

Adaptive Urban Space: Inhabiting the “Third Environment”. An Ethnographic Approach to the Casal Bertone Neighbourhood in Rome

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An adaptive urban space reflects the city's capacity to respond to environmental and social change, promote inclusion and resilience, and support sustainable urban transformation in contexts characterised by historical layering and socio-spatial fragmentation. Through ethnographic research, spatial analysis, and experimentation with nature-based solutions, the contribution examines students' visibility in public spaces and the potential to trigger incremental regeneration processes. The contribution proposes how ecologically oriented

1. Introduction.

Adaptive and Resilient Urban Space

Adapting to the environment is no longer optional but an urgent imperative in response to the challenges that cities and territories must face due to the impacts of climate change, with increasingly evident consequences for our

lands, our cities, and our heritage (IPCC 2022; EEA 2020). The conditions of ecological uncertainty and severe biodiversity loss, which equate to the loss of a vital balance necessary for survival, therefore require experimenting with spatial practices capable of accommodating new shared environmental systems in foreseeable future scenarios, responding to ecological rhythms rather than fixed boundaries, and prioritising coexistence, resilience, and continuity (Morton, 2018).

and socially inclusive interventions can transform marginal areas into shared environments that strengthen a sense of belonging, reduce inequalities, and increase urban resilience. Interpreting public space as an inclusive process highlights the possibility that adaptation is a socio-spatial practice necessary for a "just transition".

These conditions demand an adaptive approach to design, no longer defined by a static form but by the ability to act as a relational and ecological mediator, and to experiment with transferable methodologies that address diversity, not as a limitation but as a driver of ecologically oriented design based on structured protocols around transcalar procedures adaptable to different ecological contexts (Corner, 1999; Secchi, 2013; Carta, 2014).

Adaptation is therefore not just a response to change but a fundamental skill for proactively addressing socio-environmental management processes across various contexts and ecosystems. These processes have evolved from traditional conservation models to more integrated, adaptive, and participatory frameworks that emphasise sustainability, resilience, and equity (Folke et al., 2010). Adaptation is a dynamic dimension in which interactions and transitions serve as a conceptual and methodological framework applicable to various contexts, available to communities, and responsive to the inevitable change of inhabiting space. This new design dimension thus becomes a 'laboratory'

for experimenting with regenerative forms, interpreting 'limits' as 'opportunities', and imagining new urban metabolisms in an ecologically and socially creative way, where the role of adaptive design constitutes a spatial device capable of integrating risk management, environmental quality, and social innovation. The SDGs 2030 (UN, 2015), the Biodiversity Strategy (EU, 2020), and recent Climate Adaptation Plans outline the role of cities in restoring value and multifunctionality to environmental systems and in enhancing their capacity to reduce the urban ecological footprint. Yet urban spaces still struggle to reclaim their status as common goods, capable of operating across scales to restore inclusivity, proximity, and flexibility, thereby fostering the construction of a "just transition" understood as the balanced integration of the environmental, social, and economic dimensions of sustainable wellbeing (Costanza et al., 2016). This concept is intended not to establish a single definition of justice for transition, but rather to integrate these perspectives into a coherent framework. This alignment is essential to increase public understanding, acceptance, and engagement in the transition process (Heffron, 2021) and requires translating its principles into concrete public policy instruments that can operationalise them within specific territorial contexts.

Sustainable, just, and equitable development fosters urban resilience and reflects the social, economic, and environmental capacity to face

adversity and prosper over time, not only by responding to adverse events such as natural disasters or economic crises but also by addressing long-term challenges (Walker & Salt, 2006). Resilience, expressed in no fewer than 9 of the 17 goals of the 2030 Agenda for Sustainable Development and explicitly referenced in Goal 11, which aims to make settlements and communities more resilient and inclusive (UN-Habitat, 2016), extends beyond the meaning imported from the sciences that helped shape it (Holling, 1973). Without abandoning the original meaning of resistance to systemic shocks and the preservation of identity amid change, it now also expresses the capacity to implement significant structural changes equitably, inclusively, and sustainably. This transformative dimension of resilience (Giovannini, 2018), which is more than a result but a process, is not only the ability to achieve a goal but, above all, the way of moving towards that goal. Not just a measure of transition but being in transition, in a transformative dimension that expresses not only the capacity to bring about persistent structural changes but also to ensure that these changes occur “in an equitable, inclusive, and sustainable way” (Giovannini, 2021; Boschetti, 2023).

