of this site to create a continuous network of recreational spaces for everyone.

USABILITY FOR ALL

This plan proposes equitable access by ensuring at least a pocket of green space within 100 meters of every resident on site. By dispersing the green spaces, we hope to reduce crowding in outdoor spaces such that they remain usable for everyone.

However, equitability will require more public engagement and community building through conversations and policies, in addition to spatial design. We hope the effort to engage residents for feedback and co-creation will continue beyond this plan.

THE ENVIRONMENT

Air quality is one of the largest problems Torino faces today and increased green space can improve this. Further, floodwaters can be managed through increased green infrastructure and strategic design of the network of green spaces. This plan, for example, uses a more winding canal to slow down water flow and keep the rivers from overflowing.

EXPERIMENTATION

Consistent with other aspects of this plan, Regio Parco should be used for experimentation and pushing boundaries of outdoor spaces. The existing wakeboard pool is a good example. The same pool could be leveraged further to act as a retention pond with controlled release of water and used to treat or water local species.

Materials for permeable pavers are another way in which open space on this site may be used for experimentation.

FLEXIBILITY

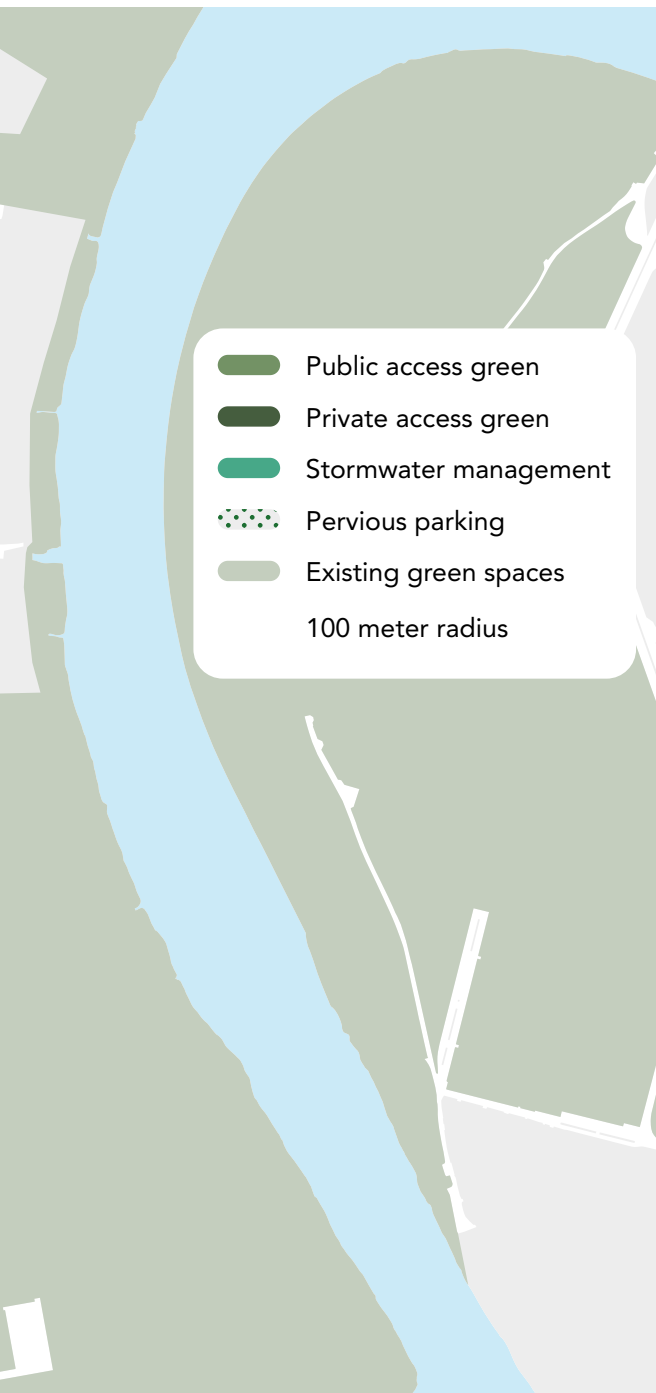
Outdoor spaces are inherently more flexible than indoor spaces, but it is still important to design open spaces to be adaptable for various circumstances. For example, today many cities are drawing 6 foot diameter circles as social distancing guides due to COVID-19. The Post Office Park and the Bunker area green spaces in this plan are intended to be larger and more adaptable for needs and uses as they arrive.



Parco Valentino

Overall Scheme



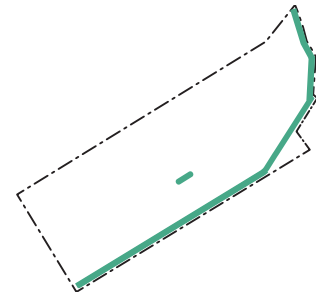


There are six major concepts and projects proposed in this scheme.

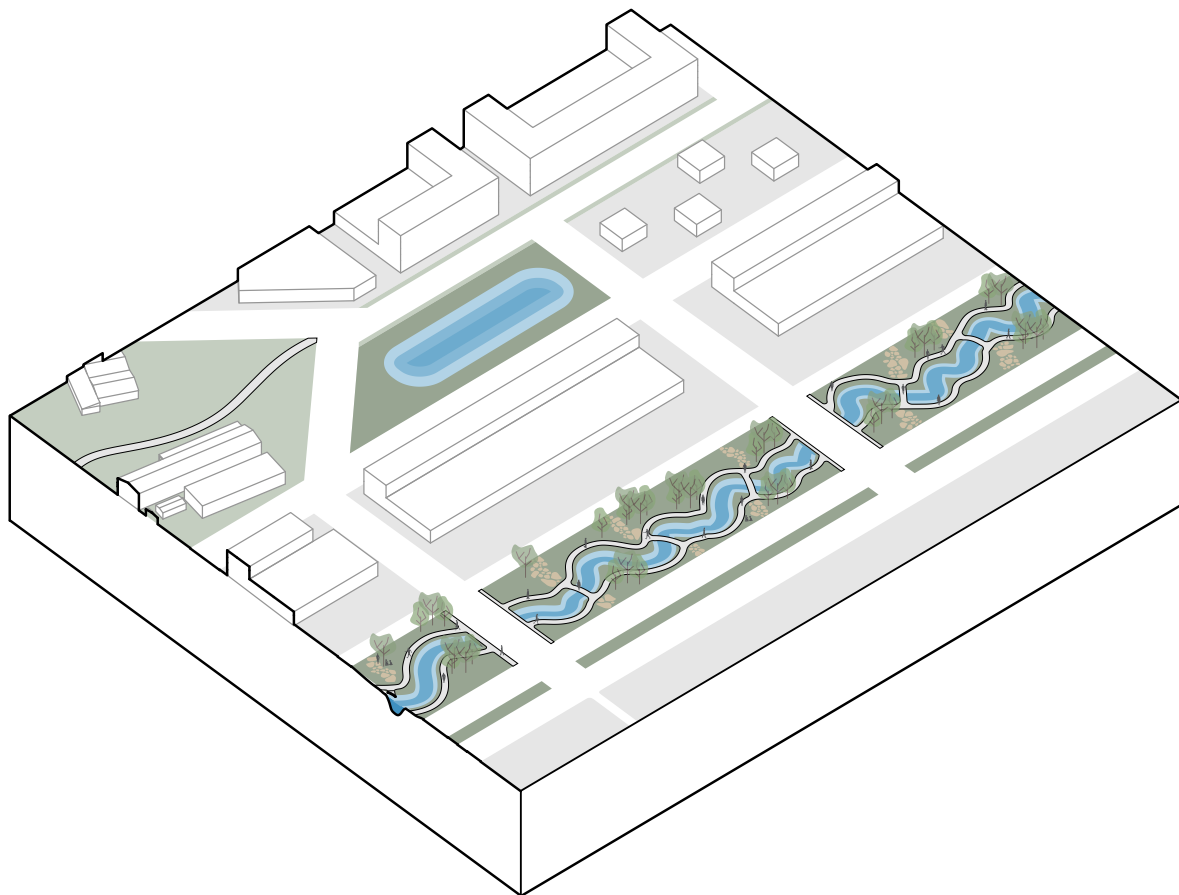
- 1** The first is a linear park along the canal that already exists on the southern edge of the site. This canal, bordering proposed new industry, would provide stormwater management for industrial runoff and the entire site as well as an inviting and aesthetically appealing green waterway for people to enjoy.
- 2** The canal would run into the next major project: A park where the ex-post office currently sits. This park is intended to become one of two social hubs on the site, offering a variety of uses and spaces, including a food court, botanical garden of native species, and a water feature showcasing the treated water from the canal.
- 3** This water would flow into the third project proposed: Urban agriculture. The linear green space that used to be railroad tracks, following the northeastern curve of the site, is proposed for community gardens as well as a continuation of pedestrian and bike paths. The treated water will be used for irrigation.
- 4** The fourth major concept is to connect this site to parks and green spaces outside of Regio Parco. Two axes of green corridors cut through the site linking to off-site parks.
- 5** Fifth, distributed pocket parks throughout the site would be located such that all residents have at least a small green area to access within 100 meters of their residence.
- 6** Finally, small-scale green infrastructure tools are offered throughout the site, especially where currently large areas of concrete pavement exist.

The sum of all of these projects working together will allow not only more outdoor access for residents and visitors, but also climate and air quality benefits and stormwater management and recycling on site.

Linear Park



A linear park allows for varying degrees of treatment along its depth, demonstrated by projects like the Houtan Park in Shanghai. The existing canal already drains toward Parco Coletta and the River Po, presenting an opportunity to build an amenity around it for natural ecosystems, residents, visitors, and possible experimental green technology.



Torino faces increased risk of flooding due to climate change, with neighboring areas having already experienced flooding. To help mitigate this risk, the site should utilize the existing canal on the southern edge, as well as the 100 meter setback required from the cemetery wall, to

manage stormwater runoff from the industrial buildings, the overall site, and possibly even the Barriera di Milano district. Projects like Houtan Park in Shanghai have used terraced vegetation and soils to treat runoff to greywater. Similarly, this canal can be designed to wind back and

forth instead of running straight. Further, native species of plants can be used to treat the water.

The wakeboard pool created by the Bunker can be further leveraged as a retention pond to slow down the flow of water while doubling as an activity for visitors. It can be connected to the upstream portion of the canal, releasing water at a slow rate during rainfall events.

The treated water from the canal can be showcased as a public amenity in the proposed park, as well as travel farther to serve as irrigation for the community gardens.

Treating and reusing as much water as possible on site will create a sustainable water cycle and reduce the demand for fresh water. In addition, this canal can reduce runoff pollution to ensure that the impact of adding industrial uses to this site does not have an overall negative effect on the surrounding natural ecosystem.

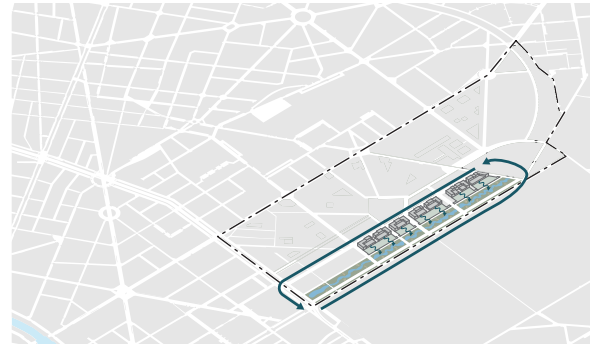
A further potential of this canal and surrounding vegetation is that it can also serve as a testbed for green technology or an educational outdoor museum.

MAINTENANCE AND FUNDING

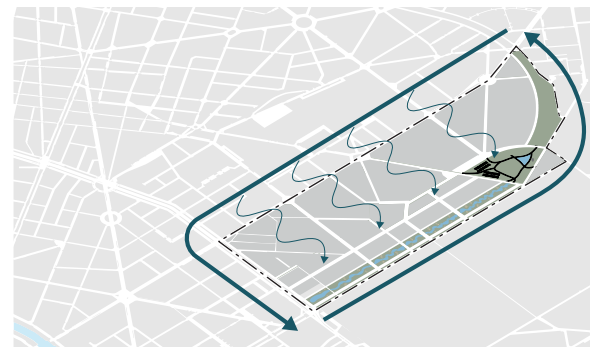
- Green services can be maintained/funded by partnerships amongst the industries moving into the site. New private partners may receive incentives from the city to help maintain this amenity.

SUSTAINABILITY RECOMMENDATIONS

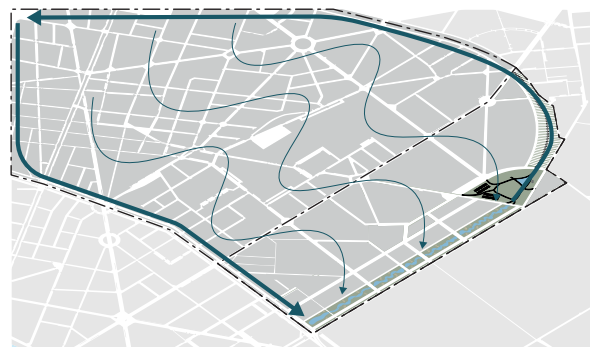
- On-site water should be captured and treated as much as possible to reduce load on existing stormwater infrastructure.
- The southern edge near the canal can serve as a testbed for innovative green technology and an educational open-air museum for residents to learn about the innovations happening at home.



