

PERMEABILITIES

2024

HARVARD URBAN REVIEW

EDITOR'S NOTE

Permeabilities - 2024

We are thrilled to present the exceptional work of this year's contributors in Harvard Urban Review: Permeabilities.

Though an oft-discussed subject in urbanism, permeability tends to refer to narrow definition and specific context: water-permeable surfaces in urban environments dominated by concrete and asphalt. Yet, the concept holds far greater potential. At its core, permeability is about movement across boundaries, a framework through which we can understand some of today's most pressing urban challenges. Development creeps into natural spaces. Borders and infrastructure create hard edges restricting the flow of people, determining a city's, state's, or country's openness. And of course, as climate change continues to escalate in both intensity and frequency, the demand for more permeable urban spaces pushes us to reconsider the impervious nature of modern cities.

In this issue, our authors delve into the many facets of permeability, from environmental design to social dynamics, inviting us to rethink the ways we understand and shape urban environments. After all, ideas themselves are permeable, too—they can spread, challenge, and transform.

As we reflect on the content in Permeabilities, we also want to share an exciting update: the Harvard Urban Review will be undergoing a name and design change for our next edition. Stay tuned to our website for details on this new chapter.

We hope you enjoy this year's issue and join us in the ongoing exploration of urban permeability.

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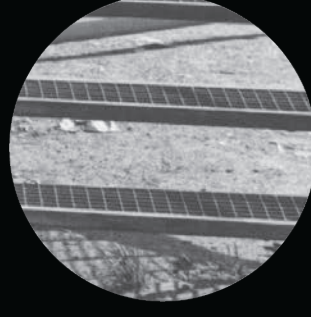
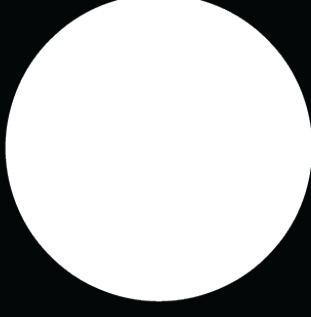
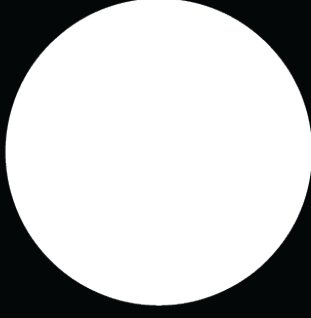
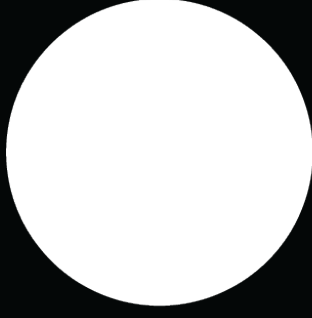
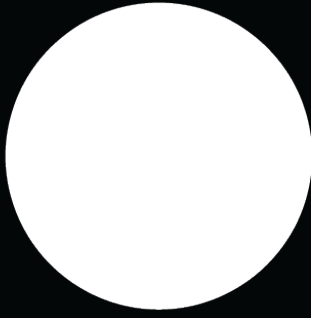
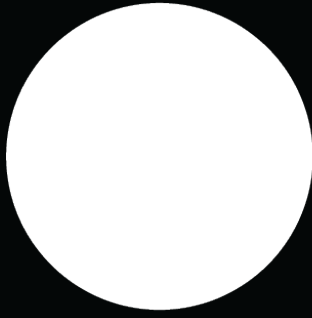
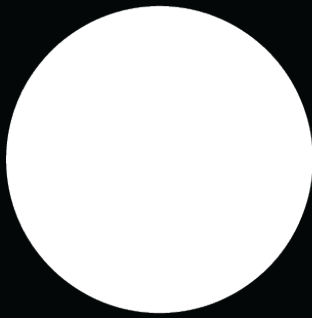
Founded in 2018 by Master in Urban Planning students at Harvard Graduate School of Design, Harvard Urban Review serves as a platform for innovative thought in urbanism. Our journal brings together the work of students, practitioners, and researchers across planning, design, and architecture, offering diverse perspectives on the most pressing issues in urban planning today.

