BDC

Università degli Studi di Napoli Federico II

24

numero 2 | anno 2024

BDC

Università degli Studi di Napoli Federico II

Via Toledo, 402
80 134 Napoli
tel. + 39 081 2538659
fax + 39 081 2538649
e-mail info.bdc@unina.it
www.bdc.unina.it

Direttore Responsabile: Luigi Fusco Girard
BDC - Bollettino del Centro Calza Bini Università degli Studi di Napoli Federico II
Registrazione: Cancelleria del Tribunale di Napoli, n. 5144, 06.09.2000
BDC è pubblicato da FedOAPress (Federico II Open Access Press) e realizzato con Open Journal System

Print ISSN 1121-2918, electronic ISSN 2284-4732

Journal home page www.bdc.unina.it

BDC volume 24, issue 2, year 2024

fedOAPress

print ISSN 1121-2918, electronic ISSN 2284-4732

BDC

Co-design proximity: beyond the participation process

Co-progettare prossimità: oltre il processo partecipativo

Elena Paudice[a], Marichela Sepe[a,b,*]

AUTHORS & ARTICLE INFO

[a] Department of Civil, Constructional and Environmental Engineering, Sapienza University of Rome, Italy

[b] ISMed-CNR

* Corresponding author
email: marichela.sepe@uniroma1.it
sepe@ismened.cnr.it

ABSTRACT AND KEYWORDS

Co-design proximity

Co-design, also known as participatory design, has become a vital approach in urban planning, emphasizing the active participation of all stakeholders throughout the design process. At the heart of co-design is the concept of proximity, which extends beyond physical closeness to encompass cultural, social, and emotional dimensions. These aspects are critical for truly understanding and meeting user needs (Sanders and Stappers, 2008). Proximity enables designers to engage deeply with the local context, helping to create spaces that resonate with local identities (Manzini, 2015).

This study examines the co-design process applied to the regeneration of the former Rome Fairgrounds, showcasing the design concepts developed during the 2022-24 "Urban Planning" and "Public Space and Proximity" Courses at DICEA- Sapienza Università di Roma. It aims to evaluate the effectiveness of these proposals in fostering proximity. Additionally, the study illustrates the Principles of Proximity Neighborhoods a flexible tool aimed at ensuring that design solutions are inclusive, adaptable, and aligned with local identity, reflecting the dynamic nature of co-design.

Keywords: urban regeneration, public spaces, co-design, proximity, flexibility

Co-progettare prossimità

Il co-design, o progettazione partecipativa, è ormai riconosciuto come un approccio essenziale nella pianificazione urbana, valorizzando la partecipazione attiva di tutti gli stakeholder lungo l'intero processo progettuale. Elemento centrale del co-design è il concetto di prossimità, che non si limita alla mera vicinanza fisica, ma include anche dimensioni culturali, sociali ed emotive. Questi aspetti sono fondamentali per comprendere e soddisfare appieno le esigenze degli utenti (Sanders e Stappers, 2008). La prossimità permette ai progettisti urbani di instaurare un dialogo profondo con il contesto di riferimento, favorendo la creazione di spazi che riflettano e valorizzino le identità locali (Manzini, 2015).

Questo studio analizza il processo di co-design applicato alla rigenerazione dell'ex Fiera di Roma, presentando le idee progettuali sviluppate nell'ambito dei Corsi di "Urbanistica" 2022-24 e "Spazi pubblici e prossimità" tenuti presso il Dipartimento DICEA-Sapienza Università di Roma. L'obiettivo è valutare l'efficacia di queste proposte nel promuovere il concetto di prossimità. Inoltre, lo studio illustra i Principles of Proximity Neighborhoods, uno strumento flessibile concepito per garantire soluzioni progettuali inclusive, adattabili e coerenti con l'identità locale, in linea con la natura dinamica del co-design.

Parole chiave: rigenerazione urbana, spazi pubblici, co-design, prossimità, flessibilità

1. Introduction. Co-design and proximity

Co-design is increasingly emerging as a cornerstone methodology in contemporary design practices. By actively involving all stakeholders, especially end-users, in the design process, co-design ensures that the final product aligns closely with the needs and expectations of those who will interact with it. This approach is rooted in the belief that those who use a product or service are best positioned to inform its development, providing critical insights that may not be evident to urban planners alone. The role of proximity in co-design is particularly significant, as it underscores the importance of close relationships, both geographically and socially, between urban planners and users. This proximity facilitates better communication, fosters trust, and enhances mutual understanding, all of which are essential for effective collaboration and successful design outcomes.

Proximity (C40 Cities Climate Leadership Group, 2020; Moreno, 2024) in co-design is a multifaceted concept that extends beyond mere physical closeness. It encompasses cultural, social, and emotional dimensions, which are crucial for bridging the gap between different stakeholders. When urban planners and users share a common cultural or social background, they are more likely to understand each other's needs, expectations, and preferences, leading to more relevant and effective design outcomes. Sanders and Stappers (2008) emphasize that co-design is more successful when urban planners and users can establish a deep connection through shared experiences and understanding, which often stems from proximity. This connection is vital for creating a collaborative environment where all participants feel valued and heard, enabling the co-design process to thrive (Sanders, Stappers, 2008).

In many ways, proximity (Koohsari et Al. 2013; Jacobs, 1961) can be seen as the glue that holds the co-design process together. It creates a foundation for empathy, which is critical for understanding the lived experiences of users and translating those insights into meaningful design solutions. Without proximity, whether physical, cultural, or emotional, the risk of miscommunication and misunderstanding increases, potentially leading to design outcomes that do not fully meet the needs of users.