▲ *Water cycle at industry scale*

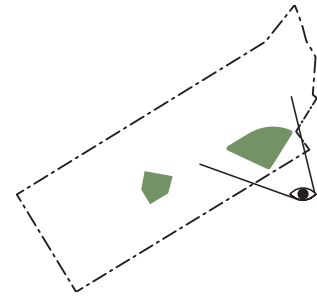


▲ *Water cycle at site scale*

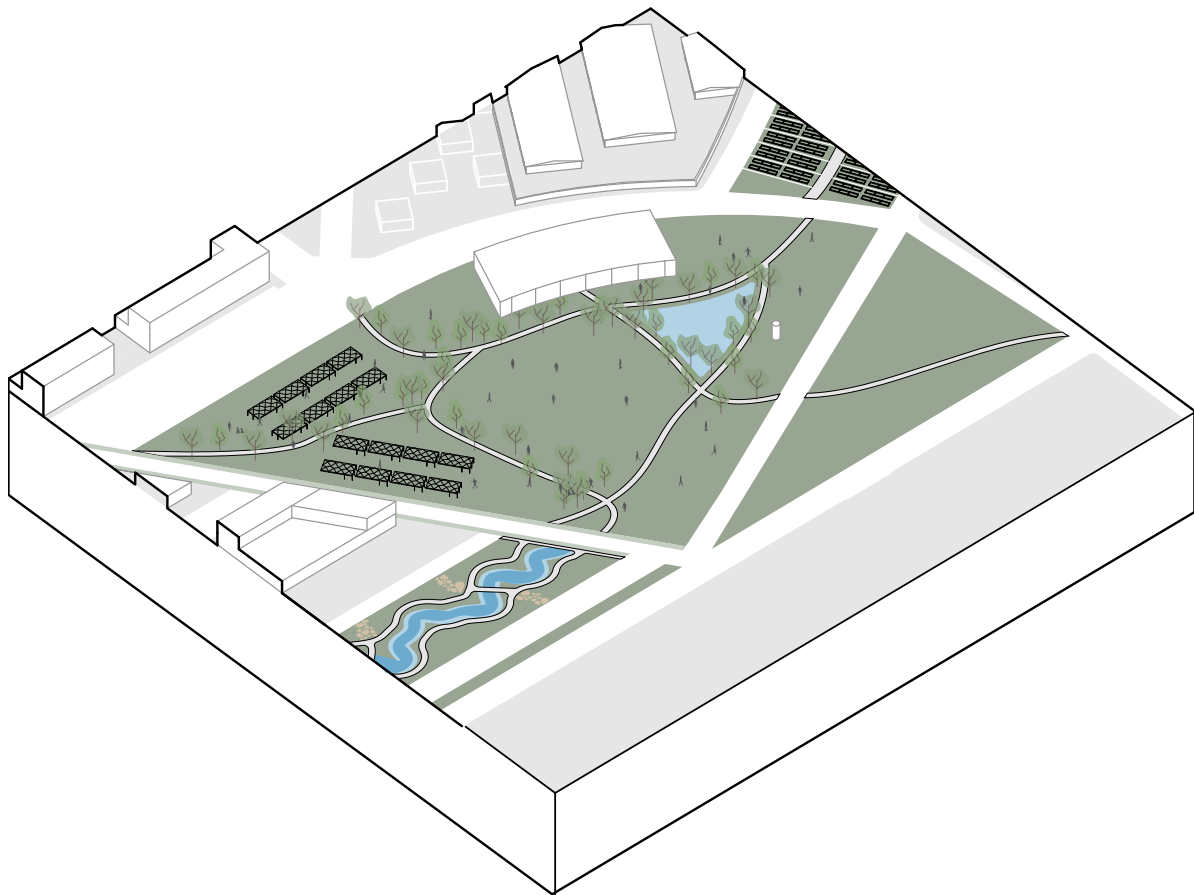


▲ *Water cycle at district scale*

Post Office Park



The Post Office Park, also discussed later in the Catalytic Projects section of this report, is intended as a second major hub in Regio Parco (the first being the Bunker area). This multi-purpose park would be an amenity to employees around the park, offering open space and food options. It brings the community together through botanical gardens, farmers markets, and an open event space, and it will offer educational opportunities around the water feature and smog tower.

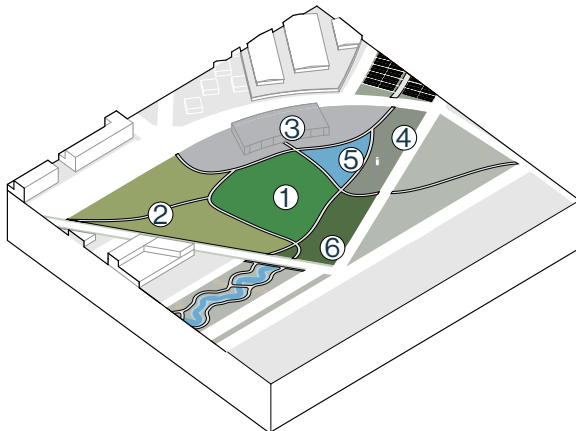


This park, where currently the ex-post office building stands, will serve many functions. At its heart, it provides an open grass lawn for flexible use such as events, picnics, and concerts.

The northern edge will be anchored by a permanent light structure that can house an indoor food market, local restaurants, and public restrooms. This structure offers a space to entrepreneurs to open food stalls and other small vendor businesses. It could also provide new commercial expansion opportunities to the existing flower and gravestone vendors that informally line the southern edge of the site serving the neighboring cemetery.

West of this building will be an extension of the market with temporary functions such as farmers markets and fairs. Historic images of Regio Parco as well as the heavy foot traffic at Mercato Centrale di Torino suggest a demand for outdoor markets around this site.

The southern edge of the park is proposed as an area of dense native vegetation. This could take the form of a botanical or butterfly garden, which invites visitors in and engages them with signage and information about local flora and fauna.



- ① *Multipurpose field*
- ② *Outdoor market area*
- ③ *Indoor market*
- ④ *Smog tower & information*
- ⑤ *Water feature*
- ⑥ *Native vegetation/botanic garden*

Finally, the eastern corner of the park is proposed to house a pollution sucking tower. Precedents for this include Daan Roosegaarde's Smog-Free Tower. As a piece of productive public art, the tower could work toward improving air quality as well as increasing public awareness of air pollution as a public health crisis. Manufacturers on-site, such as Mattioli, could create products from the captured pollution as Daan Roosegaarde's project did making jewelry to encourage innovative manufacturing from waste products in Torino to exemplify reuse and recycling.

The triangle lot on the southeast side of this park is currently a parking lot and is proposed to remain as such with some modifications. The pedestrian path would serve to link existing ecosystems by connecting the new park with the Parco Coletta and the Dora Riparia. Additionally, the material of the parking lot ground should be more porous as discussed later in this section.

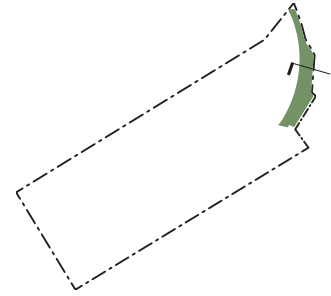
MAINTENANCE AND FUNDING

- Partnerships between the city, environmental non-profit organizations, and on-site businesses would benefit from the visibility and proximity of restaurants and food markets.

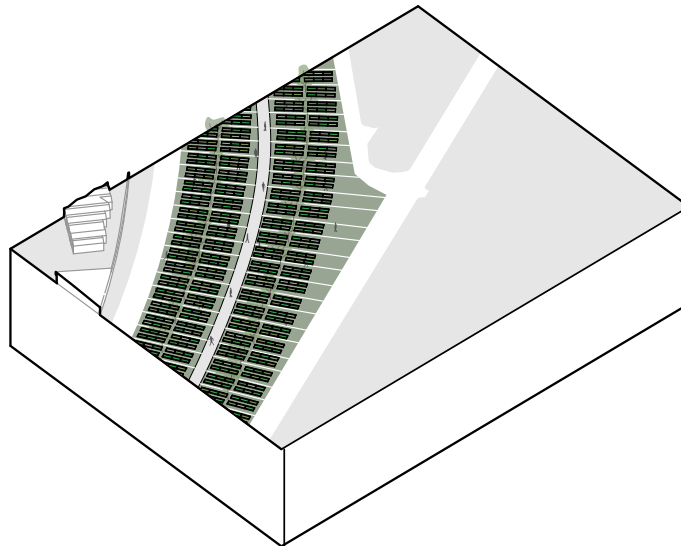
SUSTAINABILITY RECOMMENDATIONS

- The park should use solar powered lighting.
- The water feature should use treated water from the canal.
- Trees should be abundant, except in the open lawn space.
- New structures should use low-tech recycled construction materials.
- A community solar project should be installed on the roof of the food court.

Urban Agriculture



Urban agriculture along the strip that used to be railroad tracks creates more productive land and could complement a possible future food industry on site. It also brings neighbors together for a common purpose and increase the sense of ownership among residents.



EXISTING



The benefits of urban agriculture are not simply the production of local food. This amenity allows residents to become more invested in their neighborhood, build community, and provide educational opportunities for children and adults. Grow Dat Youth Farm in New Orleans has created programs around youth planting and harvesting crops, selling them to local restaurants and keeping the earnings, and learning recipes with fresh ingredients.

Even without a formal and structured program around this area, plots in this urban farm can be adopted by local residents for maintenance. The high demand for kitchen gardens in the Bunker area indicates a local interest for small-scale community agriculture.

MAINTENANCE AND FUNDING

- Partnerships among the city, nonprofits, and community organizations can support this feature.
- Selling locally-grown produce to businesses such as restaurants, food production entrepreneurs, and co-packing facilities could also provide funds.

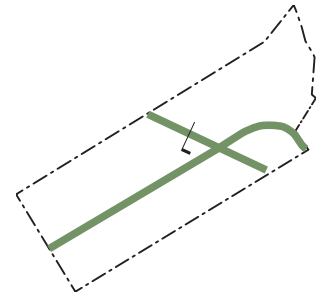
SUSTAINABILITY RECOMMENDATIONS

- Permaculture growing methods would increase yield and promote biodiversity.
- Irrigation should be obtained from treated grey water.
- Participation schemes should be as inclusive and inviting as possible.
- Farming programs should be integrated into local education and public engagement initiatives.
- Branding could play a role to establish the area as a productive agricultural innovation site.

PROPOSED



Green Corridors



The two major green corridors cutting across the site serve to connect Regio Parco with its neighboring sites. They also allow more comfortable multi-modal access through the site.

EXISTING



The green corridors link and extend existing off-site green spaces such as Parco Colleta into the site. Their primary features include more right-of-way dedicated to pedestrians and bicyclists, and more landscaping compared to other streets. The right-of-way makes the streets into a vibrant part of the public realm that facilitates daily neighborhood interactions. The landscaping can take the form of rain gardens, planters, trees, or other vegetation, and contributes to stormwater management and air pollution. Please refer to the Mobility Recommendations section for details on corridor design.

MAINTENANCE AND FUNDING

- Green Corridors would be maintained and funded by the city, similar to other roadways.
- Green infrastructure can be maintained through a program such as the Entrepreneurship Hub that trains and employs at-risk youth in green infrastructure maintenance (example: PowerCorpsPHL)

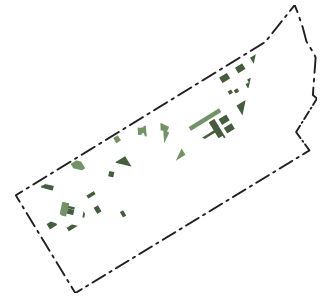
SUSTAINABILITY RECOMMENDATIONS

- Street lights should be solar powered.
- Irrigation uses treated canal water where possible.
- Stormwater infrastructure should be robust and capable of handling heavy downpours.
- Asphalt should be porous to reduce flood risk.

PROPOSED



Pocket Parks



Pocket parks, in their many forms, shapes, and sizes, ensure green space that is within walking distance of every resident in Regio Parco, while also reducing the urban heat island effect by disrupting the otherwise continuously impervious site.

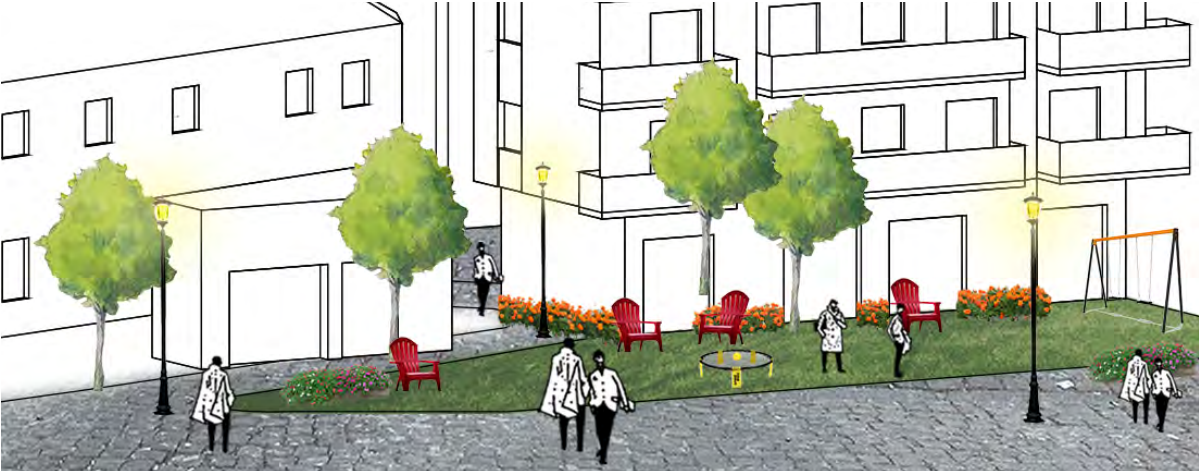


Everyone deserves nearby access to open and green space, but this need has been exacerbated by COVID-19. During this time of social distancing, some jurisdictions are restricting movement of people to within a 100 meter radius of their residences in an effort to limit exposure and germ spreading. As such, this has created an increased demand for access to even small areas of open space.

