

CONNECTING UNDERUSED PUBLIC SPACES THROUGH GREEN INFRASTRUCTURE: A FRAMEWORK FOR ENHANCING PUBLIC SPACE QUALITY

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Abstract

Underused public spaces are increasingly recognized not merely as residual or deficient urban fragments, but as spatial conditions characterized by latent potential for social, ecological, and spatial transformation. This paper investigates how green infrastructure can function as a multidimensional connectivity mechanism capable of reactivating and integrating such spaces within broader urban systems. The research develops a theoretical framework that conceptualizes underused public spaces as relational and socially produced conditions emerging from disconnections between spatial form, accessibility, programmatic structure, and everyday practices. Building upon theories of urban voids, relational urbanism, landscape urbanism, and public space theory, the study argues that the latent potential of underused spaces can be operationalized through systems of connectivity.

The paper positions green infrastructure not solely as an ecological strategy, but as an operative urban design mechanism structured through spatial, ecological, social, and perceptual connectivity. To operationalize this relationship, the research develops a typology of connectivity strategies consisting of linear, nodal, and hybrid systems, demonstrating how fragmented and underperforming spaces may function as connective elements within urban networks. Furthermore, the study establishes an integrated analytical framework linking connectivity dimensions to public space quality dimensions, including spatial, functional, social, and perceptual qualities.

The framework suggests that public space quality emerges relationally through interactions between urban systems rather than through isolated site characteristics alone. The study contributes to contemporary urban design and landscape urbanism discourse by redefining green infrastructure as a relational framework through which latent spatial potential can be transformed into active urban performance and distributed public space quality.

Keywords: underused public spaces; latent spatial potential; green infrastructure; connectivity; public space quality; landscape urbanism; urban networks; relational urbanism.

Introduction

Contemporary cities increasingly contain fragmented, residual, and underperforming public spaces that remain disconnected from broader systems of urban life. Traditionally described through terms such as urban voids, lost spaces, leftover landscapes, or terrain vague, these spaces have often been interpreted as signs of spatial failure, functional deficiency, or incomplete urbanization (Trancik, 1986). However, recent urban theory has progressively shifted this perspective, reframing underused public spaces not as passive residual conditions, but as spaces characterized by unrealized spatial, social, ecological, and relational capacities. This shift reflects broader transformations within urban design and planning discourse, where cities are increasingly understood as dynamic and networked systems rather than collections of isolated objects. Within this framework, the quality and performance of public spaces depend not only on their internal characteristics, but also on their relationships with surrounding urban structures, ecological systems, movement networks, and social practices. Consequently, underuse can no longer be interpreted solely as an absence of activity, but rather as a relational condition emerging from spatial disconnection, programmatic mismatch, limited accessibility, or weak integration within the urban fabric. At the same time, contemporary landscape urbanism and green infrastructure theory have emphasized the importance of connectivity as a structuring principle capable of reorganizing fragmented urban environments. Green infrastructure, understood as a strategically planned network of natural and semi-natural spaces, has evolved beyond its ecological origins into a multidimensional urban design framework that integrates environmental, spatial, social, and perceptual functions within

interconnected systems (Benedict and McMahon, 2006; Mell, 2017). Within this interpretation, underused spaces are no longer perceived as isolated anomalies, but as potential nodes, corridors, or connectors capable of reinforcing urban continuity and public life. Despite the growing recognition of connectivity within urban theory, the relationship between green infrastructure connectivity and public space quality remains insufficiently operationalized. Existing literature frequently addresses public space quality and connectivity as parallel concepts, without clearly defining the mechanisms through which connectivity contributes to qualitative spatial outcomes. Furthermore, many studies continue to focus primarily on large-scale parks or ecological corridors, while smaller, fragmented, and underused public spaces remain underexplored within broader networked systems.