2. Methodology and Approach.

The “Third Environment”

Despite shared international policies, strategies and goals, public participation and collaborative governance are not always treated as

active approaches in European cities (Mahmoud et al., 2025).

In Rome, for example, given the city’s population of over 2.7 million, adopting an approach aligned with the Biodiversity Strategy is fundamental, aiming to apply a co-design urban approach to regenerate common urban areas that have lost their identity and configuration. For this reason, the contribution focuses on an experimental approach that relies on increasingly close integration and interaction among different subjects, conceived and governed in an equally innovative and experimental way to be truly effective. Building on prior research into student invisibility, perceptions of common space, and heritage integration in public space (Cozza, Seyedabadi, 2024), the study examines how urban forestry, nature-based solutions, and pedestrian-oriented interventions can enhance inclusivity and redefine public space as spatial strategies for addressing socio-spatial exclusion (Sommese, 2024). By combining ethnographic research with spatial and environmental analysis, this study explores how contemporary historical heritage and current needs can be harmonised through design. It proposes a sustainable and inclusive regeneration model, positioning Casal Bertone as a case study for just transmission and for creating the “third environment”. Alongside the theories of “third landscape” (Clément, 2016) and “third place” (Oldenburg, 2001), the “third environment” emerges at their intersection, extending the ecological potential of the former

and the social dimension of the latter into a spatial and adaptive condition. The "third environment" is the space in which to live in a "hybrid" manner, and it can, as an adaptive device, offer multiple levels of enjoyment simultaneously, lending itself to multiple interpretations and uses.

The "third landscape" refers to residual, neglected, or unmanaged urban and peri-urban spaces that escape formal planning and control, thereby serving as reservoirs of ecological diversity. Rather than being defined by function, these spaces are characterised by indeterminacy, openness to natural processes, and the capacity to host spontaneous forms of life. Their value lies precisely in their non-programmed condition, which allows ecological complexity to persist outside dominant systems of production and design (Clément, 2016). By contrast, the "third place" designates informal public settings beyond home and work, where sociability becomes the primary mode of interaction, enabling individuals to engage in non-instrumental, everyday forms of association. These spaces are not defined by function or productivity, but by their ability to sustain spontaneous, inclusive, and relatively egalitarian social encounters in which identity is temporarily detached from formal roles. As such, they provide a vital social infrastructure that restores diversity of experience, supports collective meaning-making, and maintains a sense of shared belonging (Oldenburg, 2001).

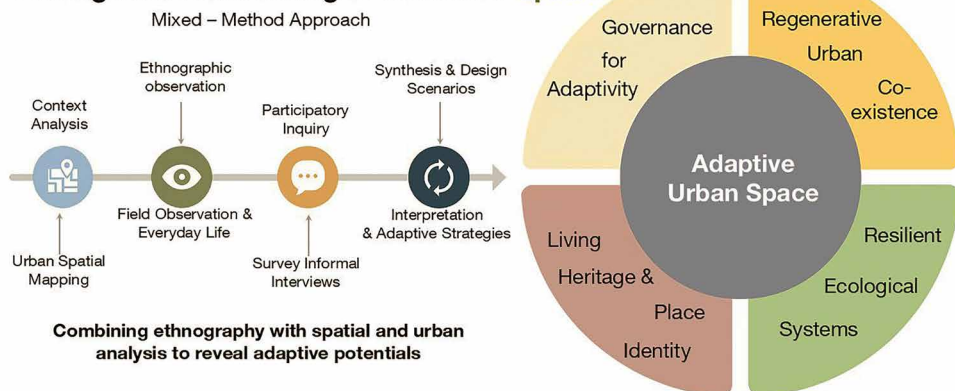
This approach to regenerating public space gives it a new role as an expression of a new urban condition, whose adaptive regenerative processes require the implementation of biodiversity, the fostering of social flourishing, and the alignment of inclusivity with diverse sustainable strategies.