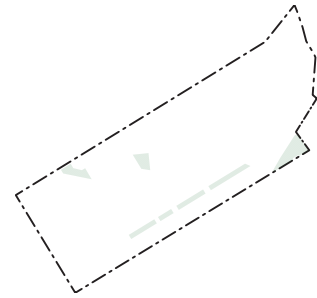
These parks can range in nature and form, for example, playgrounds, dog parks, or simply grass with trees and benches.

In traditional Torino block typology, interior courtyards offer a great opportunity for a small garden. Such spaces would have to be privately owned and maintained by developers or landlords.

Other urban forms offer opportunities for pocket parks between buildings or on block corners. These locations have been suggested in this scheme, such that all residents live within 100 meters of each pocket park.



Green Infrastructure



These are some common and small-scale tools to enhance on-site stormwater management, recommended by the United States Environmental Protection Agency, which can be employed in every block or with any structure in Torino.



Rain Gardens



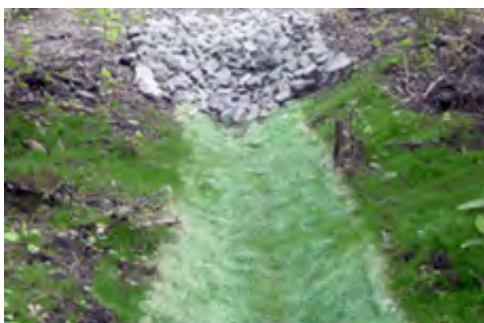
Permeable Pavers



Downspout Disconnection



Infiltration Trenches



Vegetative Swales



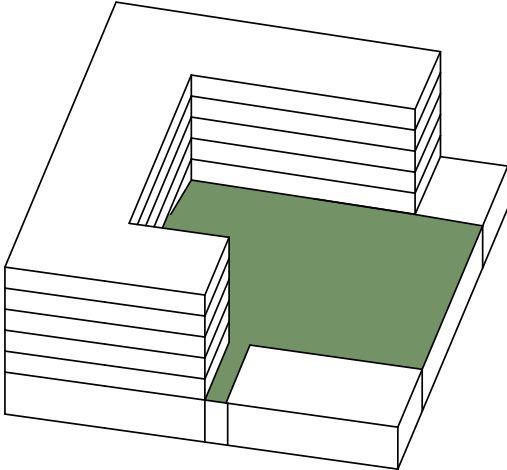
Green Roofs

There are several tools developers can use in new and retrofit construction that would complement the stormwater management features of this overall scheme. The U.S. Environmental Protection Agency suggests those listed here.

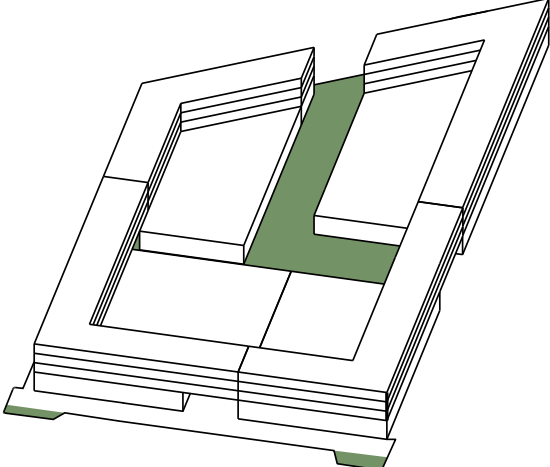
One important tool is using permeable surfaces, such as porous asphalt, where ordinarily impervious concrete pavement would be used. This scheme identifies two main

parking lots for the new social hubs as well as loading, unloading, and parking areas for the new industry. These should be constructed using porous materials that can absorb the first inch of rainfall on-site.

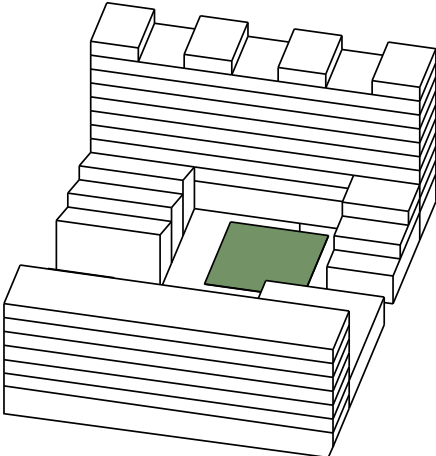
Proposed typologies with green infrastructure opportunities ▼



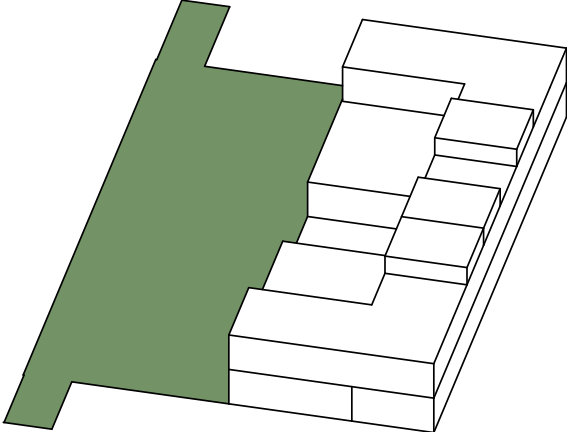
Green roofs, downspouts



Infiltration trenches, rain gardens, swales, downspouts



Rain Gardens, downspouts



Permeable pavers or asphalt

Kit-of-Parts for a Diverse Open Space System

These vignettes summarize various interventions that can be used alone or in tandem to create more vibrant live and work areas for Regio Parco residents.



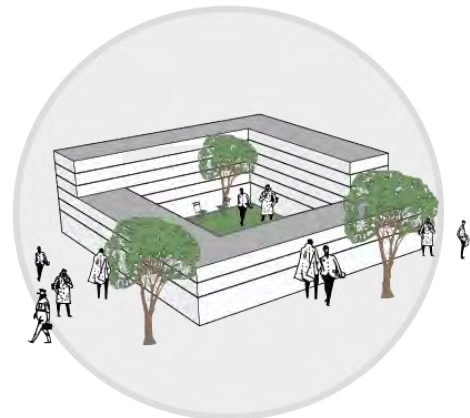
Neighborhood Pocket Parks



Active Streets



Urban Agriculture



Courtyards

A diverse set of open space typologies can reflect the various needs, sustainability goals and aesthetic preferences of the Regio Parco area. In addition, a diversity of typologies ensures that the area will be resilient to times of vulnerability.

Neighborhood pocket parks located no more than 100 meters from residences provide accessibility for less mobile populations, such as elderly and young users, and can be used even in times of lockdown when people can only move within a small radius of their home.

Active streets provide a vibrant public realm focused on sustainable transportation, and build upon existing infrastructure to increase

resilience, where porous asphalt and rain gardens reduce flood risk.

Vegetation can be used to improve air quality and build a sense of interconnectedness between balconies, which in addition to courtyards, become lively and communal public realms that provide a safe social distance in the case of pandemics.

Community gardens in the form of raised beds, kitchen gardens, or even rooftop gardens, tap into the rich food industry of Torino and the Piedmont region to create an educational and sustainable production and wellness activity.

Courtyards, usually maintained by property owners, are commonly seen in Torino within the historic building typologies. Whether filled in with small scale industry, or left as open space, they can be inventively combined with vegetation to provide a leisure area for residence and promote public health.

Green roofs can provide non-traditional open and green spaces for residents and workers. Green roofs require specific building structural integrity due to heavy loads. However, green roofs could be a beneficial addition for sturdier structures and could be especially applied near manufacturing areas to mitigate any increase of air pollution expelled from industrial activities.

Finally, industry can be combined with open space in innovative ways, from green roofs to permaculture to porous materials in loading and parking areas.



Balconies



Industrial Green Roofs

Catalysts & Implementation

Introduction

Considering the size of the site and diverse scales of our recommended interventions, we propose a three phase implementation plan driven by six catalytic projects. The catalytic projects are designed to bring our design principles to life and to inspire the imagination of Torinese residents and municipalities. They are manifested in both physical and digital interventions that go beyond our site and target the broader city.

The six projects promote diverse activities on site, bringing culture, commerce, education, and jobs to existing and new residents. They are meant to be bold, innovative experiments to test the visions outlined in this report.

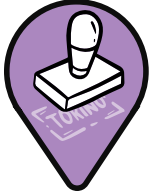
One project is an intangible 'Made in Torino' branding initiative to emphasize locality and quality in manufacturing.

The other five proposed catalytic projects are physically sited, including:

1. ManufacTorino
2. Bunker Park
3. Casa Regio Parco
4. Builders Hub
5. Mercato Regio Parco

The sited projects serve as anchors for development, building upon existing land use and increasing accessibility to and within the site. We hope these ideas provide inspiration and a strong foundation for creative activations in the future.

The catalytic projects on site are divided into three phases meant to create a ripple effect, activating development in the surrounding areas of the projects. Each phase includes appropriate strategies from the Industry & Manufacturing, Land Use & Zoning, Mobility, Open Space, and Sustainability recommendation sections.



‘Made in Torino’ Brand

A city-wide branding program includes marketing strategies and physical interventions for manufacturers in the city. It aims to help unite the city with a vision that builds upon Torino’s industrial past and translates that pride to drive growth in the future. The branding’s goal is to position Torino as a high quality, industrial hub of Piedmont and beyond. It also will create a more cohesive business and manufacturing ecosystem.

PROGRAMMING

Brand Design

- A logo along with promotional pieces will be designed for businesses who manufacture their products in Torino and for industrial tourist attractions.

City Interventions

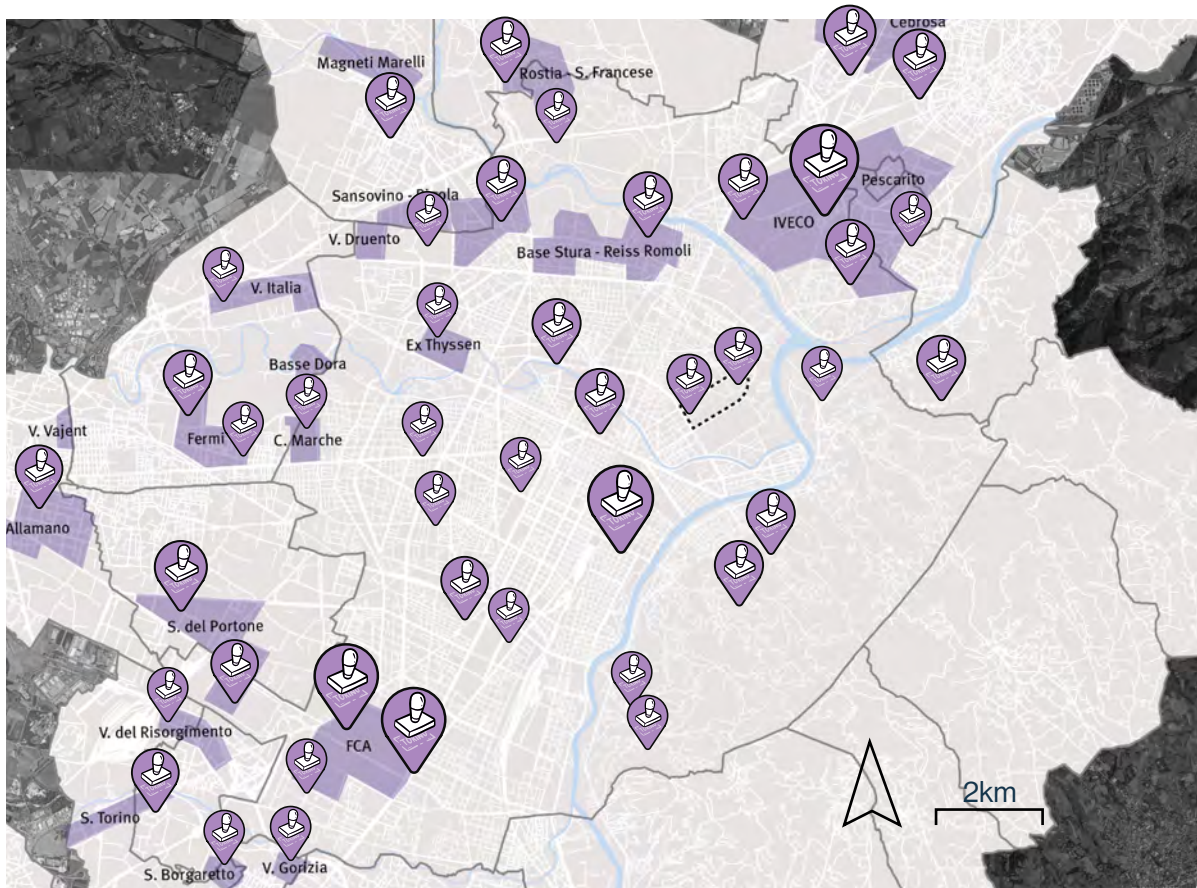
- The industrial character of the city is highlighted through a diverse range of urban interventions, such as a wall mural contest, and a kit-of-parts including signage throughout the city. These interventions will help locals and visiting guests to discover Torino’s constellation of existing and burgeoning manufacturing businesses that would otherwise be hidden or dependent on word-of-mouth.

Industrial Tourism

- ‘Industrial Tours’ of the city are promoted to invite people to experience Torino’s factories and learn more about the diverse manufacturing process and hidden character of the city.

IMPLEMENTATION STRATEGY

- A strategy that benefits both industries and tourism directly should be jointly funded by the private and public sector.
- The City of Torino could hire a brand consultant firm to develop the comprehensive strategy as well as the key communication and graphic language that will be used across the program. Then, a joint task force between the city (e.g. Chamber of Commerce) and representatives from both the industrial and tourism sectors could work on a roll-out plan and coordinate specific interventions.
- The program should serve as a marketing tool for the city and Torino’s businesses as well as a network for manufacturers to collaborate with each other. As such, the program could be structured as a membership system in which companies can apply and the Chamber of Commerce grants approval based on criteria established with industry leaders. This will help ensure high quality of manufactured products and a strong sense of community.