The concept of proximity is particularly relevant in the field of urban planning, where co-design has been instrumental in fostering community engagement and creating spaces that reflect the needs and desires of local populations. Manzini (2015) discusses how proximity allows urban planners to immerse themselves in the local context, gaining insights that are crucial for the creation of sustainable and user-centered urban environments. By being physically present in the community, urban planners can observe and engage with the daily lives of residents, understanding the unique social dynamics, cultural specifics, and environmental factors that influence design outcomes. This level of immersion is essential for creating spaces that are not only functional but also resonate with the identity and aspirations of the community (Manzini, 2015).

Urban co-design initiatives that emphasize proximity often lead to more successful and sustainable outcomes. For example, projects that involve local residents in the planning and design of public spaces tend to be more effective in addressing community needs and fostering a sense of ownership among users. When residents feel that their voices have been heard and their contributions have been valued, they are more likely to take pride in and care for the spaces that have been created. This, in turn, can lead to more vibrant and resilient communities.

Moreover, proximity in urban co-design helps to ensure that design solutions are contextually appropriate. By understanding the specific challenges and opportunities

of a given area, urban planners can develop interventions that are better suited to the local environment and more likely to succeed in the long term. This is particularly important in diverse urban settings, where a one-size-fits-all approach is unlikely to meet the needs of all residents. Instead, co-design processes that emphasize proximity can help to create tailored solutions that address the unique characteristics of each community.

While physical proximity has traditionally been seen as ideal in co-design, the advent of digital tools has expanded the possibilities for virtual proximity. Digital platforms enable the participation of geographically dispersed stakeholders, making co-design more inclusive and accessible. However, as noted by Björgvinsson, Ehn, and Hillgren (2012), digital co-design can sometimes lack the richness of face-to-face interactions, which are crucial for building trust and mutual understanding. The challenge, therefore, lies in finding ways to replicate the depth of connection and communication that physical proximity affords, even in digital environments (Björgvinsson, Ehn, Hillgren, 2012).

Digital proximity in co-design presents both opportunities and challenges. On one hand, it allows for greater inclusivity by enabling participation from individuals who may not be able to engage in person due to geographical, physical, or time constraints. This can be particularly valuable in global projects where stakeholders are spread across different regions or countries. On the other hand, the lack of physical presence can sometimes lead to a disconnect between participants, making it more difficult to build the trust and rapport necessary for effective collaboration.

To overcome these challenges, urban planners must be intentional about creating digital spaces that foster a sense of closeness and connection. This might involve using video conferencing tools to facilitate face-to-face interactions, creating online forums for ongoing discussion, and employing collaborative design software that allows users to contribute ideas in real-time. By prioritizing these forms of digital proximity, urban planners can help ensure that virtual co-design processes are as effective and meaningful as their physical counterparts.

As co-design practices continue to evolve, the interplay between physical and digital proximity will become increasingly important. In many cases, a hybrid approach that combines the strengths of both physical and digital proximity may be the most effective way to foster meaningful collaboration. For example, a co-design process might begin with in-person workshops to establish initial relationships and build trust, followed by digital collaboration to allow for ongoing input and refinement. This approach leverages the advantages of both physical presence and digital accessibility, creating a more flexible and inclusive co-design process.

Manzini (2015) suggests that the future of co-design lies in its ability to adapt to different contexts and needs, seamlessly integrating physical and digital proximity to create a more dynamic and responsive design process. By doing so, urban planners can ensure that they are not only meeting the immediate needs of users but also anticipating and addressing future challenges. This adaptability is crucial in a rapidly changing world, where the needs and expectations of users are constantly evolving (Manzini, 2015).

Co-design and proximity are deeply intertwined concepts that play a critical role in shaping the success of design processes. Proximity, in its various forms—physical, cultural, social, and digital—enhances communication, understanding, and trust between urban planners and users, leading to more effective and user-centered outcomes. As the practice of co-design continues to evolve, finding the right balance between physical and digital proximity will be essential for fostering meaningful collaboration and creating designs that truly resonate with their intended users. The

future of co-design will likely involve an increasing emphasis on hybrid approaches that combine the strengths of both physical and digital proximity, enabling more inclusive, adaptable, and contextually appropriate design solutions.

Based on these premises, this study—conducted within the framework of the PRIN 2020 SUMMA research project (#20209F3A37) and under the responsibility of the corresponding author within the ISMed-CNR Unit, as part of the agreement between Sapienza University of Rome and ISMed-CNR, which aims to establish guidelines for creating resilient, healthy, and flexible spaces and LOVE Sapienza research project founded by Sapienza University of Rome – with the corresponding author responsibility as well - which aims to identify suitable principles for university public spaces (Carmona, 2019; Corburn, 2009; D'Alessandro et al., 2015; Gehl, 2010, 2016; Koohsari et al., 2013)—seeks to present the participatory process and proposed project interventions for the regeneration of the former Rome Fairgrounds (Cochrane, A., Passmore, 2001; Degen , García, 2012; Forrester, Snell, 2007; Marshall, 2000; Ponzini, D. Nastasi, 2011; Rossi, U., Vanolo, 2010).

Indeed, the objective of this work is to illustrate the co-design process for the area known as the former Rome Fair and how it is contributing to the creation of a proximity-based neighborhood. In this context, the project ideas developed during the 2022-24 “Urban Planning” and “Public Space and Proximity” courses at DICEA-Sapienza University of Rome will be presented[1]. This area, characterized by disuse and isolation from the surrounding neighbourhood, was the focus of the Courses, and led to the development of the Principles of proximity neighbourhood (London F., 2020; Madanipour, 2011; Montgomery, 1998; Sepe, 2023; Sim, 2019)

The paper is organized as follows: Section 2 describes the former Fair of Rome territory and its surroundings; Section 3 outlines the history of the former fair area; Section 4 discusses the co-design process conducted by Roma Capitale’s Department of Urban Planning and Implementation, General Planning Directorate (in Italian, *Dipartimento Programmazione e Attuazione Urbanistica Direzione Pianificazione Generale*), U.O. General Regulatory Plan (Italian acronym P.R.G.); Section 5 details the study conducted within the framework of “Urban Planning” and “Public Space and Proximity” courses, where students developed an urban planning concept for the former Fair of Rome, incorporating the aforementioned co-design process led by the Roma Capitale Department and a subsequent listening process involving students and a smaller representation of both neighborhood associations and citizens; Section 6 addresses the principles of proximity neighborhoods; and, finally, Section 7 presents the conclusions.