With a commitment to fostering interdisciplinary dialogue, we publish work in a range of formats—encouraging the exploration of new ideas that push the boundaries of urban design and planning. Our goal is to not only reflect the current discourse but also to shape the future of cities through the integration of cutting-edge research and practice.

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Viewing platform at Checkpoint Charlie. Source: Landesarchiv Berlin, 1968.

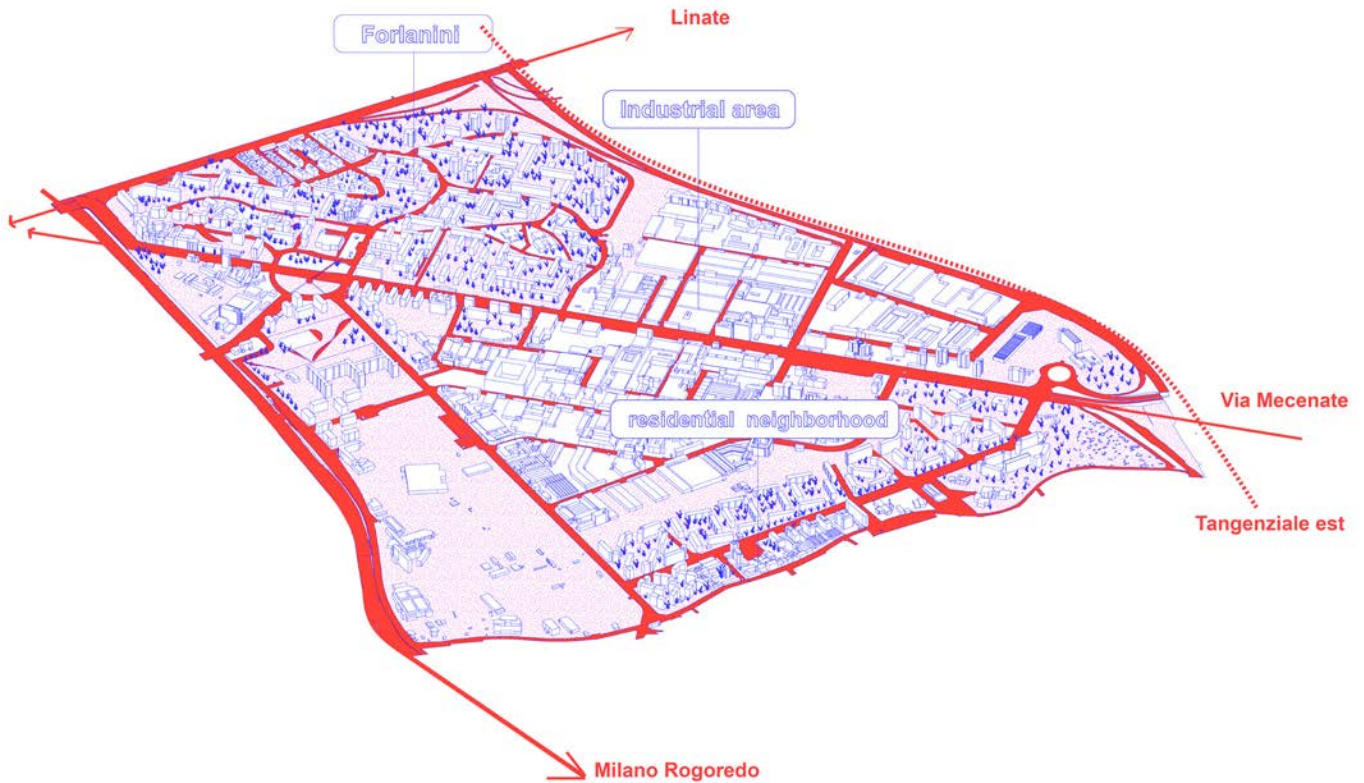


Fig. 1: Overview of the Forlanini-Taliedo neighborhood. Source: Authors.