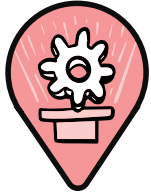


Existing industrial centers

'Made in Torino' Brand throughout the city. ▲
Map source: Atlas Torino



Examples of design interventions for the 'Made in Torino' brand at various manufacturing sites. ▲



ManufacTorino

A showcase center where any company in Torino can display their products to local and international visitors. This is a key space for the 'Made in Torino' branding program. Potential buyers can interact with companies in person and manufacturers can present new technologies and products to increase visibility.

PROGRAMMING

Permanent Exhibition

- On a yearly basis, every company in Torino gets the chance to exhibit their products and participate in this wide manufacturing network.

Industrial Tourism

- Tourists and educational programs visit ManufacTorino to discover the current and past industrial landscape in Torino through a living museum-like experience.

Industry Conferences

- Leveraging the local business and industrial talent, the center can host regular conferences and meetings for industry leaders from Italy and abroad to discuss the challenges and opportunities embedded in today's manufacturing activities.

Product Launches

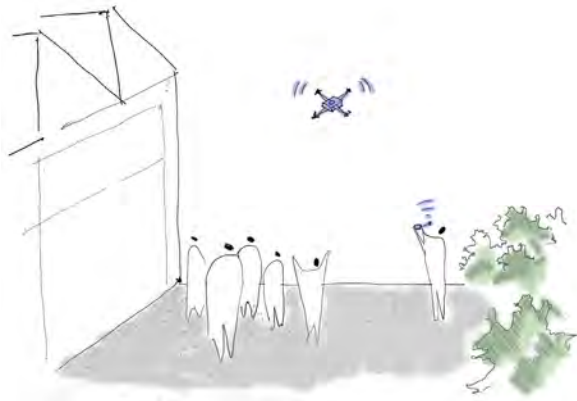
- Companies in Torino can use the amphitheater venue to launch new products and host events.

SPATIAL FEATURES

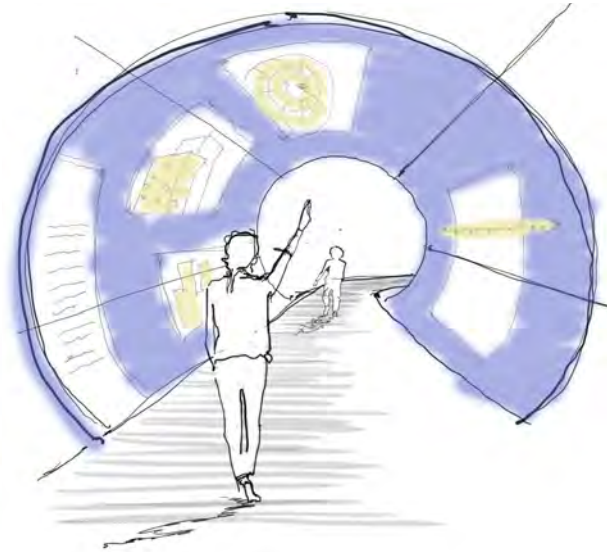
- Centrally located
- Easy connections to other areas
- Permanent exhibition spaces
- Flexible space for demonstrations, meetings, events, etc.
- Designed as a visual landmark for the 'Made in Torino' brand

IMPLEMENTATION STRATEGY

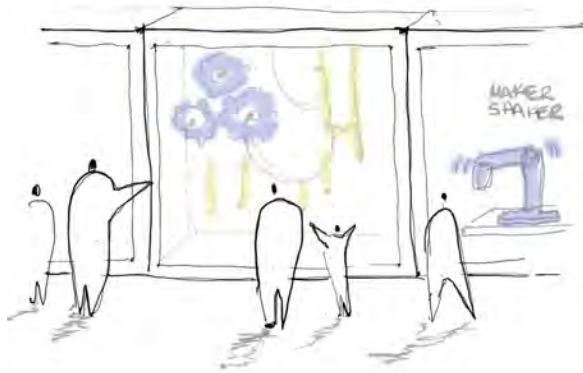
- Under a public-private partnership, established companies in Torino could fund the infrastructure and create a steering committee in coordination with the Chamber of Commerce and organizations for 'Made in Torino'. In order to lower building costs and represent Torino as the next generation of sustainable manufacturing, the building could be made out of recycled materials and leverage existing unused buildings.
- Once created, this institution could be self-maintained through the fees they collect from companies that showcase their products, from renting the spaces for product launches, and from entry fees charged to outside visitors. Private companies that invest can have sponsorship privileges with dedicated exhibition spaces.



Live demonstrations of products. ▲



Interactive display of Torino's industrial history. ▲



Booths for 'Made in Torino' companies. ▲



Conferences and meetings with potential buyers. ▲



Bunker Park

A cultural center and open space in the heart of the site. This park will integrate the existing cultural center referred to as “The Bunker” into a public/private green area to become a recreational hotspot.

PROGRAMMING

Cultural activities

- Theatre
- Dance
- Family activities
- Artisan fair

Partnership with ManufacTorino

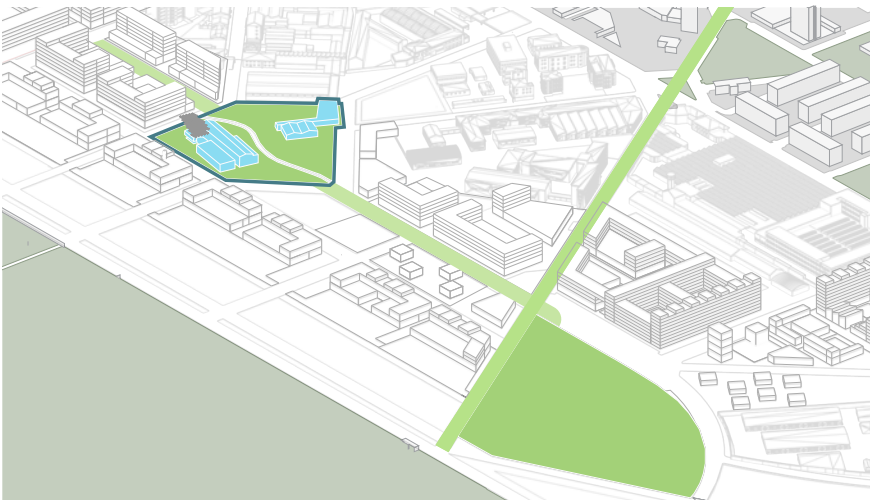
- Given its proximity with ManufacTorino, the Bunker Park can also host events or offer a larger venue when necessary.

SPATIAL FEATURES

- Preserves existing art of the Bunker site
- Large open space connected to the Bunker

IMPLEMENTATION STRATEGY

- The Bunker as a cultural institution already exists and should be maintained. This means there is less needed investment in construction compared to other catalytic projects, and would require investment only for the conversion of the vacant areas to park areas and opening the new streets. This investment can come from new developments in the site, especially adjacent to the park, so that the public space can be accessible for more people.
- After establishing the new parks, the Bunker can help maintain the new parks in their area by charging a fee for private organizations to host events there.



The Bunker Park offers a second open space anchor in the site.



The Bunker space combines different activities to serve the community. ▲



A pocket park example that incorporates existing murals and local art. ▲



Casa Regio Parco

A community center to provide social infrastructure for the vulnerable populations in the area. This space will serve recreational purposes, but more importantly, educational, social, and vocational purposes to help strengthen the community.

PROGRAMMING

Library + Computer Center

- The library and computers will be freely accessible to those who join as community members. People who require extra help would be supported by the staff and community members as volunteers.

Communal Kitchen

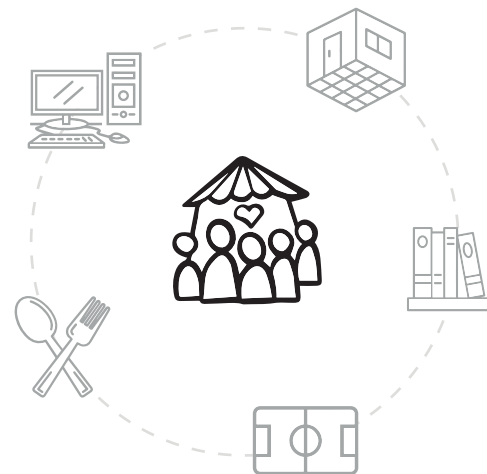
- The communal kitchen will provide cooking space to those who do not have access to food preparation areas and resources. In order to support the most vulnerable people in the community with at least one meal per day, there will be a volunteer program that prepares meals using ingredients provided by the Regio Parco urban farms.

Classes

- The center will offer key vocational training like digital literacy and Italian lessons for migrants. It also can offer social services to help with legal issues, immigration processes, or job placements.

Sports Training

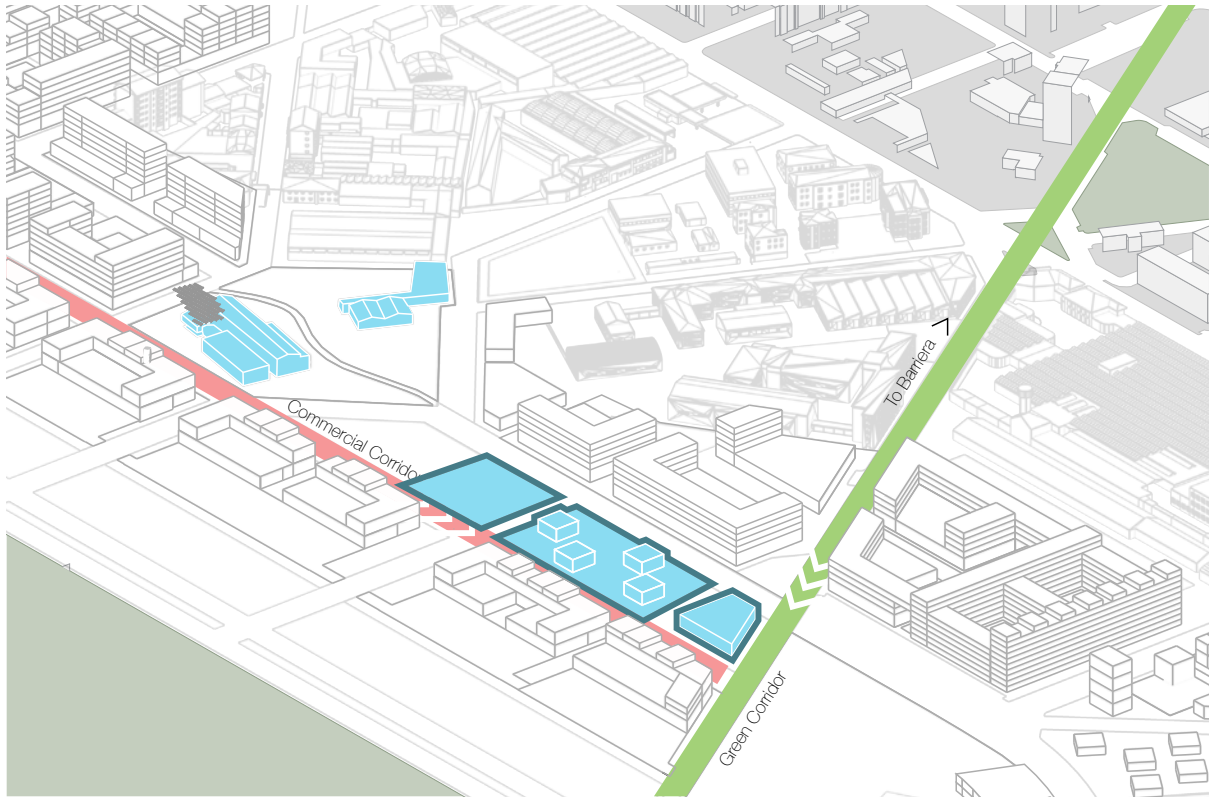
- The sports facilities can be used and booked by the community, with additional sports classes offered at a discounted price. The stormwater retention pond in the wakeboard pool by the Bunker can also be a space for leisure and nature.



▲ *Casa Regio Parco is a place where diverse communities come together to enjoy cultural, educational, and recreational activities.*

Community Events

- Anyone in the community can book the flexible spaces to host their own events, from birthday parties, to board games, to political meetings. The spaces are for the community to use.



Casa Regio Parco is at the heart of the site, at the intersection of the commercial and green corridors. ▲

SPATIAL FEATURES

- Library
- Classrooms
- Communal Kitchen
- Amphitheater
- Sports facilities
- Flexible indoor spaces

Each different industry could contribute directly to build each of the following services by using their own assets or financing it directly:

- Library
- Computer center
- Communal kitchen
- Sports facilities

IMPLEMENTATION STRATEGY

- The city, in partnership with industries in the area, could join efforts to build a community center that serves their neighbors and possible employees. Programming should support an inclusive population including migrant workers and immigrants in the area as well as older populations.

On the other hand, the city can take charge of filling these infrastructure with programmatic activities such as:

- Courses on digital literacy, job seeking, etc.
- Language classes
- Cooking classes
- Family activities



Builders Hub

This is a hub for builders, makers and entrepreneurs. This space provides innovators the support and infrastructure they need early on to start and grow their ventures.

PROGRAMMING

Co-working / Co-production

- The Builders Hub's main function and primary source of revenue is through renting co-working and co-production spaces to new and small-scale entrepreneurs seeking to gain from a rich ecosystem with limited budgets. This is an efficient way for businesses to share manufacturing expenses and logistics. This program will sit under the 'Made in Torino' brand. It will also partner with Mercato Regio Parco in terms of the food industry entrepreneurs incubator.