2. The territory

The former Rome fairgrounds is set in an urban context rich in history and significance, located in the south-east quadrant of the capital, a central area that has undergone numerous transformations over the centuries. The entire area is in constant connection with Via Cristoforo Colombo, one of Rome's main roads, which stretches from the Baths of Caracalla to Ostia, offering a route that recounts various eras, from the Aurelian Walls to Fascist architecture (Marini, Mendeni, 2021). Via Cristoforo Colombo is not only an important road axis, but also the symbol of an urbanistic vision of the city, designed to project Rome towards the sea (Mastrigli, 2021).

The route of this road is marked by a series of continually evolving building fabrics, including the Garbatella district, one of Rome's most emblematic "garden cities." Founded in 1920, Garbatella was conceived as a model neighborhood, designed to

contribute to a modern vision of Rome, with particular attention to residential and social well-being. The "quick-build houses," constructed with few stories and equipped with vegetable gardens, embodied an innovative concept of urbanization, integrating living space with greenery and the possibility of self-sufficient food production, in line with the vision of a healthy city (Stabile, 2001).

The urban texture of Garbatella follows the morphology of the land, adapting to the various changes in elevation. This organic character contrasts with the more regular and rational structure of the buildings constructed since the 1940s, during the period of Fascist rationalism, which favoured straight lines and simple geometries. In this context, the green spaces between the buildings play a fundamental role in the creation of a network of parks and gardens (created at the end of the 1990s), which define the opposite edge of the former Rome fairgrounds.

Behind the former Rome fairgrounds is the Tor Marancia district, another fundamental piece in the history of Rome's 'public city'. Initially a spontaneous settlement, Tor Marancia was the subject of a vast redevelopment plan starting in 1949, as part of the Fanfani Plan, which aimed to build public housing to tackle the post-war housing crisis. The new housing was designed according to functional principles, intended to accommodate families displaced by the demolition of the previous settlement. This neighbourhood, often considered marginal, experienced a new vitality in 2015 with the 'Big City Life' initiative. Twenty-two internationally renowned street artists created monumental murals on the walls of eleven buildings in the neighbourhood, transforming Tor Marancia into an open-air museum, a unique example of urban art and cultural regeneration (Rocco, 2016). Today, Tor Marancia is not only a residential neighbourhood, but also a symbol of Rome's resilience and its ability to renew itself without losing its identity. The neighbourhood gradually merges with the park of the same name, a green area of great historical and naturalistic value that represents one of the last remnants of the Roman countryside within the urban fabric. This park constitutes a natural continuum with the Appia Antica Park, a vast archaeological and landscape complex whose common thread is the Regina Viarum (Quilici, 2017). Running along the north-eastern edge of the study area, the Appia Antica Park connects the city with the picturesque landscape of the Castelli Romani, offering continuity between city and countryside.

In analyzing, instead, the site in its specifics, we can see that despite the passage of years and the change in its functions, in its present state it is still possible to read the original spatial organization of the former Rome fairgrounds complex. The site is bordered by a masonry fence that blocks visibility into the interior, which is primarily occupied by buildings and access routes. These structures are aligned parallel to Via Cristoforo Colombo and include the exhibition pavilions, the centrally located congress center, offices, and auxiliary facilities, such as the boiler room, all necessary for conducting trade and exhibition activities.

It is important to note that not all pavilions were built simultaneously. The pavilions adjacent to Viale di Tor Marancia date back to 1986. Subsequently, in 1989, thanks to a 14 billion lire (approximately 7 million euros) grant from the Lazio Region, the complex underwent a major renovation. In 1990, within a record time frame, 15,000 square meters of new covered spaces were constructed, including two new pavilions and the largest congress hall in the capital.

Figure 1. Rome, former fair pavillon

Source: Marichela Sepe's Archive

Figure 2. Rome, former fair pavillon

Source: Elena Paudice's Archive

Figure 3. Rome, Via dell'Accademia Peloritana, the open-air market

Source: Marichela Sepe's Archive

Figure 4. Rome, Mario Picchi Park

Source: Marichela Sepe's Archive

Currently, the pavilions are no longer accessible due to their deteriorating condition and structural instability. However, the original structure's layout can still be identified, characterized by reticulated roofs composed of beams and joints typical of industrial and commercial complexes of the era. Access to the area now takes place through a vehicular entrance located at Via dell'Arcadia. The original pedestrian and vehicular entrances along Via Cristoforo Colombo, Viale di Tor Marancia, and Via Dei Georgofili have been closed for safety reasons. The area of the former Rome fairgrounds is thus the hub of an area that has undergone various urban transformations, bearing witness to the evolution of a part of the city, its industries, and its economic development. This territory, with its diverse stratifications, is therefore a significant part of the city's historical and cultural heritage.

3. The history of the place

The project for the former Rome fairgrounds is intrinsically linked to the Universal Exhibition of Rome, initially scheduled for 1942. However, this grand event was abruptly halted due to the outbreak of World War II. As a result, Roman trade fairs were held in various locations across the city, changing venues from year to year until a more permanent solution was found in 1959.