Porous + Bioclimatic

Envisioning Futures for Milan's Forlanini-Taliedo

Cecilia Cempini, Mariana Pereira Guimaraes (MUP/MPH '19), Pablo Gamboa, and Valentina Dall'Orto

In Italy, the “periferia” refers to the outer city, the suburbs, the urban fringe, and the peri-urban: it sits between what is known as the countryside and the historic and well-defined urban core. (This is not an exclusively Italian phenomenon—most Europeans live in such territories, and several new large-scale urban developments occur in these areas.) However, simply labeling this complex region as “fringes” masks the myriad political, environmental, and social debates they contain and represent (Foot, J. 2010, p. 8). The notions of “fragile” and “anti-fragile” as initially proposed by Taleb (2012) and Aven (2015) and then applied to the planning, design, and policymaking of cities and territories (Chiffi and Curci, 2024), Chiffi and Moroni (2021) and Shearer et al. (2021) help characterize the Italian peripheries, especially in Milan. The term “fragile” underscores the areas’ vulnerability, due to their socio-spatial inequalities (Commissione Periferie, 2017). “Anti-fragile,” in contrast,

suggests their potential to adapt and thrive in the face of uncertainties, whether economic or environmental, and whether in the short or long term.

Milan’s East Fringe is a vast zone with unique characteristics. It stretches from Via Palmanova in the north to Via Rogoredo and San Donato Milanese in the south, and is almost entirely trapped between significant transportation infrastructures. To the west, the railway ring cuts the area off from the city core. To the east, the highway Tangenziale Est (A51), the Lambro River, and Linate Airport separate the fringe from its rural neighbors. Despite its isolation and apparent abandonment, however, this urban strip holds immense potential for transformation (Cozza, 2023). This design research aims to outline a possible future for this post-industrial periphery.

With an abundance of vacant spaces without a defined use, the East Fringe exemplifies var-

ious contemporary issues around delineating, interpreting, intervening in borders, and urban porosity. In this context, “porosity” denotes the extent to which borders permit the movement of people, goods, and ideas. The idea of porosity is not just a theoretical construct but an urgent practical strategy for transforming borders, which are more than merely physical and represent a range of limits and discontinuities. Borders can play dual roles: as zones of contact or conflict, gateways or barriers, facilitators or inhibitors of exchanges (Hauser et al., 2021; Jovchelovitch et al., 2020) We posit that interventions at various scales, from city planning to

architecture, can convert these vulnerabilities into opportunities for change.

QUARTIERE FORLANINI-TALIEDO

While a macro view of the East Fringe exposes some important issues (and possibilities), a more detailed examination at the neighborhood scale is crucial. The size and diversity of the area’s residential blocks prevent them from forming self-contained neighborhoods with essential services and infrastructure. Roughly four districts can be delineated in the entirety of this fringe. Centrally, between Via Forlanini and Via