To this end, the study adopts a mixed-methods approach, integrating environmental sustainability assessments to investigate adaptive urban regeneration in Casal Bertone. It reframes public space through ecological and relational interventions, aligns with regeneration approaches, and emphasises adaptability, inclusivity, and long-term sustainability. At the same time, the study proposes a design model that responds to historical identity, everyday practices, and contemporary socio-environmental needs, positioning Casal Bertone as a model for adaptive and inclusive transformation (Fig. 1). Ethnographic observation, spatial mapping, and participatory inquiry combine to interpret everyday dynamics and translate them into adaptive design strategies.

In line with research-through-design, the study is organised into three phases.

The first phase adopts an ethnographic approach (Pink, 2021) to document the everyday experiences of university students and long-term residents as they interact with public space (Brighenti, 2010a). It is structured around participant observation, semi-structured interviews, and surveys,

Through the Networking of Common Space



Integrated mixed-method framework. The interaction between ethnographic research, spatial analysis, and adaptive design strategies in the Casal Bertone case study.

Source: Elaboration by Mahtab Seyedabadi

Fig. 1

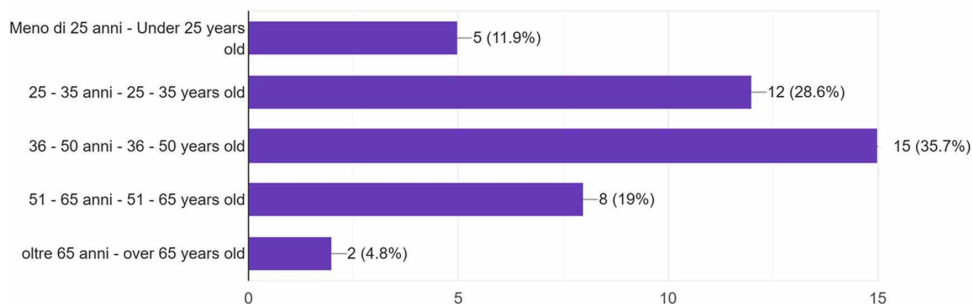
building on a two-year ethnographic investigation initiated in 2022, thereby allowing situated narratives and recurring spatial practices to emerge (Brighenti, 2010b). Particular attention is given to the perceived and actual visibility of university students, a key issue identified in previous work. The discrepancy between students' use of urban spaces and the uses socially recognised by the broader community is interpreted as a form of spatial exclusion. In this research, visibility refers to the capacity of individuals and groups to be seen, recognised, and socially legible within public space, and is therefore closely linked to participation and inclusion (Sezer, 2020). It can be observed through the presence or absence of spatial signs, everyday practices, and socio-cultural markers that make groups identifiable and contribute to place meaning (Sezer and Fernandez Maldonado, 2017). When these

elements are limited or fragmented, groups may remain present yet marginal, shaped by subtle forms of exclusion operating through invisible socio-spatial boundaries. These qualitative insights are complemented by anonymous quantitative data comprising 38 questions, administered in a bilingual format, that assess perceptions of accessibility, safety, and social interaction within the neighbourhood, based on responses from 42 participants (Table 1), including university students and long-term residents (Cozza, Seyedabadi, 2024). While the data do not represent the entirety of perspectives within the neighbourhood, they reflect situated viewpoints shaped by specific social and spatial conditions (Simonica, 2006).