In that year, the Rome fair was finally established along the major urban artery of Via Cristoforo Colombo, a significant thoroughfare connecting Rome with the coastal town of Ostia. This location served as a temporary headquarters but remained in active use for nearly half a century. Over time, the fairgrounds evolved beyond their original purpose of hosting trade fairs. They began to accommodate conferences, business tourism, and large-scale public administration competitions, diversifying the activities and events held there.

By 2006, the need for a more modern and expansive facility led to the construction of a new headquarters, aptly named the "New Fair of Rome." This new venue was strategically located on Via Portuense, near the freeway leading to Fiumicino Airport, thereby enhancing accessibility and logistical convenience.

In 2011, a significant variant of the 2008 general regulatory plan for Rome was implemented. This plan emphasized that the area of the former Rome fair was situated within a well-established urban context. This context comprised 20th-century expansion areas characterized by medium to high-density development, free-standing buildings, and public green spaces. These areas were in close proximity to notable landmarks such as the Tor Marancia estate and the Appia Antica ancient park.

This location was identified as a primary component of a larger network featuring highly natural areas interspersed with a system of ditches and a comprehensive hydrographic network. It also played a crucial role in completing the connections within the ecological network, characterized by regions with significant human activity. The regulatory guidelines for these areas focused on redevelopment through specific environmental projects aimed at enhancing the quality and sustainability of the urban fabric.

The primary objective of the redevelopment project was to initiate a regeneration process that would see the creation of a new settlement seamlessly integrated with the surrounding context and ongoing urban transformations. This process was to be grounded in principles of innovation and quality, considering settlement patterns, morphological characteristics, and environmental sustainability. The envisioned uses of the new development were to be both integrative and complementary to

existing facilities and functions.

A key feature of the intervention was the design and establishment of a new residential settlement. This settlement was to be well-equipped with commercial spaces, office buildings, and public service facilities, ensuring that it complemented and enhanced the existing or planned infrastructure within the neighbourhood. The area was planned to be predominantly pedestrian-friendly, with efforts made to minimize incoming vehicular traffic and to segregate routes for safety and tranquillity. The designated areas for non-residential activities were intended to house functions that were compatible with and sustainable within the surrounding urban fabric.

In terms of spatial allocation, the project designated a total of 67,000 square meters for built environments. Of this, 65% was allocated for residential construction, including social housing, 20% for non-residential use, and 15% for flexible uses. Additionally, a 28-meter buffer zone was incorporated to enhance the environmental integration and sustainability of the project (Roma Capitale, 2011).

This comprehensive approach aimed to create a vibrant, sustainable, and integrated urban area that would meet the needs of its residents while preserving and enhancing the environmental and historical context of the former fairgrounds.

4. The process of co-design and the design competition

4.1 The Rome Municipality participatory process

On September 13, 2011, the Municipality of Rome organized the first meeting that initiated a broad participatory process to involve citizens in the planning and redevelopment of the former fairgrounds. During this initial meeting, citizens expressed dissatisfaction with the proposed building project, perceiving it as contributing to the over-urbanization of the area. In 2014, the process intensified with the introduction of working groups. A comprehensive listening initiative followed, incorporating participatory planning workshops that brought together citizens, neighborhood associations, and the municipal administration, with around thirty people regularly participating.

The Roma Capitale's Department of Urban Planning and Implementation, General Planning Directorate (*Dipartimento Programmazione e Attuazione Urbanistica Direzione Pianificazione Generale*), U.O. General Regulatory Plan (P.R.G.), organized four participation workshops on November 24, December 1, December 9, and December 15, 2014, following a public meeting held on November 17, 2014. These workshops were open to neighborhood associations — such as Circolo Garbatella di Legambiente, Alterlego Aps, Comunità di Sant'Egidio Garbatella, Associazione Roma nel Mondo, Circolo PD Ardeatina-Montagnola — as well as to local citizens.

It is worth noting that some citizens who interacted with the municipal administration have taken responsibility for maintaining the park in front of the former Fairgrounds. Some of these individuals recall the area during its period of activity, making this theme particularly meaningful to the community.

Following the workshops, a summary document was published online on January 11, 2015, and the process concluded with a final session on March 4, 2015.

The results of this process will be detailed below concerning three key systems: the built environment, green spaces, and mobility, the same system used in the 2008 Plan of Rome.

The primary request regarding the built environment was to ensure that new

interventions integrate seamlessly with the surrounding neighbourhood, creating a continuous urban fabric. The vision was to make the new neighbourhood permeable and interconnected with the existing one, fostering an open and welcoming atmosphere. This approach aimed to address the lack of services in the area. Consequently, it was suggested to re-evaluate the allocation of surface area for residential use, favouring non-residential uses that were deemed more urgent while maintaining the economic-financial balance of the project.

The workshops emphasized the need for residential buildings to have ground floors dedicated to services, commerce, and other non-residential functions, thereby creating a vibrant urban fabric that remains lively even in the evening. It was also requested that the proportion of residential construction at controlled prices be distributed throughout the area rather than concentrated in a single building, preventing the creation of large individual structures that could become visual and physical barriers.

Furthermore, the creation of a multifunctional hub was proposed, with services distributed to ensure permeability with other functions. Retail and service spaces within the ground floors of residential buildings were to be designed in continuity with the new built environment. The activities envisioned for the multifunctional hub included craftsmanship, business creation (start-ups), spaces for intersection and cross-fertilization between professions and trades, artistic and cultural activities, scientific, technological, and environmental activities, and educational activities.

At the local services level, there was a demand for a nursery and children's school, a comprehensive school, a health centre, and student accommodations. Additionally, special attention was requested for the integration of disabled individuals into the social fabric through various art laboratories.