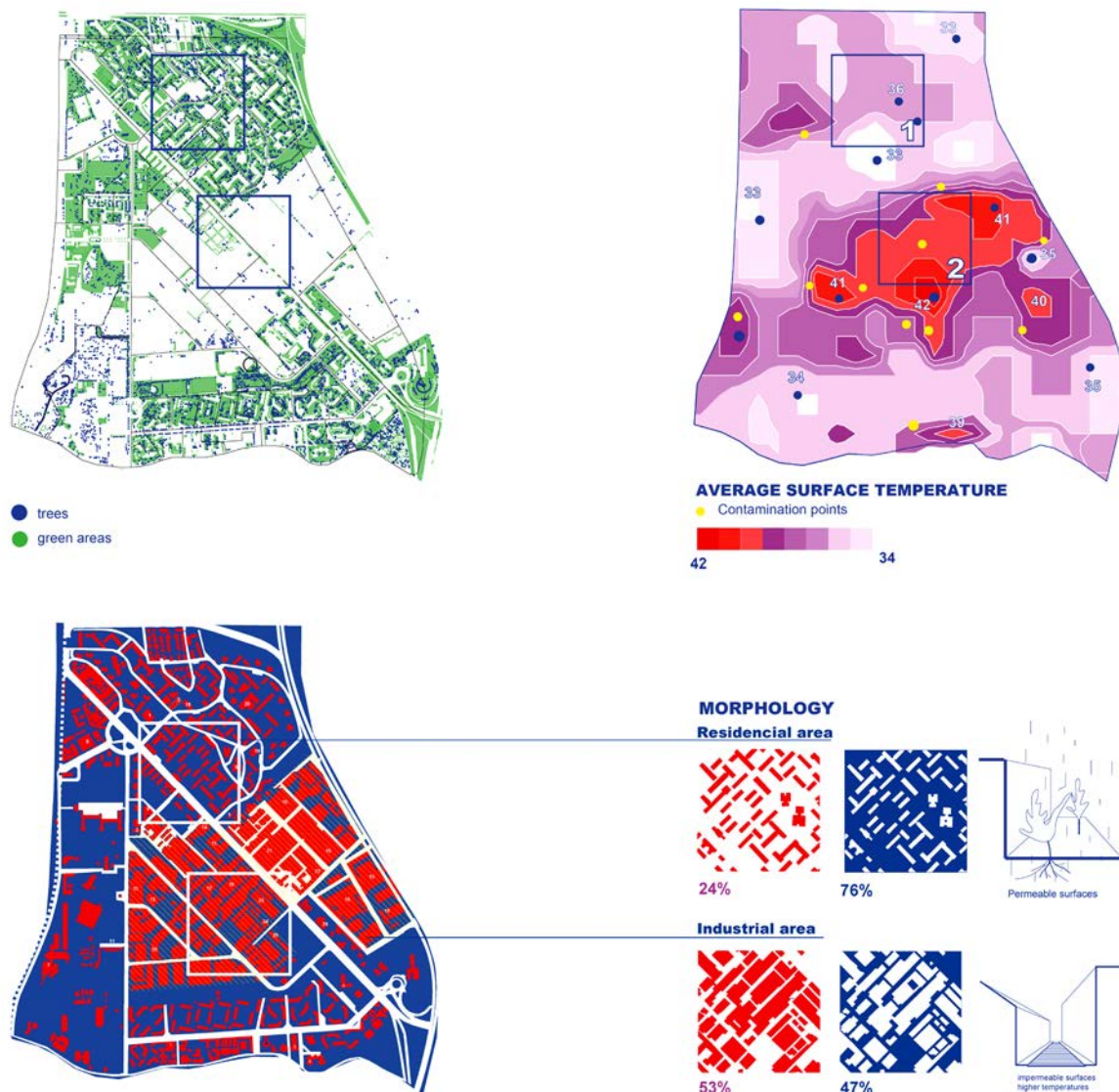


Fig. 2: Environmental and morphological analysis of site. Source: Authors.

Bonfadini, lies Quartieri Forlanini-Taliedo (fig. 1), characterized by disused industrial buildings, 1960s social housing (Ferrante, G. et al. 2005), new developments in the south, and entertainment services like nightclubs in former warehouses. The neighborhood's most significant issue is that the 1910s industrial zone at its core is hotspot, as shown in Milan's Urban Heat Island (UHI) mapping analysis of surface temperatures (Milano Geoportale, 2016). Urban heat mitigation presents an exciting challenge, perhaps providing a regeneration model for similar areas (fig. 2). The proposal includes specific design actions to address these fragilities and opportunities, such as greening the industrial zone and creating new connections between the city core and the countryside.

The Taliedo area has undergone significant transformations since 1910, when the Italian government built an airfield to host the International Air Circuit. The complex was later used as a military airport and aviation school before being decommissioned in 1938 (Apostolo and Pagliano, 1998). The presence of the airport led to the area becoming predominantly industrial, with sparse residential zones. Consequently, the area suffers from internal physical fragilities, such as disconnection due to extensive industrial buildings, degradation of the abandoned warehouses, lack of pedestrian infrastructure, high built-up density, and excessive paving. The re-

maining buildings have tall brick facades, metal roof coverings that absorb and radiate heat, and narrow alleys that hinder air circulation. The scarcity of trees and other vegetation also exacerbates heat concentration. The neighborhood urgently needs thermally comfortable public spaces to foster social interaction. This proposal aims to honor this rich history while addressing the current challenges and opportunities.