This research addresses this gap by developing a theoretical and analytical framework that links underused public spaces, green infrastructure connectivity, and public space quality. The study is structured around four main objectives: (1) to conceptualize underused public spaces as spatial conditions characterized by latent potential; (2) to define green infrastructure connectivity as a multidimensional urban design mechanism; (3) to develop a typology of connectivity strategies consisting of linear, nodal, and hybrid systems; and (4) to establish an integrated framework linking connectivity dimensions to public space quality dimensions.

The paper argues that connectivity functions as the critical mediating mechanism through which latent spatial potential becomes active urban performance. Through this perspective, public space quality is redefined not as a fixed attribute of isolated sites, but as a relational condition emerging through interactions between spatial systems, ecological processes, social practices, and perceptual experiences. By repositioning green infrastructure as a multidimensional connectivity framework, the research contributes to contemporary urban design and landscape urbanism discourse, offering a conceptual basis for understanding how fragmented and underused public spaces may be transformed into active components of resilient and interconnected urban systems.

1. Conceptualizing underused public spaces as a spatial condition with latent potential

Underused public spaces have increasingly been examined within urban theory not merely as residual or deficient elements, but as spatial conditions embedded within broader socio spatial systems. Traditionally described through terms such as *urban voids*, *lost spaces*, or *terrain vague*, these spaces include vacant lots, abandoned sites, leftover infrastructures, and poorly activated public environments (Trancik, 1986; Hwang and Lee, 2019). Rather than being neutral or passive, such spaces are now understood as products of urban processes, reflecting shifts in planning paradigms, socio-economic transformations, and spatial mismatches within the city.

Recent literature reframes these spaces as sites of unrealized capacity, where the absence of intensive use does not indicate absence of value, but rather a condition of latent potential for spatial, social, and ecological transformation (Rossi, 2025; Iannizzotto, 2023). These perspectives emphasize that underused spaces occupy critical positions within the urban fabric and can contribute to urban resilience, connectivity, and public life when appropriately reinterpreted and reintegrated.

This reconceptualization requires a shift from static definitions toward a process-oriented understanding, where underuse is not a fixed category but an outcome of dynamic interactions between spatial form, social practices, and institutional frameworks. Within this context, three interrelated theoretical positions are essential: underuse as a relational mismatch, space as socially produced and dynamic, and latent potential as a basis for transformation.

Empirical work supports this framing. Research on schoolyards in North Macedonia demonstrates that hard surfaces, limited greenery, and low functional diversity restrict meaningful use to brief intervals, despite strong user demand for green play areas, outdoor classrooms, and varied activity zones (Dehari et al., 2022). These findings highlight both the constraints and the unrealized capacity inherent in underutilized environments.

1.1 Underuse as a relational mismatch: Urban studies literature demonstrates that public spaces function through complex interactions involving accessibility, program, perception, and social inclusion. When these elements are not aligned, spaces fail to reach their intended or potential levels of use (Li, 2022). For example, a space may be physically accessible but socially exclusive, or spatially adequate but programmatically deficient, resulting in underuse despite apparent availability .

This relational understanding is further supported by the concept of “everyday urbanism”, where spaces become meaningful through lived practices rather than design intentions alone. Margaret Crawford argues that underused or informal spaces often emerge from a mismatch between planned functions and actual social appropriation, where users redefine space through everyday activities . In this sense, underuse reflects not simply inactivity, but a disjunction between imposed spatial order and lived spatial practices. (Crawford, 1999).

Similarly, theories of urban voids identify underused spaces as products of structural and morphological fragmentation, often resulting from modernist planning approaches that prioritize objects (buildings) over relational spatial systems (Trancik, 1986). These spaces are therefore not accidental but are generated through systemic processes that disrupt spatial continuity and social engagement.

Thus, underuse can be conceptualized as a condition arising from the misalignment between spatial form, accessibility, programmatic structure, and social practices, resulting in a gap between a space’s potential capacity and its actual use.