As regards green spaces, the participatory workshop expressed a desire to use part of the standard green areas as gardens with a strong emphasis on biodiversity. The proposal included creating compatible, functional, and capacious community composting plants to serve the settlement and surrounding areas. Residents could bring organic waste to these facilities in exchange for fertilizer for their gardens, terraces, and green spaces.

The new green system's design was to be integrated with a network of internal squares, green areas, and pedestrian and cycle paths, forming public spaces that connect the buildings and link the area with the surrounding neighbourhood. This natural barrier would be open at certain points, such as urban gardens, creating a large green surface intended as a meeting place for the new neighbourhood and the location of the multidisciplinary hub.

Regarding the mobility system, the new residential buildings were to be integrated into the site of the former fairgrounds with a network of cycle and pedestrian paths, green spaces, and small squares connecting the area to the rest of the neighbourhood. Main connections were to ensure sustainable and innovative mobility, prioritizing public transport.

To protect against noise and air pollution from heavy traffic on Via Cristoforo Colombo, the 28-meter buffer zone envisioned by the variant would need to become a green area and public car park. This buffer zone would act as a natural filter through terrain modelling and the planting of various tree species. Additionally, the road surface of the Colombo section in front of the former fair would be made with sound-absorbing materials to further reduce noise pollution.

The workshop also emphasized that the new buildings and streets be designed for simple and effective maintenance to prevent degradation. This required using materials and methods that achieve the highest possible degree of maintainability,

with characteristics suitable for defence against vandalism. Moreover, buildings were to be constructed to be completely self-sufficient in terms of energy, serving as a model for new housing culture.

As a result of this participatory process, on December 15, 2020, the Municipal Assembly approved the agreement for the redevelopment of the former Rome fairgrounds. This agreement reduced the available building construction to 44,000 square meters, down from the previously envisaged 67,000 square meters. Of this, 80% was designated for residential construction, including 20% for social housing, while the remaining 20% was allocated for services. The agreement also provided for the complete transformation of the site on Via Cristoforo Colombo, including the demolition of existing buildings and their replacement with new public and private functions (Municipalità di Roma, 2015).

This participatory approach ensured that the redevelopment plan was closely aligned with the needs and aspirations of the local community, fostering a more integrated, sustainable, and vibrant urban environment.

4.2 The design competition

Following an extensive planning phase, the 7.7-hectare former Fairgrounds area is now part of the "ATO-R ex Fiera" Ordinary Transformation Area, as approved in late 2020. A design competition for this area was set for February 2024, part of a redevelopment agreement signed in September 2023 between Rome Capital and the Orchidea Fund, which has owned the site since 2021. Although the university courses were conducted prior to the announcement of the competition, and thus the students' proposals were not influenced by its requirements, they are nonetheless aligned with them. Therefore, a summary of the requirements outlined in the design competition announcement is provided below.

The competition aimed to develop a new urban framework along Via Cristoforo Colombo, incorporating cultural, leisure, residential, commercial, and service spaces, with an emphasis on public areas and green spaces. This effort builds on the 2015 participatory process and seeks to create a multifunctional area that integrates well with the historical and cultural context (Roma Capitale, 2023).

The masterplan will provide guidelines for transforming the area, focusing on: spaces and services: designing green spaces, equipped areas, and public functions; connections and accessibility: including pedestrian and cycling paths, integrated with public transport, and ensuring environmental and economic sustainability; reconnection: linking Via di Tor Marancia and Via dell'Arcadia to Via Cristoforo Colombo, improving accessibility and integrating with existing cycling paths; morphological layout: ensuring the development aligns with the surrounding context and key urban areas; public space Functions: identifying essential functions and services for the neighbourhood (Orchidea S.r.l., 2024a).

The project should specify a functional mix for the Gross Floor Area (G.F.A.): 80% residential, with at least 20% allocated to social housing, and 20% non-residential. The total G.F.A. of over 44,000 sqm includes more than 35,000 sqm for residential use (including over 7,000 sqm for social housing), over 8,800 sqm for non-residential use (with around 6,800 sqm for offices and 2,000 sqm for commercial spaces), 25,000 sqm for public green areas, 9,500 sqm for public services, and 8,500 sqm for public parking.

As regards the public areas: design should include a 30-meter non-building zone along Via Cristoforo Colombo and dedicated green spaces. The focus is on accessibility and inclusivity, especially for children and adolescents, drawing from theories on children's cities As regards the public areas facilities: at least one public

space must be created, such as a square or meeting area. Required facilities include public and neighbourhood services, urban-scale production services, and educational and creative spaces for youth, including a center for childhood and adolescence.
As regards the private areas: predominantly residential, with a functional mix that supports commercial and office activities. Residential areas should include at least 20% social housing and integrate with the surrounding context, providing green and permeable spaces (Orchidea S.r.l., 2024b)
With respect to the mobility network: emphasize pedestrian and cycling paths, integrating with public transport and ensuring connectivity with surrounding areas; and include a vehicular connection between Via dell'Arcadia and Via di Tor Marancia, and a public parking area to support the development.
With respect to the quality requirements: the environmental sustainability includes tree-lined or equipped green areas along roadways, optimizing open spaces for sunlight and air, and implementing effective shading and ventilation. Finally, buildings must meet high energy and microclimatic performance standards, using innovative technologies for passive energy performance and renewable energy sources.