FRAMEWORK: POROSITY

In response to the issues pointed out in figs. 2 and 3, we envision a bioclimatic strategy of adaptive regeneration for this area. To do this, we will put into practice a concept proposed by Richard Sennett in *Open City* in 2010: “a cell membrane,” Sennett writes, “is both porous and resistant at the same time, holding in some valuable elements of the city, letting other valuable elements flow through the membrane” (Sennett 2010, 9). This concept, which derives from a master planning strategy, is put into action in a multiscale vision that moves from a general analysis of the entire urban fringe to a medium-scale analysis of the Taliedo area to a detailed analysis of specific conditions in buildings and public spaces (fig. 3).

A material with low porosity is compact and rugged, closed and enclosed within itself, much like as the urban fabric of Taliedo's industrial area. A porous material is openly permeable, and

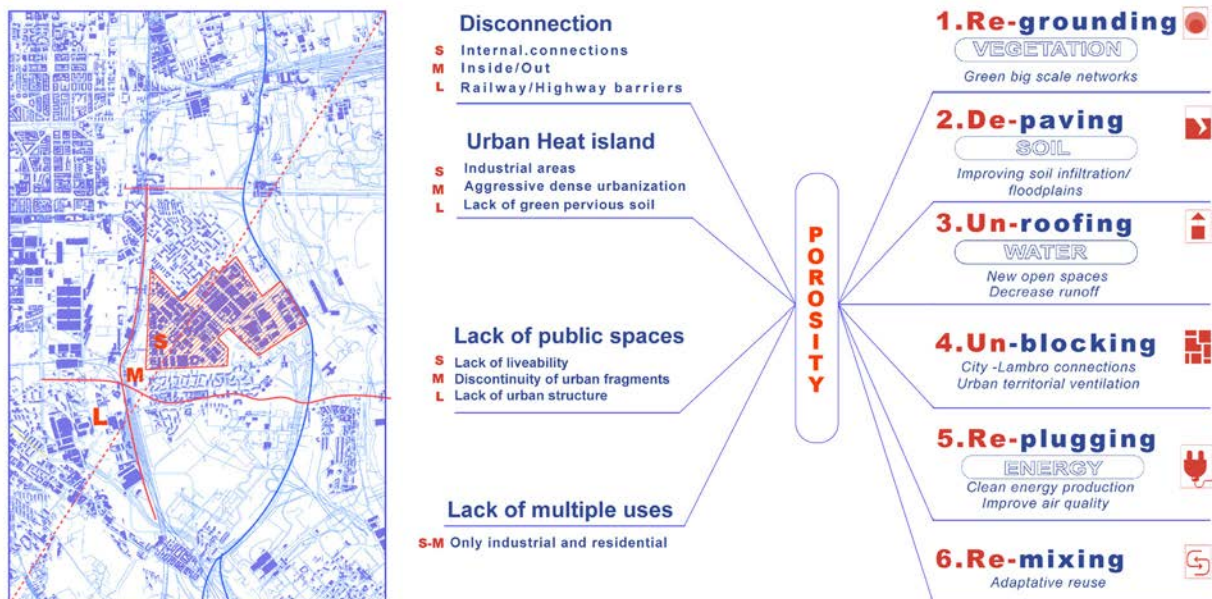


Fig. 3: Porosity framework for understanding existing issues and proposed design actions. Source; Authors.