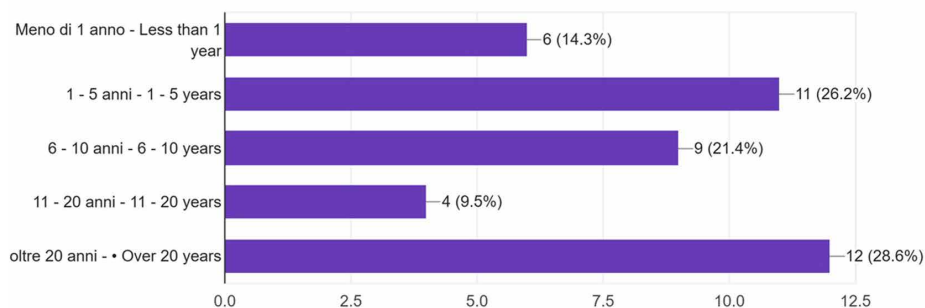
The second phase conducts a spatial analysis of Casal Bertone to identify underused or ambiguous spaces with potential for transformation.

(3/38) Età - Age

42 responses

**(8/38) Da quanto tempo vivi a Casal Bertone? How long have you lived in the neighborhood?**

42 responses



Age distribution, long-term residents' mix, and newer inhabitants. Coexistence of established local identities and more recent populations within Casal Bertone.

Source: Elaboration by Mahtab Seyedabadi

Tab. 1

Mapping techniques analyse the 2008 Municipal Master Plan and the Ecological Network of Rome to identify sites suitable for Nature-based Solutions and urban forestry interventions.

A morphological analysis examines the relationship between contemporary architecture and the historical fabric, with particular attention to the railway workers' housing and the former cinema building, and their socio-spatial implications. An infrastructural analysis of mobility patterns

considers connections with wider urban systems to support proposals that improve transit integration, reduce car dependency, and strengthen pedestrian accessibility.

The final phase translates these findings into design-oriented proposals to revitalise Casal Bertone through sustainable, multifunctional public spaces (Fig. 2) that extend the social dynamics observed in the field. Priority is given to the adaptive reuse of urban voids and "undefined



Integrated spatial strategy and adaptive street prototype. A systemic network of green connections, mobility corridors, and key sites, translated into multifunctional public space interventions.

Source: Elaboration by Mahtab Seyedabadi
Fig. 2

spaces,” transforming them into shared green commons for students and long-term residents. In this transformation, the university’s role and collaboration are fundamental to meeting the demands of students and long-term residents in the same place. Proposed actions include re-introducing a tram line, expanding pedestrian zones, developing new parks with mixed-use functions, such as study areas, a library, and local-scale event areas, and integrating diverse plant species to strengthen ecological resilience through adaptive maintenance and social integration. Everyday coexistence, adequate collective spaces, and sustained opportunities for

interaction are relevant outcomes for university students, who, despite their numerical presence in the neighbourhood, often lack spaces to build a sense of belonging and establish daily routines.

3. Material and Results.

Casal Bertone: Heritage and Challenges

Located in the Tiburtino area, near Tiburtina station and bounded by major railway lines, Casal Bertone has long experienced historical segregation. During the Fascist dictatorship (1922–1943), Casal Bertone was one of the working-class neighbourhoods developed on Rome’s outskirts to house industrial and railway workers,

reflecting state-controlled planning aimed at isolation (Caprotti, 2007). By World War II, it had evolved into a mixed-income area with limited accessible green spaces, tensions between perceived and lived identities, and inefficient mobility systems. Recently, it has hosted Sapienza University's largest public dormitory, built in 1999, which has long been perceived and represented as a marginalised phenomenon involving foreign students not part of the neighbourhood. This identity of Casal Bertone, also narrated in Italian cinema through films such as *Mamma Roma* (1962) by Pier Paolo Pasolini and *I soliti ignoti* (1958), represents, for long-term residents, a symbolic reference to post-war working-class Rome, reinforcing a collective narrative of labour, resilience, and local belonging. Ethnographic fieldwork indicates that this "vintage-Rome" heritage continues to shape the contemporary identity and idealised memory of railway workers, contributing to residents' self-perception as authentically Roman and influencing how newer groups, particularly university students, are socially positioned within the neighbourhood. The public dormitory of Casal Bertone, the largest in Rome and home to many international students, makes this contrast especially visible, as the historical narrative embedded in the urban environment renders students socially and spatially invisible within everyday neighbourhood life (Cozza, Seyedabadi, 2024). This condition can be understood not only as a social gap but also as a spatial one, reflecting