1.2 Space as a socially produced and dynamic construct

The second key theoretical foundation lies in understanding space not as a passive container, but as a socially produced and dynamic construct. This perspective is grounded in the work of Henri Lefebvre, who argues that space is continuously produced through the interaction of physical structures, social relations, and symbolic meanings (Lefebvre 1991). According to Lefebvre, space operates through a triadic structure: perceived space, conceived space, and lived space. Within this conceptualization, underused spaces emerge when these three dimensions are out of sync. For instance, a space may be well-designed (conceived space) but poorly integrated into everyday routines (spatial practice), or it may lack symbolic meaning for users (lived space), resulting in diminished engagement.

Further support comes from place theory, which emphasizes the role of cognitive and affective relationships between users and spatial environments. Research shows that user behavior in public space is shaped by perception, memory, and emotional response to spatial qualities, indicating that spatial use is deeply tied to experiential and cultural factors (SAIDI QAZIMI, 2025; Saidi et al., 2021; Saidi et al. 2024).

Additionally, urban design theory, particularly through Carmona’s multidimensional framework, reinforces the idea that spatial performance is shaped by interacting morphological, functional, social, perceptual, and temporal dimensions (Carmona et al., 2010). Underuse, therefore, cannot be attributed to a single factor but must be understood as a multi-dimensional condition embedded in dynamic urban systems.

This leads to the understanding that underused public spaces are not static failures, but temporally evolving spatial conditions, shaped by shifting socio-spatial relations, governance structures, and patterns of use.

1.3 Latent potential as a basis for transformation: The third conceptual dimension reframes underused spaces as sites of latent potential, emphasizing their capacity for transformation rather than their current limitations. This perspective is central to contemporary urban design and planning approaches that prioritize adaptability, resilience, and incremental transformation.

Urban voids and residual spaces are increasingly recognized as strategic resources for regeneration, offering opportunities for ecological integration, social activation, and spatial connectivity (Hwang and Lee, 2019).

The concept of *terrain vague* further reinforces this idea, describing abandoned or undefined spaces as hybrid environments where urban, natural, and social processes intersect. These spaces are valued precisely for their indeterminacy, which allows for experimentation, adaptability, and alternative forms of occupation. Similarly, contemporary planning discourse highlights the role of community appropriation and informal practices in activating underused spaces. Residual spaces can become collective resources when reclaimed by communities, demonstrating that transformation does not always require formal redevelopment but can emerge through bottom-up processes. Importantly, the latent potential of underused spaces is not only spatial but also relational and systemic. These spaces often occupy critical positions within urban networks between infrastructures, neighborhoods, or ecological systems, allowing them to function as connective elements that enhance urban continuity and public space quality. Thus, latent potential can be defined as the embedded capacity of underused spaces to accommodate new functions, relationships, and meanings, enabling their transformation into active components of the urban system.

From latent spatial potential to connectivity

The reconceptualization of underused public spaces as relational, socially produced conditions with latent potential establishes a critical theoretical foundation for understanding how such spaces can be activated within the urban system. However, while this perspective reveals the *existence* of unrealized capacities, it does not in itself provide a mechanism for their activation or integration. The question that emerges, therefore, is not only *what underused spaces are*, but *how their latent potential can be operationalized within the broader urban fabric*.

This transition requires a shift from diagnosis to strategy, from identifying underuse as a spatial condition to defining processes capable of transforming and reconnecting these spaces. Within contemporary urban theory and practice, green infrastructure has increasingly been positioned as such a mechanism, offering a framework through which fragmented, residual, and underperforming spaces can be re-integrated into coherent spatial, ecological, and social networks (Benedict and McMahon, 2006; Mell, 2017).

2.1 Connectivity as the missing link between potential and performance: As established in the previous section, underused spaces are characterized by a mismatch between spatial capacity and actual use. This mismatch is often not solely a result of internal deficiencies, but of disconnection from surrounding urban systems, from flows of movement, and from networks of activity and meaning. In this sense, underuse can be interpreted as a symptom of spatial isolation, where spaces remain physically present but functionally and relationally detached (Ferati et al., 2019). Research on Tetovo's hidden urban network demonstrates how informal threshold systems generate alternative forms of spatial continuity and social connectivity beyond formal urban infrastructure (Limani, 2023).