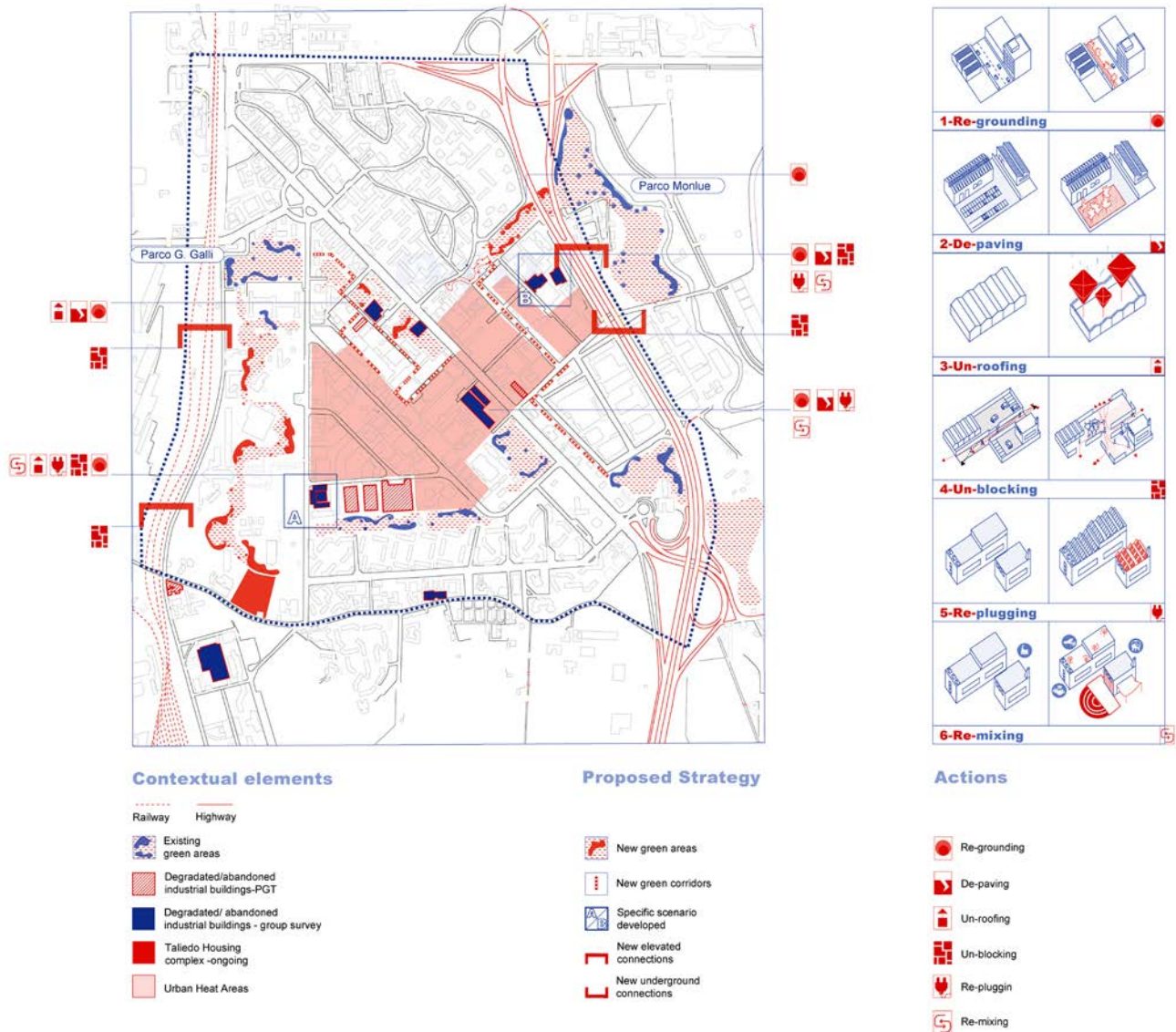


Fig. 4: Proposed strategies and design Actions. Source: Authors.

able to relate its interior with its exterior. Porosity as a strategy (Viganò et al. 2016, 223) seeks, in a physical sense, to open space between things, to strengthen connections between interiors and exteriors, to link separate landscapes (Weilacher 2018, 231), and to allow multiple and variable land uses (Dona 2018, 166) that can “bring the city to the factory” (Rappaport, 2019). Hence, architectural and urban interventions use porosity as an overarching strategy to foster varied spatial and social contexts within the urban landscape. It advocates for mixed, autonomous, and sustainable utilization of communal spaces, aiming to shape a vibrant and diversified district.