Incubators

- Through competition, promising industry and technology entrepreneurs are selected to get free access to the Builders Hub's services and get the support from a network of industry experts.

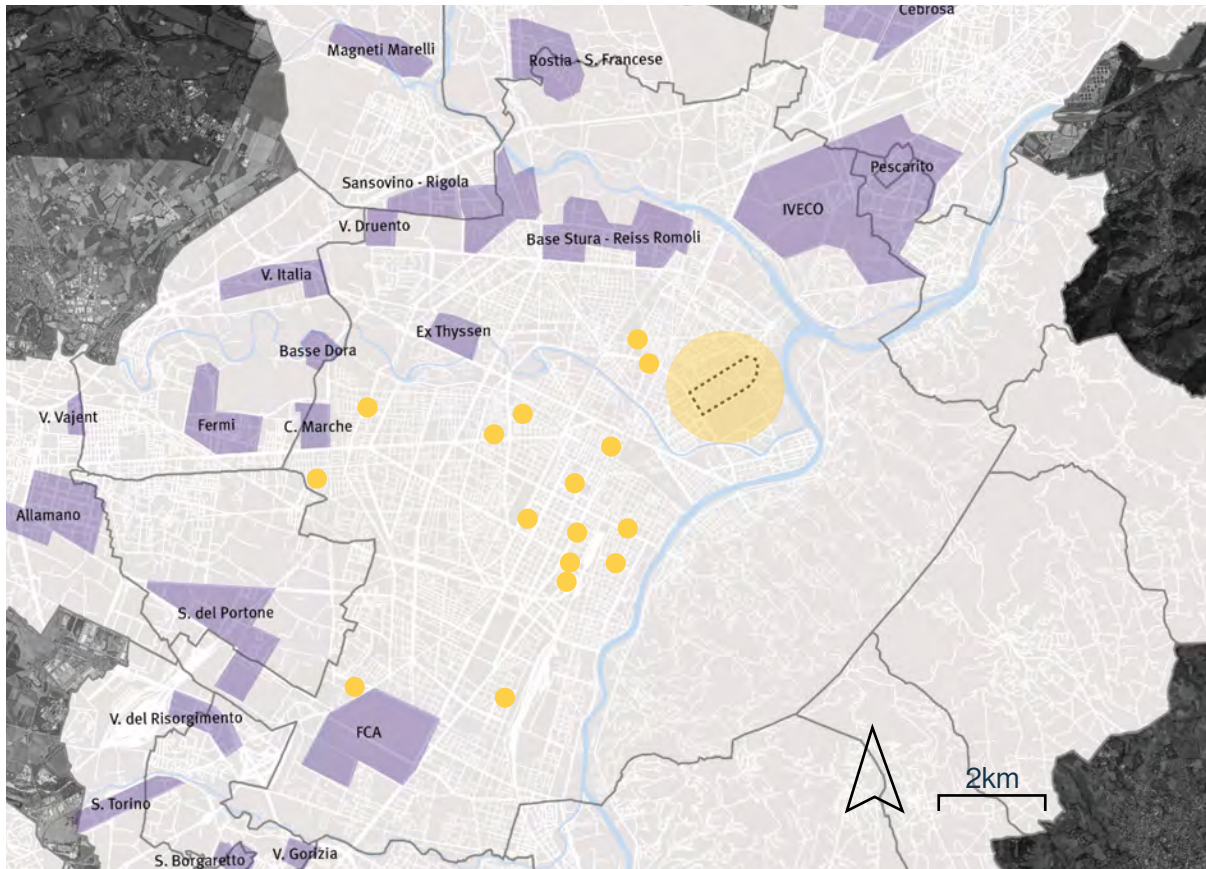
Classes

- Entrepreneurs, and the public in general, can access classes on entrepreneurship being offered here. From finances to market research, these offer an important learning component for anyone seeking to start and grow an enterprise.
- There is opportunity here to partner with local universities.



"Made in Torino" Entrepreneurs

- Similar to the previous incubator program, this program focuses on entrepreneurs from vulnerable populations seeking to start a local business. This program will leverage the Builders Hub's proximity to the migrant and immigrant population of Torino. Selected entrepreneurs will also get free access to the services and network offered by the Hub.



● Entrepreneurship Center/Co-working Space

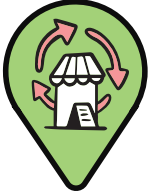
There is an opportunity for entrepreneurship centers and co-working spaces in Regio Parco. ▲

SPATIAL FEATURES

- Co-working spaces
- Flexible co-production areas
- Experimentation areas (labs, open spaces)
- Classrooms
- Conference rooms
- Meeting rooms

IMPLEMENTATION STRATEGY

- The co-working and shared “maker” laboratories are open for rental, and therefore can become an important income to subsidize the incubator programs.
- Partnerships are created with public institutions interested in promoting entrepreneurship or new technologies so they can partially subsidize the incubator programs. Depending on public interest and funding alternatives, programs for specific industries can be developed, for example, for sustainable technologies.
- Partnerships are developed with local schools and organizations to provide space for after-school programs and/or educational tours for high school students.



Mercato Regio Parco

This space introduces a new eastern entrance to the Regio Parco site and an anchor for the new green network. Built on the old post office grounds, this combination of open space and market serves as a much needed public space with recreational and commercial activities as well as a showcase of the site's environmental technologies.

PROGRAMMING

Mercato

- A weekly open air market is hosted in this area for small-scale, local farmers and producers to sell their goods. The existing local flower shops could relocate here on a more permanent basis, ensuring service for cemetery visitors and expansion of business with increased visitors.

Smog-Free Tower

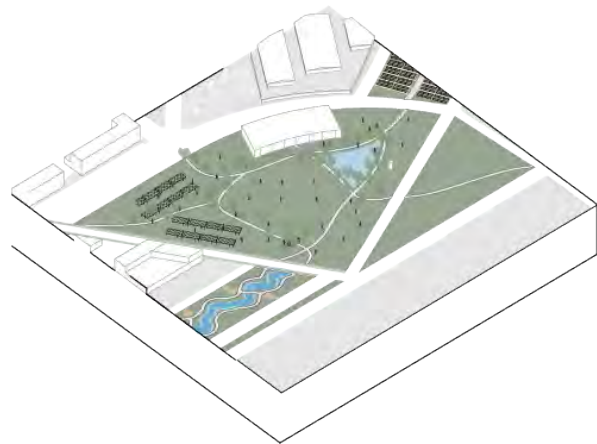
- This tower will serve both an educational and a practical purpose. The tower purifies the air providing immediate benefit, but it is also an innovative and thought-provoking public art structure that represents Regio Parco's ambition to encourage innovative solutions to today's challenges.

Food Court

- A permanent food court will be linked with the food incubator arm of the Builders Hub to help local residents start their food businesses. This will also promote the existing gastronomic technologies and community farms while providing much needed eateries in the neighborhood.

Public Events and Performances

- The center of the plaza will consist of a vast, flexible open space that can host large public events like musical performances.



Rendering of Mercato Regio Parco



Botanical Garden

- Mercato Regio Parco will have planters showcasing native species. There will be signage explaining the plant species and the role they play in the local ecology.

Water Fountain Art Feature

- The treated stormwater from the canal will pass through a fountain feature in the plaza area of the Mercato to provide a central art structure and gathering point.



Mercato Regio Parco as the anchor for green network. ▲

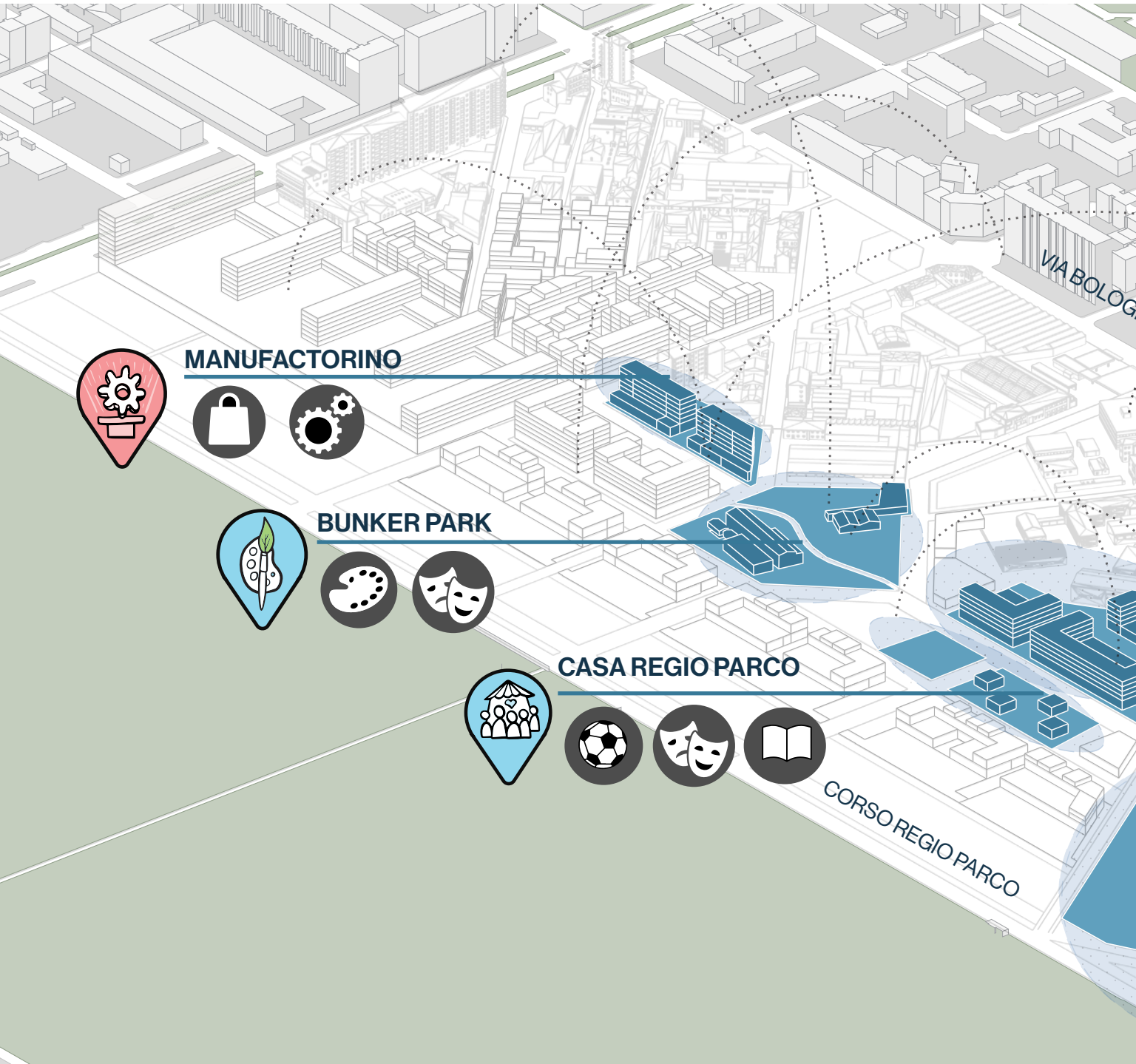
SPATIAL FEATURES

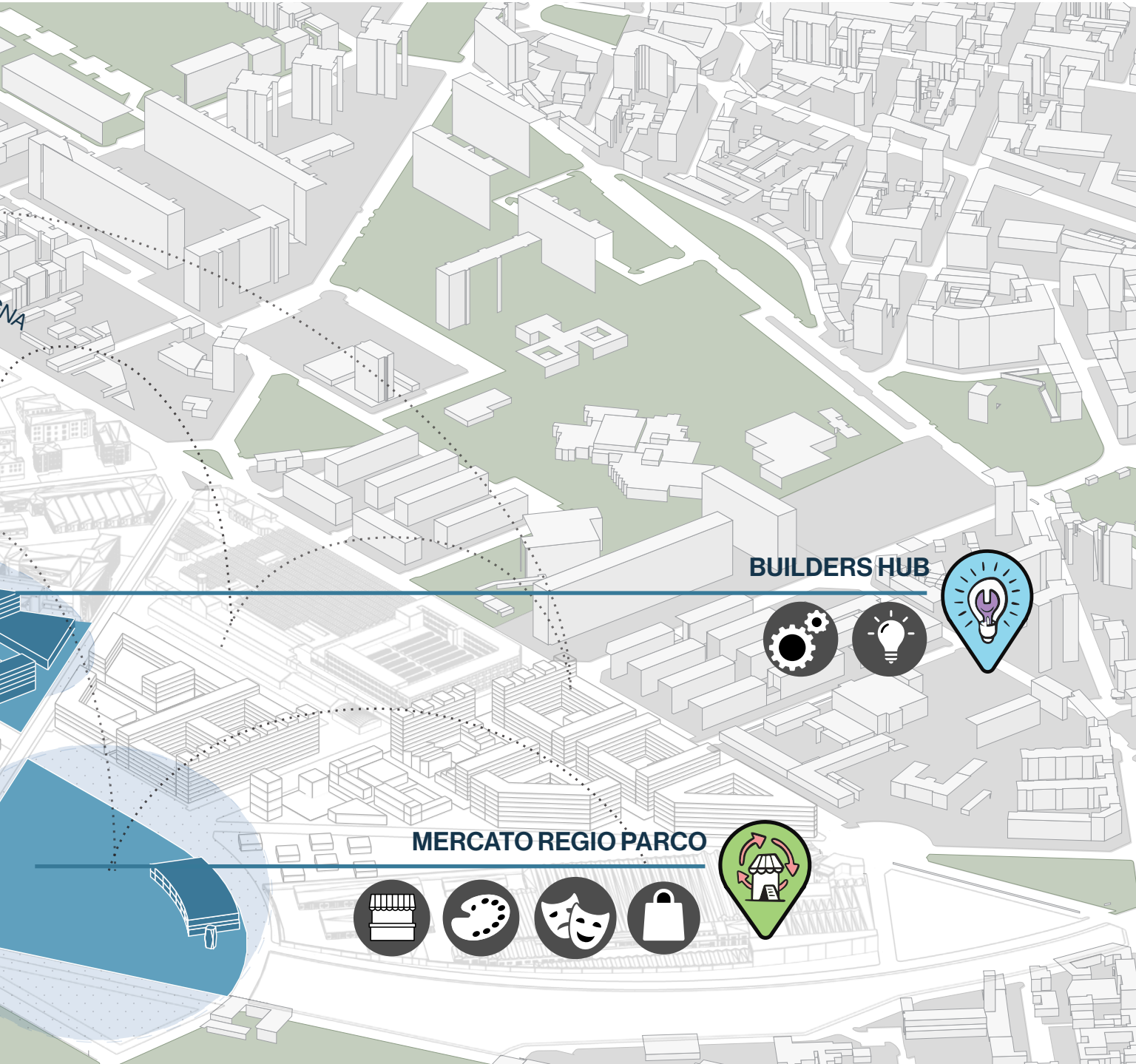
- Permanent food court
- Public restrooms
- Open central area with flexible furniture
 - Will be used weekly for an open market
 - Weather-accomodating design
- Botanical garden planters
- Water fountain art feature

IMPLEMENTATION STRATEGY

- The city should invest in the public plaza.
- Torino corporates and foundations could partner with the city to establish the park. Benefits for the participating companies could include naming privileges and advertisement opportunities.
- The food court and the Builders Hub should collaborate for funding and maintenance. This partnership could involve shared facilities and food court discounts for Builders Hub employees and entrepreneurs.
- A Business Improvement District could be allocated some maintenance responsibilities, especially with the planters and fountain as they directly relate to the beautification of the area.
- The existing flower markets and local businesses should be formally included in Mercato Regio Parco if they wish.