5. The design ideas

5.1 The methodology

The methodology used for the case study of the former fairgrounds of Rome, developed during the Urban Planning Courses at DICEA-Sapienza University of Rome before the launch of the idea competition and according to the achievements of both the analysis, the 2015 process of participation and 2020 agreement, comprises the collection and integration of both primary and secondary data.
The primary data were gathered through various site visits, which included taking photographs, conducting perceptual surveys, and analysing the built environment, mobility system, green spaces, and identifying the main users and their activities. These site visits provided a comprehensive understanding of the current state of the area and its usage patterns.
Additionally, a one-day participation event was organized with the students, involving a smaller representation of neighborhood associations—namely, Circolo Garbatella di Legambiente and Orti Urbani Garbatella—and citizens who had also participated in the 2011 and 2014 meetings of the participatory process, to better understand current needs. Approximately seven association representatives shared their experiences from the period when the meetings with the municipality began.
It was particularly valuable for the students to hear citizens articulate their vision of a sustainable city and healthy public spaces, as well as how they had sought to advocate for this vision during the participatory workshops in 2014-2015. This listening process reaffirmed the outcomes of the earlier participatory process conducted by the Rome Municipality, as described in Section 4.1.
Additionally, detailed studies of the site's and surrounding area's plans were conducted, focusing on aspects such as the built environment, mobility system, and green spaces. Proposed project interventions were also analysed to assess their potential impact and integration with the existing urban fabric.
The secondary data were collected through extensive bibliographical research. This research included studying the history of the former fairgrounds, which provided context and background for the site's current condition and its significance. Furthermore, the general regulatory plan variant was examined to understand the

legal and planning framework guiding the redevelopment. The aforementiones process of participation, which involved the engagement of local stakeholders and the community, was also reviewed to incorporate the insights and feedback gathered during this participatory planning phase.
According to the aforementioned information, the work was organized into the three systems, namely built environment, green spaces, and mobility.

5.2 The analysis of the area

The analysis of the area, bordered by Via Cristoforo Colombo, Via dell'Arcadia, Via di Grotta Perfetta, and Viale di Tor Marancia, was conducted within the framework as aforementioned - of the "Urban Planning" and "Public Space and Proximity Courses". The findings are as follows:
The built environment forms a rectangular shape and includes: a park; a functioning sports centre; an asphalt open space used for parking; an asphalt open space for a market (Figure. 3), which serves as an important socialization point; another asphalt open space used for parking; an incomplete sports centre in a state of abandonment; a small, functioning sports centre; and the former fair pavilions (Figures. 1-2), bordered by a graffiti-covered wall, which are unused and in a state of abandonment. The entire area is mostly asphalted. In the vicinity of the study area, there are a high-quality residential area, the Lazio Region building, a Roma Tre University building, a church, and a medical clinic.
With respect to the green spaces, within the area, Don Mario Picchi Park (Figure. 4), was observed, characterized by an unused playground, some benches, a pedestrian path, lawns, and trees that lack proper care and suitable lighting. The area is surrounded by several small green spaces, along with the ancient parks of Tor Marancia and Appia Antica.
The major axis defining the margin of the area is Via Cristoforo Colombo, with 9 car lanes spanning a 25-meter section, a central row of trees, and a cycle lane that lacks adequate infrastructure for cyclists, such as meeting and stopping points (the only one being inside Don Mario Picchi Park), E-bike charging points, and bike parking racks. An interruption in the cycle path was noticed at the intersection with Via dei Georgofili. Despite the dense presence of bus shelters along Via Cristoforo Colombo, the parallel and intersecting streets lack dedicated bus stop spaces, causing urban traffic congestion. Generally, there are few connections for pedestrians, cyclists, or bus routes, leaving the study area disconnected and isolated.
From the perceptual analysis, it was observed that: the visual perception of the wall enclosing the former Rome fairgrounds creates a strong demarcation, hindering integration with the urban context and obstructing views of the surroundings; there is a strong and unpleasant noise from traffic on Via Colombo; the quality of the pavements in several streets is poor, and flowerbeds are uncultivated and neglected; there is heavy traffic on Via Cristoforo Colombo, Via Tor Marancia, and some neighborhood streets like Via Mario Musco.
Finally, as regards users, despite the proximity to the university, the residents are predominantly elderly, with few families and children.

5.3 The project interventions

As a result of these analyses and the participatory processes, the following project interventions were identified.
First, it was decided to consider the 2020 municipality agreement, which designates 44,000 square meters as built area instead of the 67,000 square meters previously

stipulated by the 2011 regulatory plan variant. The general idea is to create a place of identity continuity, forming a sequence of fully accessible open-air spaces shaped into a rectangle, connected by a long path that links Via di Tor Marancia to Via di Grotta Perfetta.

The built environment will include all necessary services reachable within 15-20 minutes by foot or bike, including existing functions like the market and sports centres, as well as new ones based on local residents' desires: social housing with commercial ground floors; student residences; a multifunctional centre and an open-air amphitheatre for various performances; art and music laboratories for people with disabilities and the elderly; shops, restaurants, and bars open in the evening. The aim is to create a multifunctional and multigenerational area that maintains urban identity, flexibility, and liveability, allowing for changing uses at different times (e.g., a school can become a gym in the afternoon, or shops can become art laboratories in the evening). One of the existing warehouses from the former fair will be repurposed into a cultural hub for various cultural activities, serving as a community centre for residents.

New residential buildings will have *pilotis* on the ground floor to house commercial spaces and public activities such as libraries, study spaces, and recreational areas, offering services for all age groups. To ensure accessibility, a car park will be located beneath the buildings.

The project aims to reduce impervious surfaces and the area occupied by cars, improving soil permeability and separating the site from Via Cristoforo Colombo with a green filter to protect against air and noise pollution. To enhance greenery, various trees will be planted along paths, and pocket parks and parklets will be created for the new residences and along new and existing buildings, providing opportunities for sports, physical activities, socialization, and games for disabled and elderly people.