METHODOLOGY: THE TRI-SCALE APPROACH

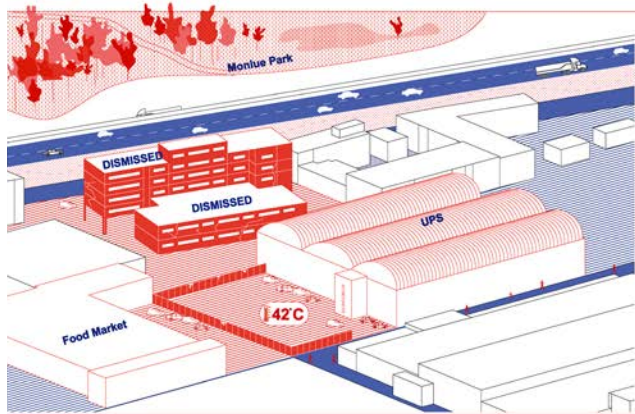
A multiscalar approach is crucial to addressing the different issues in Taliedo. At the metropolitan scale, the main opportunities to mitigate isolation include enhancing connections along the railroad, constructing a new train station near Taliedo, establishing the new subway station north of Forlanini, and building underpasses and overpasses for the A51 highway by Linate's airport. At the neighborhood scale, improving walkability through better pedestrian paths is crucial. However, these connections cannot spark transformation without actions to increase soil permeability, lower local temperatures, and create livable public spaces during sweltering

summers (fig. 4). Small-scale adaptive reuse can capitalize on large industrial spaces to introduce new services, stimulating regional regeneration (Baum & Christiaansen, 2012).

The UHI phenomenon is an environmental issue that must be tackled in tandem. Although observable at the city scale, UHI mitigation can only be addressed at the architectural scale through local solutions such as green roofs and green walls, as Sofia Dona poses in the text “Moving from the Macro to the Microscale in the Anthropocene” (2018). These solutions must be multifunctional and address flooding, lack of livability, and disuse. Additionally, they must be integrated into a more significant planning strategy incorporating green corridors, as in Milan’s 2030 Piano di Governo del Territorio (CITATION). These plans can guide a more efficient placement of these interventions, creating

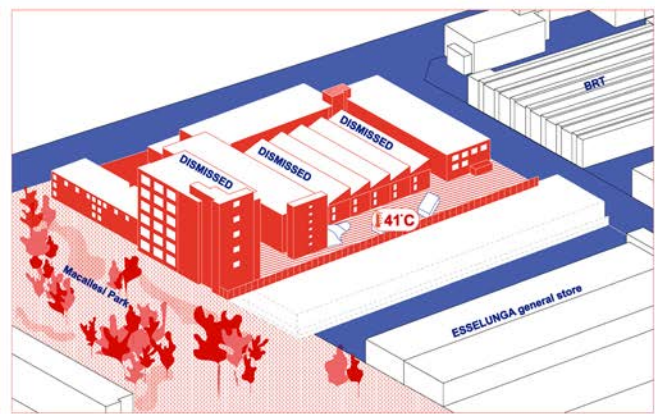
openings, or pores, for green public spaces.

In sum, the methodology follows a tri-scale approach and aims to achieve a bioclimatic urban regeneration by increasing porosity. It first identifies the main social and environmental problems of the area at multiple scales, then envisions a design that uses punctual actions to promote an adaptive transformation of the site (fig. 4). The abundance of abandoned industrial structures is a defining characteristic of the area, prompting strategies that prioritize post-industrial revitalization. Key objectives include repurposing these buildings and adjacent public areas at various levels, with former factory spaces offering opportunities for energy generation and water storage. Additionally, ground-level transformations aim to establish connections with the existing urban fabric, which is currently characterized by imperme-