a mismatch between the actors who use the neighbourhood and those publicly recognised within it. More broadly, this tension relates to the evolving role of universities as territorial actors, whose capacity to generate urban impact depends not only on knowledge production but also on their embeddedness in local socio-spatial systems (Breznitz, 2012).

In other words, emerging approaches that emphasise the role of co-creation processes in which universities collaborate with public and non-academic actors will define a collaborative "third environment" that addresses sustainability challenges in specific territorial contexts (Trencher et al., 2014). In this way, public space could be perceived not as a fixed container but as a negotiated field, continuously produced through everyday interactions, institutional presences, and forms of governance that shape visibility, access, and legitimacy at the local scale (Rossi, Meta, 2025). Therefore, the challenges observed in the regeneration of Casal Bertone are not merely local but point to broader questions of urban governance and service provision. Integrated policies that coordinate spatial transformation with the production of public services and collective infrastructures could therefore be framed as processes linking territorial balance, accessibility, and the everyday usability of the public city (Ricci et al., 2020).

Survey results and ethnographic observations reinforce this picture. Students are perceived as present yet marginal, mainly associated with

functional spaces such as dormitories, markets, commercial centres, and a few nightlife venues. In contrast, long-term residents use many of the same spaces but activate them socially, transforming them into places of interaction without students noticing. This divergence highlights the lack of shared public environments that foster everyday coexistence. These findings highlight not only socio-spatial fragmentation but also the absence of shared, recognisable public environments that can support everyday interaction among different user groups. In this sense, the design proposal does not introduce external solutions but rather directly builds on these observed gaps, translating them into spatial strategies that enhance visibility, accessibility, and collective use.

4. Conclusions. From student invisibility to university spatial agency

The persistence of spatial and social separation in Casal Bertone suggests that addressing exclusion cannot rely solely on physical regeneration measures but requires actors capable of sustaining shared urban life. From this perspective, although the role of nature-based solutions (NBS) in mitigating environmental and social disparities (Mahmoud et al., 2022) is essential, universities can act as agents of urban transformation when their societal role is enacted through place-based, co-produced adaptive practice rather than as a unidirectional transfer of knowledge. Research on the “third mission”

increasingly emphasises that the public relevance of universities depends on their capacity to build durable relationships with territorial actors and to support institutional arrangements that sustain continuous rather than episodic engagement (Compagnucci, Spigarelli, 2020). Within this framework, university agencies emerge through processes of co-creation and continuity: contributing to the production of tangible shared spaces with the municipality and local stakeholders, and maintaining an ongoing presence that supports trust, learning, and collective use. Studies of university-community engagement highlight how such collaborations can address exclusion and foster sustainability, while emphasising that their effectiveness depends on local conditions and cannot be replicated through standardised models (Málovics et al., 2025). Complementarily, capability-based perspectives show that transformative outcomes arise when university and community capacities evolve together, enabling local actors to actively participate in change processes rather than remain passive recipients (Petersen et al., 2022). Referring to the Casal Bertone case study, these perspectives suggest that the invisibility of students is not only a social-perception issue but also a spatial one. In this sense, the university’s transformative potential lies in collaborating to create co-produced, sustainable common spaces by studying the everyday governance, use, and care of shared urban spaces outside the University campus. Urban challenges relate to

how space is produced, interpreted, and used. Public space is shaped by everyday practices, narratives of belonging, and unequal visibility. Exclusion arises from mismatches among spatial design, social uses, and the actors who can influence them. Regeneration, therefore, demands processes that reconnect spatial transformation with lived experience and ecological conditions.

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