To improve proximity, the new path connecting the area will include pedestrian and bike lanes. Via Cristoforo Colombo will have fewer car lanes, replaced by trees and green spaces. Existing transversal streets will be upgraded in terms of material quality and infrastructure. New or renovated paths will connect the built environment with various services and green spaces, ensuring continuity between new and old areas. Billboards and signs will be installed for better orientation. Artistic elements will be created along the path connecting the spaces, using materials from the dismantled pavilions of the former fair and graffiti parts of the wall, adding to the area's identity and fostering a sense of community among residents.

6. Co-design proximity neighbourhoods

As a result of the 2015 Rome Municipality participation process, as well as the analysis and proposed design interventions carried out during the mentioned “Urban Planning” and “Public Space and Proximity” Courses, the Charter of Proximity composed by 25 Principles of proximity neighbourhoods (Sepe, 2024) - presented at the 6th Biennial of Public Space, titled “Proximity and Public Spaces”, held in Rome in May 2023 - was developed[2].

The primary objectives of the Charter are to serve as a flexible, inclusive, and adaptable tool, acting as a guideline for anyone interested in assessing or implementing proximity in public spaces. These objectives are crucial as cities are changing at an ever-increasing pace, making it essential for the principles in the Charter to be updated accordingly. Flexibility is also vital because different places have unique characteristics, and the principles must be adaptable to these diverse

contexts to ensure inclusivity.

The preamble is that a proximity neighbourhood is one where the main services can be reached within 20 minutes on foot or by bicycle.

To create a proximity neighbourhood, it is necessary to identify areas of identity continuity, dividing them based on the size and organization of the territory.

Urban identity, which is a set of characteristics that make a place unique and recognizable, is an essential element so that proximity is not only function-related but also identity-driven, considering the size of the area to be connected.

Urban continuity should be identified through a participatory process involving the key stakeholders of that specific area.

The participation process, as with any transformation effort, should engage the main actors, ensuring that those who will use the spaces and services can not only accept the changes but also actively support their success.

The organization of proximity areas should be managed by an entity responsible for overseeing management and monitoring. To ensure that all participants in the proximity process are adequately connected, it is beneficial to establish an organization dedicated to managing and maintaining these proximity spaces also with the support of IT technologies.

To achieve the goal of reaching services within 20 minutes, it is necessary to create or improve pedestrian and cycle paths that are pleasant, attractive, healthy, and livable. Facilitating proximity requires not just the creation of pedestrian and cycling connections, but also the development of inviting and appealing routes linked to open spaces, squares with quality designs, furnishings, artworks, and amenities.

To ensure that everyone—seniors, children, people with disabilities—can reach services within 20 minutes, the use of electric public transport should be promoted.

In addition to creating appealing routes, it is important to make them as inclusive as possible, including routes for small electric minibuses to accommodate vulnerable people and children. Pedestrian and cycle paths, as well as those for electric minibuses, should be designed with appropriate separation.

To foster proximity, it is crucial to build communities through actions, policies, and projects that encourage people to come together.

It is also necessary to promote initiatives that bring people together, supporting communities of citizens who can collaborate to transform small areas or buildings into reinvented spaces for social interaction.

Proximity should be approached with a perspective of temporal and spatial flexibility, meaning adaptability to the unique characteristics of places and the changing needs of users. Proximity services include:

Commercial services: food stores offering a full range of food categories, retail shops providing essential daily goods, local markets, and repair and cleaning services (laundries, tire changes, etc.);

Health services: clinics, medical centres for blood tests, blood pressure monitoring, medications, vaccinations, sociological consultations, and all necessary services for preventive care and social and health needs;

Educational services: nursery schools and schools of all levels;

Cultural services: neighbourhood libraries, pop-up reading points, small theatres, and exhibition galleries;

Leisure services: attractive, livable public spaces with activities for all age groups and abilities;

Sports services: gyms, outdoor sports facilities, playgrounds, and spaces for inclusive physical activities;

Catering services: restaurants, bars, and dining establishments;

Pet-related services: off-leash areas and play spaces dedicated to dogs;
Care and well-being services: shops and centres focused on beauty and personal care;
Digital services: ensuring digital coverage throughout the area;
Work services: co-working spaces;
Waste collection services: designated areas for convenient and accessible waste separation;
Worship and religious services: churches, oratories, and places of worship.

Services should be located in existing buildings, focusing on regeneration and multipurpose use of the spaces. To avoid land consumption, physical services should be housed in existing buildings, designed for multi-use at different times of the day, allowing a single building to serve multiple purposes.

The proximity of services should be integrated with access to green spaces and open areas. Green spaces are another crucial element in constructing proximity, envisioned as part of a network connecting existing green areas with naturalized urban spaces, creating pathways that promote public health. Additionally, the creation of local urban gardens should be considered.

Identity continuity areas should feature signage and billboards, including digital ones, indicating services, activities, and points of interest reachable within 15-20 minutes.To enhance orientation and provide a unified visual identity in the proximity neighbourhood, appropriate signage and billboards should be installed, making it easy to identify places and services that can be reached quickly. Digital tools such as QR codes can be integrated into signage, offering additional information on proximity services.

Proximity plays a crucial role in the valorization of places and cultural resources from an inter-scalar and multi-scalar network perspective.

Proximity can serve as an opportunity to highlight lesser-known cultural resources, such as murals, small sculptures, and landscapes, which could be better appreciated when linked to pedestrian and cycling paths.

Finally, the new polarities created through proximity will contribute to forming new territorial models that help shape new urban identities, which will harmonize with existing ones. The pathways established to achieve proximity will ultimately create new centers of activity, leading to the emergence of new ideas and identities that intersect with, rather than replace, the old ones.