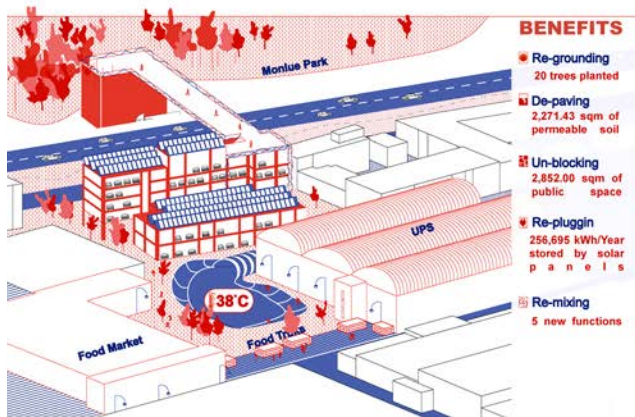
Scenario B

Saturday 20 August- 2020



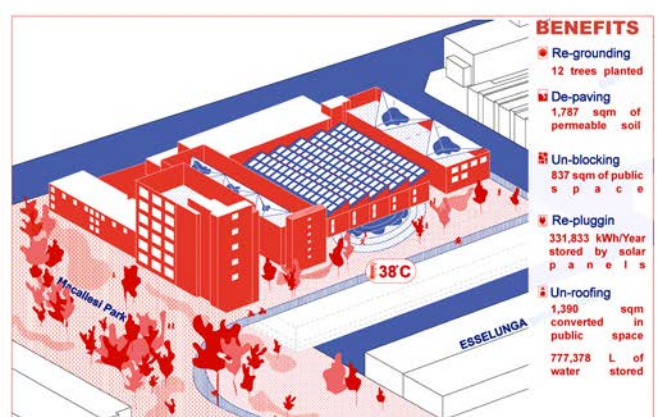
Scenario A

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Scenario B

Saturday 21 August- 2025



Scenario A

Saturday 21 August- 2025

Fig. 5: Scenarios A and B Depicting the Current Situation and Post-Design Interventions. Source: Authors.

able surfaces designed for vehicular traffic. Diversifying functions within the area will foster the development of urban life and a cohesive social fabric, a principle endorsed by notable urban theorists like Jane Jacobs, Jan Gehl, and Philippe Panerai.

DESIGN STRATEGY: SIX DESIGN ACTIONS

The local design strategy is framed as a set of six “design actions”: 1) unlocking “locked” industrial areas at different scales to address the problems of disconnection and wind blocking, 2) re-grounding by planting trees to provide shade and alleviate the UHI effect, 3) un-roofing unused industrial buildings to collect and infiltrate stormwater, 4) re-plugging by using solar panels to enable renewable energy in the site, 5) depaving in-between spaces to increase permeability and address lack of public spaces, and 6) remixing to create new multiple uses in an area marked by specific services and industrial uses. These design actions are linked to the Sustainable Development Goals (SDGs 3, 7, 8, 9, 11, 12, 13, and 15). They are distributed at testing sites found in the analysis (A and B) as specific interventions (fig. 5). Initial calculations demonstrate the potential benefits of these interventions.

These micro-scale design actions demonstrate the wealth of possibilities of nodes and networks that can positively transform the whole Taliedo district by making it more porous. The two test sites investigated present a five year transformation plan to shift a “fragile” condition to an “anti-fragile” one. Moreover, tangible results in energy savings, water storage capacity, soil infiltration gains, and the creation of new functions in a short time frame are only the beginning for an area that can then grow more sustainably in the long run.

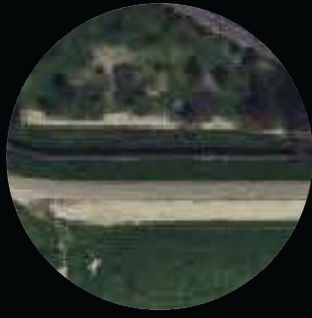
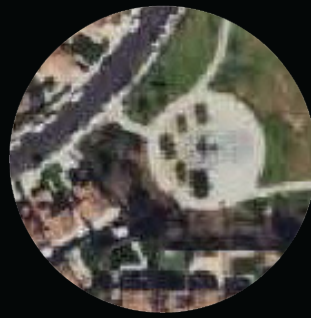
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Images of the U.S.-Mexico border. Source: Risa Sundu.