The Five Sited Catalytic Projects





BUILDERS HUB



MERCATO REGIO PARCO



1

IMPLEMENTATION PHASE ONE

Revitalize Regio Parco

Phase One targets the emptiest areas of the site to establish a strong foundation for future projects and interventions. The goal is to generate excitement and interest in the area by establishing the green infrastructure interventions and the two anchoring catalytic projects.

CATALYTIC PROJECTS

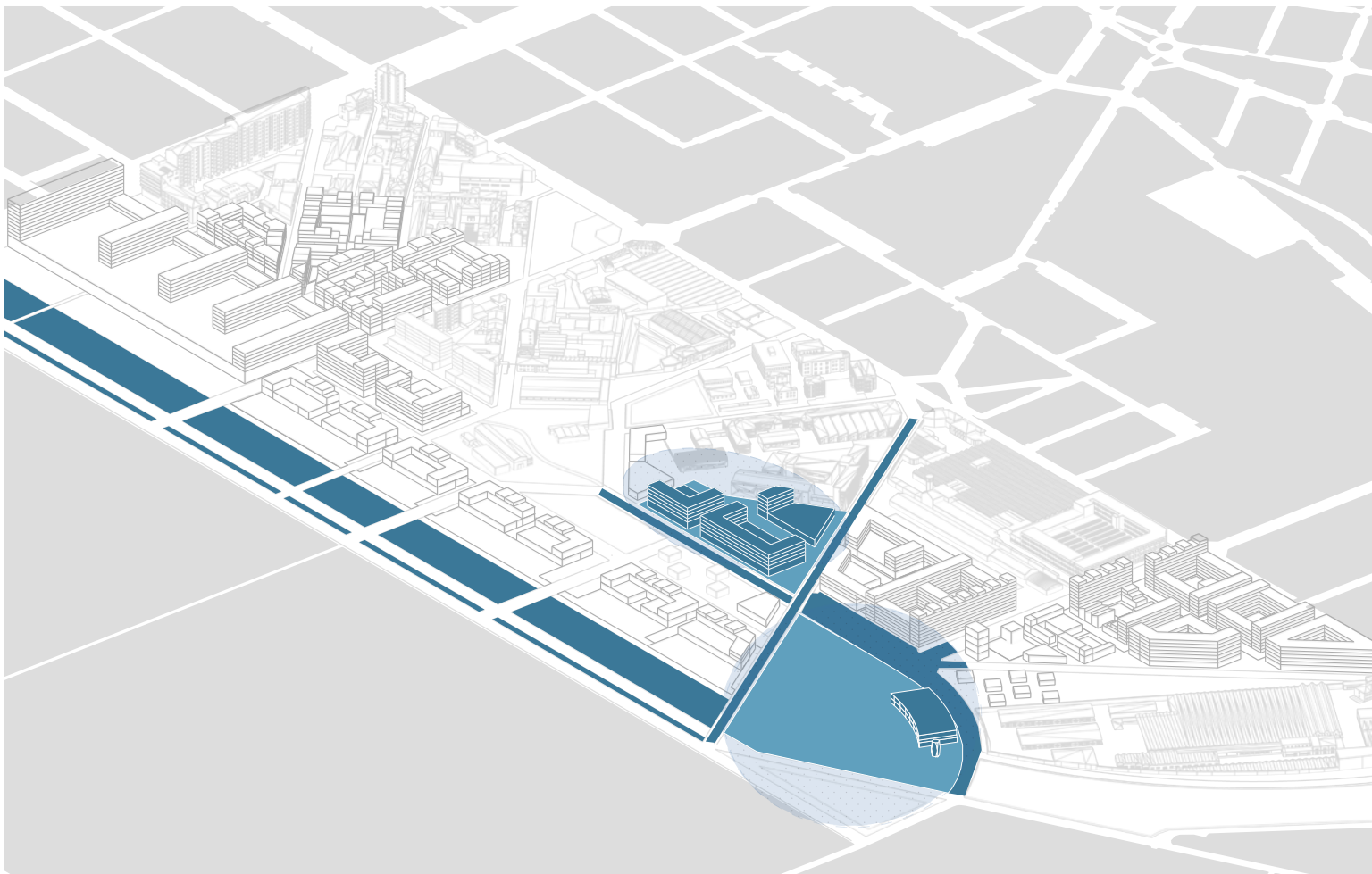
1. 'Made in Torino' Brand
2. Mercato Regio Parco
3. Builders Hub

MOBILITY INTERVENTIONS

- Approve the New Integrated Street Plan and begin creating allowance for flexibility
- Approve regulations for new speed limits
- Approve regulations for accessible streets
- Introduce street furniture and plantings near Phase One catalytic projects
- Pilot app of integrated transport system (transit lines, parking and renting bikes and scooters)

OPEN SPACE/SUSTAINABILITY INTERVENTIONS

- Build out the stormwater capture and treatment system that runs through the canal on the southern edge of the site and flows through the Mercato Regio Parco
- Plant a native species botanical garden in the Mercato Regio Parco
- Install a smog-free tower at the Mercato Regio Parco plaza
- Install green infrastructure along the green corridors and smaller-scaled green infrastructure throughout the site as areas are developed (see Green Infrastructure types pg. 168-169)



Phase One activation example ▲

POLICY INTERVENTIONS

- Create incentives for manufacturers to start moving into the site
- Form partnerships with manufacturers and companies to sponsor entrepreneurs in the Builders Hub
- Establish policy structures that require new developments to invest in public space in the site
- Apply for funding for smog-free tower through sustainable technology programs such as the European Union's Urban Innovation Actions Initiative

EXPECTED RESULTS

- + Conditions and foundations are established for the new uses to come .
- + The unused land by the old post office is revitalized and transformed into a new entrance and anchor for the site.
- + Widespread excitement and interest is generated by leveraging the green infrastructure interventions and the Builders Hub.

2 IMPLEMENTATION PHASE TWO

Attract an Industrial Network

The goal of the second phase is to establish strong industrial infrastructure in order to attract manufacturers and industrial activity onto the site.

CATALYTIC PROJECTS

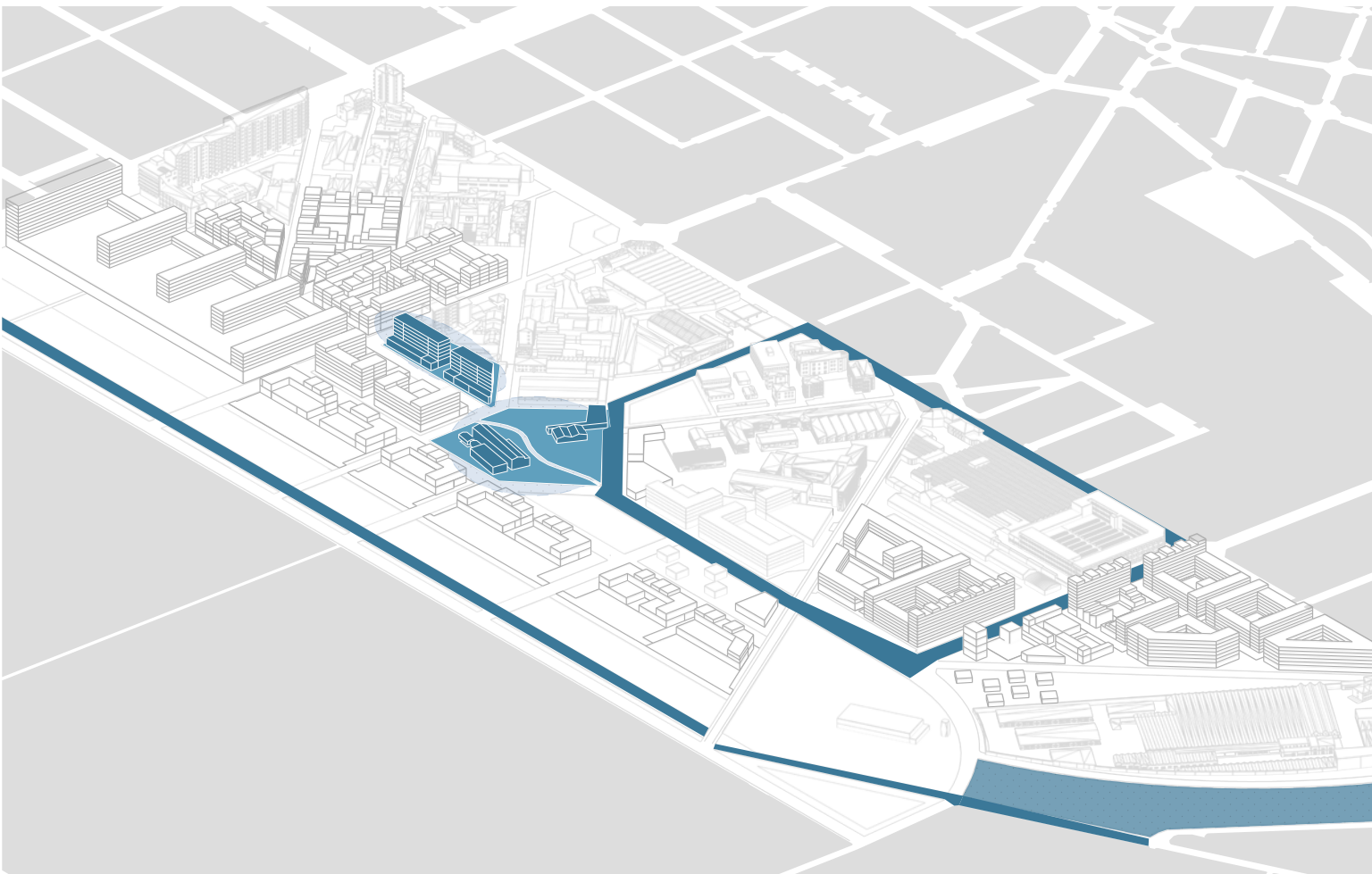
1. ManufacTorino
2. Bunker Park

MOBILITY INTERVENTIONS

- Establish new freight service road with direct access to the industrial buildings
- Build out a street network according to the approved regulations
- Implement new signage aligning with the 'Made in Torino' brand
- Extend bus line 2 into the site
- Reallocate street space to walking, biking and transit

OPEN SPACE/SUSTAINABILITY INTERVENTIONS

- Continue installing green infrastructure (see Green Infrastructure types pg. 168-169)
- Build a treated stormwater irrigation system for landscaping and the community gardens
- Implement a site-wide policy that all developed areas must have 10% of the area as permeable, open space
- Plant trees along newly paved roads and developments
- Build parking lots with permeable materials like porous asphalt
- Install infrastructure for a community solar microgrid



Phase Two activation example ▲

POLICY INTERVENTIONS

- Develop incentives for residential projects on site
- Begin forming a Business Improvement District to fund and organize maintenance of shared infrastructure and spaces

EXPECTED RESULTS

- + Industries start moving into the site.
- + The center of Regio Parco becomes more lively and activated with programming.
- + Stronger connections are forged within the site and with the greater neighborhood.

3 IMPLEMENTATION PHASE THREE

Bring the Community Together

The last phase serves as a site consolidation strategy by providing diverse services to bring together a diverse community. This phase will catalyze the residential growth of the site and the surrounding areas.