7. Conclusions

This study, conducted as part of the 2020 SUMMA PRIN and the LOVE Sapienza research projects, seeks to establish comprehensive guidelines for creating resilient, healthy, and adaptable urban spaces, with a particular focus on co-design and proximity. At its core, the research explores proximity regeneration, a concept that emphasizes the creation of urban environments where residents can access essential services, work opportunities, and recreational activities within a 20-minute walk or bike ride. This notion of a "city of proximity" is underpinned by several key principles: flexibility in the use and repurposing of spaces, inclusion to ensure that the benefits of proximity reach all societal groups—especially the vulnerable—and accessibility, with an emphasis on well-connected public spaces that foster social cohesion and interaction.

Co-design plays a critical role in realizing the vision of proximity-based urban planning. By involving stakeholders—including residents, local authorities, and urban planners —in the planning process, co-design ensures that the resulting urban spaces align with the specific needs, expectations, and lived experiences of the

community. Proximity, in this context, goes beyond geographical closeness; it extends to social, cultural, and emotional dimensions. The ability of urban planners to work in close partnership with the community fosters trust, empathy, and mutual understanding, which are crucial for the success of urban regeneration projects.

The empirical component of the study centers on the redevelopment of the former Rome fairgrounds, a site that has been inactive since its closure in 2006. The transformation of this area exemplifies how proximity and co-design can work in tandem to regenerate underutilized urban spaces. A detailed analysis of the site's history, including the 2011 amendment to Rome's 2008 General Plan, highlighted the importance of maintaining a strong connection between new developments and existing urban fabric. The 2015 public participation process, led by the Rome municipality, further reinforced the need for inclusive planning that prioritizes community involvement. Through workshops and consultations, local residents were able to voice their needs, resulting in a more people-centered approach to the redevelopment.

The findings from the 2022-24 "Urban Planning" and "Public Space and Proximity" Courses at DICEA, Sapienza University of Rome, further support this approach. The project interventions developed during these courses aligned with the principles of proximity, included proposals for new housing, green spaces, and services that emphasize walkability and bikeability, creating a neighborhood that is both sustainable and accessible. Flexibility is also a central theme, with the design allowing for multifunctional spaces that can evolve over time to meet changing community needs. This adaptability ensures that the project remains relevant in the long term, reflecting the evolving nature of urban life.

In 2023, a design competition was launched as part of a redevelopment agreement signed in September 2023 between Rome Capital and the Orchidea Fund, which acquired the site in 2021. The winning project, announced on September 6, 2024, is called *La città della gioia* and developed by Acpv Architects, Arup, Asset, and P'Arcnouveau. It aims to revitalize the neighborhood by integrating the new area with the existing urban fabric, focusing on sustainability in every aspect. The main goal is to create a harmonious connection between public and private spaces, fostering synergies that meet the needs of the local community and enhance the urban environment. A key feature is that 50% of the area will be dedicated to green spaces and services, with a soil permeability increase of about 3.9 hectares, transforming the site into a green lung for the neighborhood and promoting livability.

The masterplan includes two new public squares: Piazza del Sole to the north, on viale Tor Marancia, and Piazza degli Eventi to the south, on via Georgofili. These pedestrian areas will be complemented by commercial services, social housing, and office spaces, supporting a community-oriented lifestyle. An innovative aspect of the project is the creation of a knowledge and growth hub in collaboration with Roma Tre University, designed to be a cultural and educational reference point for young people and the wider community.

The proposed green areas and services will cover approximately 39,500 sqm, including fitness zones, a multifunctional playground, picnic areas, and event spaces to foster social interaction and attract visitors (AA.VV., 2024). The project is conceived as a dynamic system of interconnected elements, designed to respond effectively to residents' needs while promoting long-term environmental and sustainable growt (Grilli, 2024).

These results are consistent with the project interventions proposed during the mentioned Courses and validate the Principles of the Proximity neighbourhood (Sepe, 2024), which serves as a comprehensive tool for designing and evaluating

proximity in urban areas. The principles are intended to be flexible, adaptable, and inclusive, ensuring that proximity-based development can respond to the unique needs of different communities. It emphasizes the importance of ongoing engagement with residents to maintain relevance and flexibility over time. The principles of proximity neighbourhoods are designed to be updated as needed, allowing for continuous refinement as cities evolve. This adaptability is key to ensuring that urban spaces remain inclusive, accessible, and resilient in the face of rapid social, economic, and environmental changes.

In conclusion, co-design and proximity are deeply interconnected in the creation of sustainable, people-centered urban spaces. By fostering close collaboration between urban planners and communities, the principles of proximity can be effectively integrated into urban regeneration projects, ensuring that they are both contextually appropriate and adaptable to future challenges. This study underscores the importance of proximity as not only a spatial concept but also a social and cultural one, vital for creating urban environments that are truly responsive to the needs of their inhabitants.

Notes

1. Techears of the 2022-23 Urban Planning Course were Prof. Claudia Mattogno and Prof. Marichela Sepe; Techears of the 2023-24 Urban Planning Course was Prof. Marichela Sepe and tutors were Giulia Luciani and Elena Paudice. Teacher of the 2023-24 Public space and proximity course was Prof. Marichela Sepe.
2. The Charter, ideated by Marichela Sepe, was presented in the framework of the Biennale's event titled *Co-design proximity/Co-progettare la prossimità*, coordinated by Ezio Manzini, Carmen Giannino and Marichela Sepe.

Acknowledgments

Italian Ministry of University and Research (MUR) in the framework of the Project PRIN2020 #20209F3A37; Sapienza University of Rome in the framework of the "LOVE Sapienza" research project.

Conflicts of Interest

The authors declare no conflict of interest.

Originality

The authors declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere, in English or any other language. The manuscript has been read and approved by all named authors and there are no other persons who satisfied the criteria for authorship but are not listed. The authors also declare to have obtained the permission to reproduce in this manuscript any text, illustrations, charts, tables, photographs, or other material from previously published sources (journals, books, websites, etc).

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