CATALYTIC PROJECT

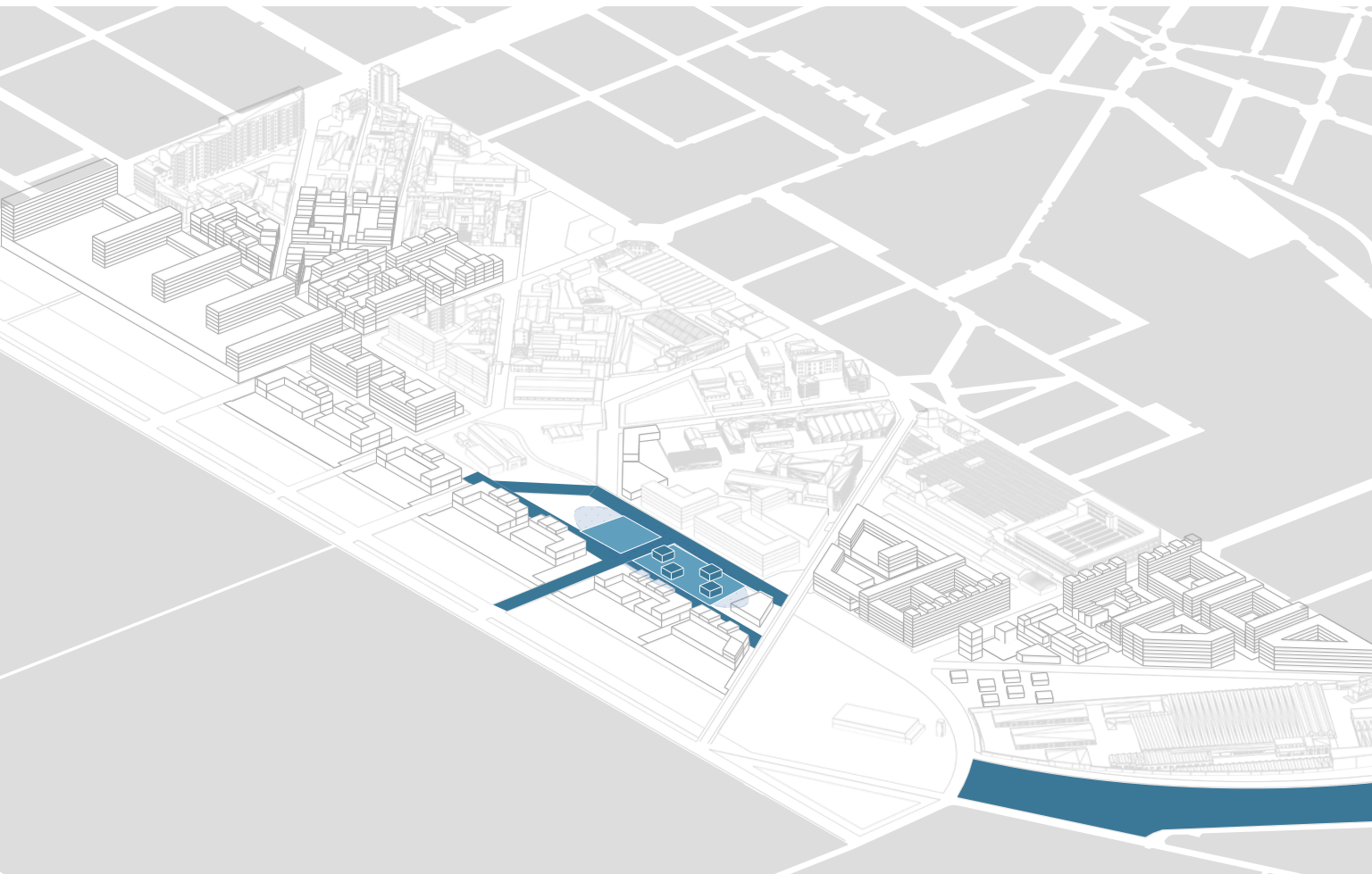
1. Casa Regio Parco

MOBILITY INTERVENTIONS

- Implement innovative street technologies (traffic lights, lighting, charging stations, smart meters, outputs in bus stations and sidewalks)
- Activate streets through events during off-peak traffic hours

OPEN SPACE/SUSTAINABILITY INTERVENTIONS

- Grow the Business Improvement District to finance maintenance of green infrastructure
- Integrate a youth green infrastructure maintenance training program as a long-term sustainability and community engagement strategy
- Establish the community garden program in the northeast linear park



Phase Three activation example ▲

POLICY INTERVENTIONS

- Establish partnerships between local residents, potential non-profit organizations, and the city to fund the urban agriculture on site
- Partner with urban technology entrepreneurs to test and incorporate smart street tech

EXPECTED RESULTS

- + Usage of the site is further diversified through business opportunities and community services.
- + Nearby residents engage more with programming and commercial activity on site.
- + New residents start to move into the Regio Parco housing areas.

Environmental Sustainability

Introduction

As we imagine a new vision for Parco Regio, a key overarching principle that must be woven into every aspect of the site's planning and design is environmental sustainability. Regio Parco should be a site that tackles the pressing issues of climate change, air pollution, water resource management, and more, to serve as a model for future sites in Torino.

Changes should be implemented at the site, lot, and building levels to achieve maximum sustainable results. This can be done through site-level infrastructure and land use design, lot and building-level choices by developers, and cross-cutting policies that apply at all scales.

Regio Parco should not only strive to become an exemplary model that minimizes its environmental footprint, but also a testing ground for new technologies and approaches that can grow Torino into a hub for the emerging green economy.

Goals

Targets



CLIMATE RESILIENT

- Lowered greenhouse gas (GHG) emissions
- Increased capacity for climate stresses
- Economic growth through green industry



INTEGRATIVE WATER MANAGEMENT

- Flood risk mitigation
- On-site water capture for runoff pollution
- Low wastewater fees
- Reduced load to central wastewater treatment plant



INNOVATIVE GREEN TECHNOLOGY

- Experimental sustainability technology
- Green industry and green investment
- Students and young talent population



NET-ZERO ENERGY USAGE

- An advanced building retrofit industry that leverages Energiesprong
- Low utility costs for residents
- Public engagement and education



HEALTHY LIVING

- Abundant green space per capita
- Branding image of an innovative maker city
- Frequently monitored air and water quality



REDUCED & REUSED WASTE

- Circular consumption patterns
- Reuse/recycling programs
- Low waste output
- Incentives to experiment and innovate with waste material

Policy Considerations

Innovation, public health, climate change mitigation, and adaptation are interrelated elements that influence each other. Goals such as net-zero energy consumption, integrated water management, and a circular waste-production system must take a multi-perspective and holistic strategic approach that involves initiatives for business changes, behavior shifts, financial incentive nudges, and policy regulations.



Guiding Principles



CLIMATE RESILIENT

Torino is not immune to the risks of climate change, including higher temperatures and increased flooding. As much as climate change poses a challenge, it also offers Torino the opportunity to become an exemplary city in tackling the oncoming problem.

To stay competitive in the evolving global economy, Torino must take more committed action in global efforts, such as Milano's participation in the C40 initiative.



INNOVATIVE GREEN TECHNOLOGY

Parco Regio should not only implement best sustainability practices, but should work to develop new products and technologies that address issues like climate change, pollution, water management, and waste.

This is an opportunity to embrace the identity of a bold and innovative city to foster new local industry with huge growth potential.



HEALTHY LIVING

Torino faces a huge air pollution problem that negatively impacts its residents. Parco Regio can embrace energy efficiency, renewable energy, and new technologies for near net-zero levels of emissions.

The site can also improve public health by providing open and green spaces that decrease air pollution, mitigate urban heat island effect, provide space for physical activity, and beautify the area. Health benefits include easing respiratory health issues, reducing risk of heatstroke, increasing levels of exercise, and supporting mental health and wellness.



REDUCED & REUSED WASTE

Mass consumption causes environmental degradation when raw materials are extracted, processed, and polluted into the landscape. This does not have to be the "normal". Regio Parco can push back on this consume-and-discard model by minimizing waste through circular production efforts.

Furthermore, as a maker city, Torino can push the envelope to become a center for sustainable manufacturing that recycles and reuses materials. The current model of production is not sustainable in the long-term and new production methods and ideas must be advanced.



INTEGRATIVE WATER MANAGEMENT

Regio Parco should employ a holistic and integrated approach to water resources management. This includes stormwater capture and reintegration, as well as wastewater reuse to minimize freshwater demand, mitigate flood risk, and reduce runoff pollution from on-site industries.



NET-ZERO ENERGY USAGE

Energy use is the greatest source of greenhouse gas emissions in Torino. Reducing emissions will require significant reduction of energy consumption through increased efficiency and conservation, as well as new technologies and targeted regulations.



Suggested Pathways to Cross-Cutting Environmental Policies

NET-ZERO ENERGY USAGE

Building Construction and Retrofits for Near Net-Zero Buildings

- Replace gas boilers with heat pumps (or a combination module replacing the HVAC)
- Super seal building envelopes
- Install extensive insulation
- Participate in utility demand-response program (if exists)
- Only install LED lights
- Install green roofs

Energy Storage

- Use electric vehicles as energy storage during off-peak hours and feed energy charge back into the grid during peak demand hours
- Install energy storage systems in buildings to retain charge gained from solar panels

On-site Renewable Energy Generation

- Incentivize developers and landowners to install solar panels
- Implement a community solar project on site for companies, users, and residents of the neighborhood

INNOVATIVE GREEN TECHNOLOGY

- Tap into nearby Environment Park companies for emerging technology and prototype testing
- Partner with companies to develop youth training and internship/apprenticeship programs

INTEGRATIVE WATER MANAGEMENT

- Install rainwater capture at all buildings through cisterns and barrels
- Use rainwater capture for on-site irrigation
- Install greywater recycling in all buildings and use water for landscape irrigation
- Use permeable materials for roads and parking lots
- Require 10% of developer land as permeable space for stormwater retention

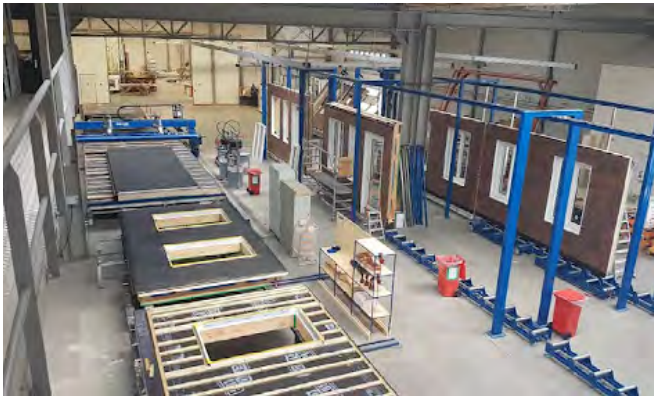
Case Study: Energiesprong

Energiesprong is a program started in the Netherlands to develop scalable approaches to retrofitting residential buildings for net-zero emissions. Energiesprong innovations include prefabricated insulating panels that can be attached to homes and modular structures.

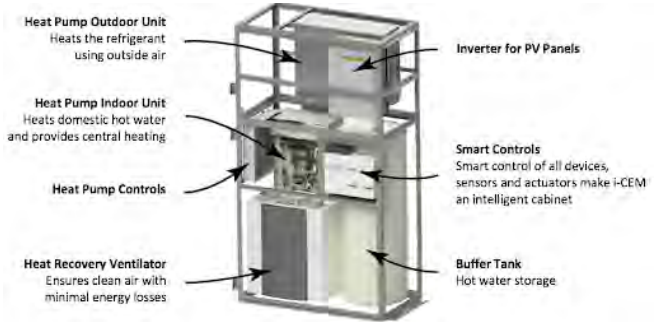
There is now an Energiesprong team in Italy. Torino should actively engage in this program.



▲ *Energiesprong pre-fabricated insulation walls for quick installation* ▶



▲ *Installing pre-fabricated panels on a roof*



▲ *Energisprong pre-fabricated modules systems that contain multiple functions*

Images from US Department of Energy "Prefabricated Zero Energy Retrofit Technologies: A Market Assessment"

Suggested Pathways to Site-Level Infrastructure & System Design

NET-ZERO ENERGY USAGE

- Install a district cooling system using the nearby rivers to complement Torino's extensive district heating system
- Plant trees to reduce building cooling needs
- Implement a community solar project or a solar microgrid on the site

CLIMATE RESILIENT

- Minimize car traffic with new pedestrian paths, bicycle lanes and transit options
- Incentivize use of public transport with special pricing, new routes, etc.
- Paint surfaces (roofs and roads) a light color to reduce urban heat island effect
- Install air purifying infrastructure
- Plant native species for better biodiversity

INNOVATIVE GREEN TECHNOLOGY

- Use the southern canal park as a testbed for new green technology
- Make innovative technology visible and understandable to the public through outdoor educational programming
- Use locations such as parking lots and roads to test experimental technology

HEALTHY LIVING

- Increase tree cover for shade and improved air quality
- Incorporate ample landscaping and greening of streets/buildings
- Require 10% of developer land as open space for sport and recreation

REDUCED & REUSED WASTE

- Partner with on-site scrap metal recycler, Ferraro Metalli, to use recycled materials for infrastructure and building construction
- Retrofit buildings rather than demolishing and rebuilding, when possible
- Reuse material from demolished buildings in new construction, when possible
- Implement an on-site composting system for community gardens and food waste

INTEGRATIVE WATER MANAGEMENT

- Capture stormwater with the southern edge canal
- Reuse treated stormwater for the public fountain, agricultural irrigation, street cleaning, and manufacturing

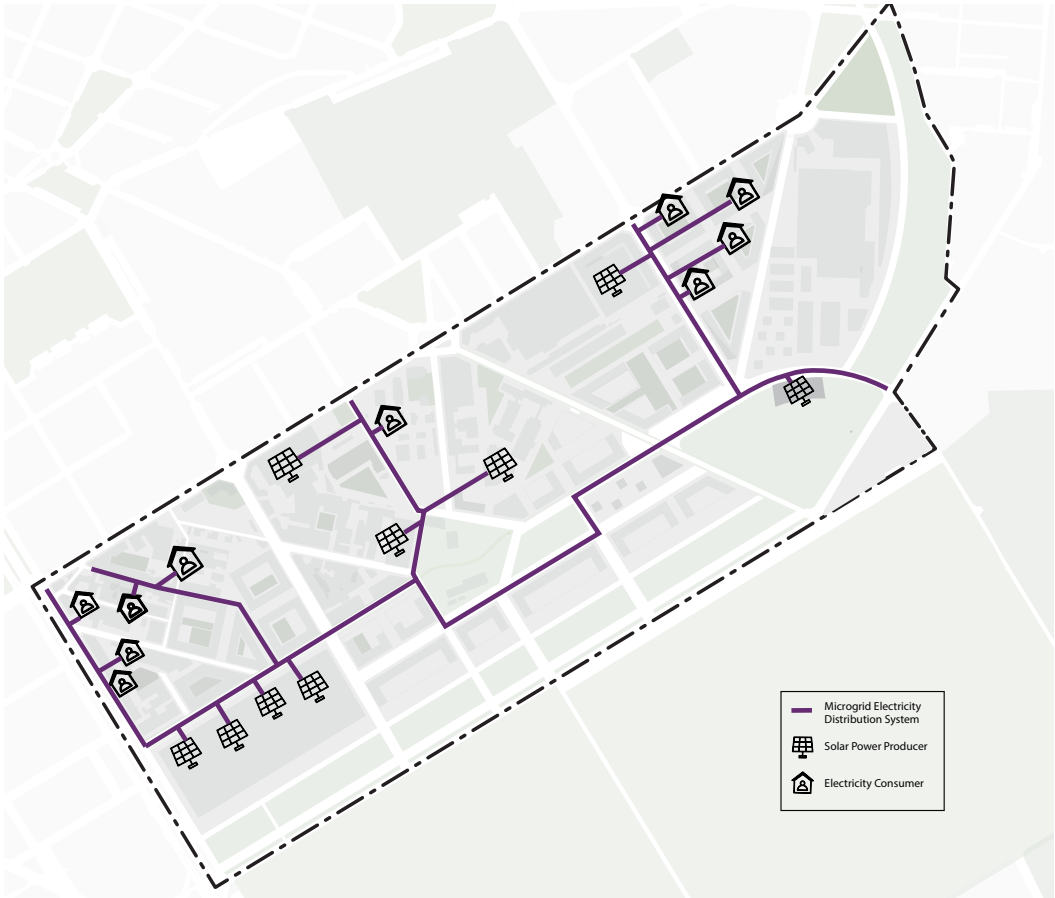
Example: Community Solar Microgrids



Brooklyn Microgrid (at left) is one example of a community-driven microgrid that functions as a peer-to-peer (P2P) local energy marketplace. It is the first energy project in the U.S. that uses blockchain technology to transact energy.

◀ A resident microgrid energy generator.
Image: Brooklyn Microgrid

Below is a conceptual diagram of a community microgrid for Regio Parco. Building owners install solar panels whose energy can be purchased by neighbors. A solar microgrid can lower greenhouse emissions, increase resilience by reducing reliance on the grid, promote visibility of alternative energy, and encourage innovation in developing microgrid technologies in Torino.



Financing and Maintenance Mechanisms

- Implement a stormwater or green fee to maintain systems on-site (or at city level)
- Create a Business Improvement District
- Establish a public-private partnership with local corporates
- Offer free event spaces to site developers in exchange for maintaining open spaces
- Charge a reasonable fee for urban agriculture plots
- Allow selective advertising on site infrastructure such as benches, streets, etc.
- Sell naming rights for pocket parks or areas on the site
- Designate certain green spaces as re-wilding areas that require less maintenance

Targeted Green Industries

- Advanced building construction, including retrofitting engineers and manufacturers
- Energiesprong and similar prefabricated green building initiatives
- Green infrastructure/stormwater management
- Renewable energy parts supply, assembly, and design
- Manufacturers using recycled goods
- Experimental food production

Case Study: Palazzo Italia, Milano

The Palazzo Italia is clad with a smart concrete skin that uses sunlight to absorb and break down air pollutants (smog) and output inert salts. The building, constructed as a net-zero energy structure, employs innovative technology in its design, construction and operation. However, the site is more than only functionally sustainable - as a visual icon of green technology, it also provokes questions and excitement by showcasing to the public new ways to incorporate sustainability in the built environment.



The Palazzo Italia of the 2015 Milano Expo. ▲
Image: Heidelberg Cement

Case Study: Green Mark Incentive Scheme, Singapore



▲ *Buildings at Nanyang Technological University (NTU) received BCA Green Mark Platinum Awards in 2016.*
Image: NTU

Launched in 2005 and revised in 2015, the Singapore Buildings and Construction Authority (BCA) Green Mark Scheme aims to push cities towards more environmentally-friendly buildings, while raising awareness amongst developers, designers, and the public. This benchmarking scheme has provided directional guidelines in a rapidly evolving advanced tech construction industry, and has proven desirable beyond Singapore's borders into other South Asian and Middle Eastern regions.

04

Conclusions

LAND USE & TYPOLOGIES

MOBILITY

OPEN SPACE

CATALYTIC PROJECTS

ENVIRONMENTAL SUSTAINABILITY

Torino's past is rooted in a proud legacy of manufacturing and production. It is this rich history and identity that should be leveraged and built upon to pave a new 21st century vision for the city as a model of industrial remix. Regio Parco, as a former small-scale manufacturing hub, is an ideal site for Torino to start building a foundation for a new type of industrial urbanism that is woven into the urban and social fabric and works with the surrounding natural environment.

This report is our proposal for how Torino can design and build Regio Parco into a dynamic site full of cultural activity, idea exchange, innovation, and manufacturing. Informed by our observation and inspiration in Torino, as well as data-driven research and analysis from Cambridge, we worked to create an urban design framework for Regio Parco that looks toward the future while incorporating the diverse needs and interests of its users.

Conclusions

LAND USE AND TYPOLOGIES

The site plan for Regio Parco includes four industrial typologies: the courtyard block, the tower podium, the industry and distribution center, and the cultural pods. These typologies combine different land uses, referencing historic forms. A variety of typologies and scales is key to attracting new manufacturers and ensuring multiple uses of space.

Flexibility is also what guides the approach to land use. Compatible uses are coupled with adjustable building structures to accommodate different scales of industry. To support this approach, Pixel Zoning offers a percentage range, rather than a strict prescription, of land uses. Mixed-uses in a block or land parcel also increase flexibility and various scales of investment.

MOBILITY

The mobility plan offers a vision for the street system to adapt to future mobility forms. This vision emphasizes pedestrians and human-scale design to make the streets an active and safe addition to the public realm. The New Integrated Street Plan works to complement sustainability measures and allow for social distancing while maintaining an active street. In addition, with the use of smart technologies and intelligent freight, the mobility system gives Regio Parco the opportunity to pilot new mobility innovations.

OPEN SPACE

The open space system works to incorporate the surrounding ecosystems, as well as

create new open spaces that foster a sense of community and reduce the risk of environmental hazards like flooding and heatwaves. The open space scheme includes six concepts that together offer diverse options catering to various populations within Regio Parco. These include a linear park and canal which employ adaptive reuse to activate formerly productive areas, as well as urban agriculture in the form of community gardens, pocket parks for easy access from residents, and green corridors to link open spaces. Together these projects facilitate lively human activity as well as an energy-efficient neighborhood resilient to climate effects.

CATALYTIC PROJECTS

Six catalytic projects are suggested in this plan to anchor the site with vibrant activity and attract industries of various scales to locate in Regio Parco. The catalytic projects embody the vision for the future of Torino. The projects are proposed to be implemented in three stages:

1. Revitalize Regio Parco
2. Attract an Industrial Network
3. Bring the Community Together

Phasing these projects allows Regio Parco to develop incrementally and also provides flexibility as the city builds the site.

ENVIRONMENTAL SUSTAINABILITY

Lastly, a key overarching principle that should guide all efforts is environmental sustainability. Attempts to minimize Regio Parco's environmental impact and connect to the existing natural systems should be made at all

levels and across all scales. Regio Parco should embrace innovation to employ new technologies and approaches to also help foster a local green technology sector in Torino.

Overall, each system in the framework is designed with flexibility to adapt to the dynamic nature of the Regio Parco neighborhood. Together the systems form an urban design framework that leverages Torino's industrial history and uses diverse design techniques to

remix and reimagine the relationship between urban citizens and industry.

It is our hope that Regio Parco can act not only as a welcoming neighborhood to new ideas and technologies, but can also welcome a diverse and growing population. The wealth of creativity and capacity of Torinese, both generations-old and recently arrived, can be applied and celebrated to develop the cultural, environmental and economic potential of this neighborhood.



Sources

(2006). 798 Arts District Vision Plan. Sasaki. <https://www.sasaki.com/projects/798-arts-district-vision-plan/> [Accessed 1 June 2020]

(2008). Washington Mills Building No.1: Preservation Award. Lawrence History Center. www.lawrencehistorycenter.org/node/225 [Accessed 1 June 2020]

(2019) Envision Cambridge Citywide Plan. Utile Design. <https://www.utiledesign.com/work/envision-cambridge-citywide-plan/> [Accessed 1 May 2020]

Agency for Investments, Export and Tourism (2019) <http://www.centroestero.org/en/about-us.html>

Casa del Quartiere di San Salvario. <http://www.casadelquartiere.it/> [Accessed 1 June 2020]

Clark, Greg et al. (2018). Turin's Competitiveness. Urban Land Institute.

Cockrell, D. (2019). New renderings give glimpse of Tacoma's future Brewery Blocks. <https://www.thenewtribune.com/news/local/article224933605.html> [Accessed 1 June 2020]

Eugene, Oregon City Government. Industrial Zones. <https://www.eugene-or.gov/DocumentCenter/View/15474/Existing-Code-92400-Industrial-Zones> [Accessed 1 June 2020]

Gardener, S. (2014). LA Smog: the battle against air pollution. Marketplace. <https://www.marketplace.org/2014/07/14/sustainability/we-used-be-china/la-smog-battle-against-air-pollution/> [Accessed 1 June 2020].

Gilardi, Rosa. (2015). Piano Particolareggiato "Regaldi" in Variante al P.R.G. http://geoportale.comune.torino.it/web/sites/default/files/mediafiles/elaborato_02_variante_urbanistica.pdf [Accessed 1 June 2020]

Global Power Index (2019). Mori Memorial Foundation. <http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml> [Accessed 15 May 2020]

Ian, L., 2020. Why We No Longer Recommend A 40 Percent Urban Tree Canopy Goal - American Forests. [online] American Forests. Available at: <<https://www.americanforests.org/blog/no-longer-recommend-40-percent-urban-tree-canopy-goal/>> [Accessed 12 May 2020].

Italian National Institute of Statistics. <https://www.istat.it/en/> [Accessed 1 June 2020]

Landscape Performance Series. 2020. Shanghai Houtan Park. [online] Available at: <<https://www.landscapeperformance.org/case-study-briefs/shanghai-houtan-park>> [Accessed 13 May 2020].

Lanificio di Torino. <https://www.lanificioditorino.it/> [Accessed 1 July 2020]

Larsen, L. (2018). Despite the inversion, Utah's air is actually better than it used to be. Standard-Examiner. https://www.standard.net/news/environment/despite-the-inversion-utahs-air-is-actually-better-than-it-used-to-be/article_4067b19b-8703-52f9-93f5-5c75def953d8.html [Accessed 1 June 2020].

Legambiente. (2019). Il Clima e già cambiato: Rapporto 2019. www.legambiente.it/wp-content/uploads/2019/11/Il-Clima-e-gi%C3%A0-cambiato-2019.pdf

Mazzotta, Alessandro and Guglielmina Mutanib. (2015) IBPC 2015 Environmental high performance urban open spaces paving: experimentations in Urban Barriera (Turin, Italy). ScienceDirect Energy Procedia 78 (2015) 669 – 674 6th International Building Physics Conference

Past Project: Washington Mills Building No 1. Architectural Heritage Foundation. <https://www.ahfboston.com/projects/washington-mills-building-no-1/> [Accessed 1 June 2020]

Piedmont Statistical Yearbook

Power, Anne (2016). Torino City Story. CASEreports (106). Centre for Analysis of Social Exclusion, London School of Economics and Political Science, London, UK.

Power, Anne. (2016). Torino City Story. LSE.

Public Baths of Via Aglie, Casa del Quartiere di Barriera di Milano. <https://bagnipubblici.wordpress.com/> [Accessed 1 June 2020]

Rudra, S. (2018). A Prague Food Market Spans the Globe. The New York Times. <https://www.nytimes.com/2018/08/18/travel/manifesto-market-prague-review.html> [Accessed 1 June 2020]

Russo A, Cirella GT. (2018) Modern Compact Cities: How Much Greenery Do We Need?. Int J Environ Res Public Health. 2018; 15(10): 2180. doi: 10.3390/ijerph15102180

Saval, N. (2017). The Ghosts of Turin. New York Times. <https://www.nytimes.com/2017/05/10/t-magazine/travel/turin-italy-art-carol-rama-carlo-mollino-castello-di-rivoli.html> [Accessed 1 January 2020].

Tappi, A. (2019). A closer look: Italy's venture capital ecosystem. <https://www.linkedin.com/pulse/closer-look-italys-venture-capital-ecosystem-alessandro-tappi/> [Accessed 1 June 2020]

Vanolo, Albert. (2014). The image of the creative city, eight years later: Turin, urban branding and the economic crisis taboo. Cities 46, 1-7. <http://dx.doi.org/10.1016/j.cities.2015.04.004>



In 2020, a team of graduate students at the Massachusetts Institute of Technology (MIT) and Politecnico di Torino (PoliTo) collaborated to envision, plan, and design an industrial remix development prototype for the Regio Parco district in Torino, Italy. This report describes the team's examination of the district and proposes a plan for the area's future development. While the proposals are specific to the challenges and opportunities within Regio Parco, the process was intended to generate approaches that could be adopted in other locations. It is our hope that this document will be useful to guide redevelopment initiatives in other cities.