Urban design theory has long emphasized the importance of connectivity in shaping spatial performance. Jane Jacobs highlights how active urban life depends on continuous networks of movement, visibility, and interaction (Jacobs, 1961), while Kevin Lynch demonstrates that

legibility and use are strongly influenced by the structural coherence of urban systems (Lynch, 1960). When such continuity is disrupted, spaces tend to become marginalized, underused, or socially disengaged.

From this perspective, the latent potential of underused spaces is not only embedded within their internal spatial qualities, but also within their capacity to be reconnected. Connectivity, therefore, becomes the critical mediating concept that links *potential* to *performance*, transforming isolated fragments into active components of a larger system.

2.2 Connectivity as an operative principle in urban systems: The emphasis on connectivity aligns with broader urban theory, which conceptualizes cities as networked systems rather than collections of isolated objects. Manuel Castells describes the contemporary city as structured through flows of information, people, and resources (Castells, 1996), while James Corner highlights the role of landscape in organizing these flows through flexible, adaptive systems (Corner 2006).

Within this framework, underused public spaces previously defined as relational mismatches with latent potential can be understood as disconnected nodes within urban networks. Their transformation, therefore, depends not only on internal redesign but on their repositioning within systems of connectivity.

Green infrastructure as connectivity: A multi dimensional urban design mechanism

Green infrastructure provides a conceptual and operational framework through which this reconnection can occur. Defined broadly as a strategically planned network of natural and semi-natural spaces, green infrastructure integrates ecological, social, and spatial functions within a unified system (Benedict and McMahon, 2006).

Importantly, green infrastructure is not limited to large-scale parks or ecological corridors. Contemporary interpretations emphasize its multi-scalar and multi-functional nature, encompassing a wide range of spatial elements, including small, residual, and underused spaces, when they are connected into a broader network (Mell, 2017). This makes it particularly relevant for addressing the condition of underused public spaces, which often exist as fragmented and discontinuous elements within the urban fabric. Within this framework, connectivity operates across multiple dimensions: Spatial connectivity, ecological connectivity, social connectivity, perceptual connectivity. These dimensions align closely with the multi-dimensional nature of underuse identified earlier (Carmona et al., 2010), suggesting that green infrastructure can address not only physical fragmentation but also functional, social, and perceptual disconnections.

3.1 Reinterpreting underused spaces as nodes within green networks: A key conceptual shift enabled by green infrastructure is the reinterpretation of underused spaces from isolated residual fragments into potential nodes within a networked system. Rather than requiring complete transformation or redevelopment, these spaces can be incrementally integrated through connective strategies that enhance their accessibility, visibility, and functionality (Ferati et al., 2019).

This perspective resonates with landscape urbanism approaches, which emphasize the role of landscape as an organizing structure for urban systems, capable of accommodating change over time (Waldheim, 2006). Within this approach, underused spaces are not anomalies to be erased, but opportunities to extend and reinforce spatial continuity. Furthermore, the concept of “loose space” (Franck and Stevens, 2007) suggests that the openness and indeterminacy of underused spaces can be an asset within networked systems, allowing for flexible and adaptive uses. When connected through green infrastructure, such spaces can support diverse forms of occupation,

contributing to both everyday urban life and ecological performance. Also informal threshold systems may function as micro-connective elements that strengthen social interaction and spatial permeability within neighbourhood structures (Limani, 2025).

3.2 Typology of green infrastructure connectivity strategies: To operationalize green infrastructure as a connectivity mechanism, it is necessary to define distinct yet complementary spatial strategies. Based on urban design and landscape theory, three primary typologies can be identified: linear, nodal, and hybrid connectivity.

3.2.1 Linear Connectivity; Linear connectivity refers to continuous spatial systems that link multiple urban elements through corridors or pathways. These may include greenways, ecological corridors, pedestrian routes, or riverfront systems. The key characteristics are intended to enable continuity and directionality, movement oriented structure and linking of dispersed elements.



Fig. 1: Linear green infrastructure corridor integrated within the dense urban fabric of Bucheon, South Korea. Adapted from By Beatrice Ch'ng, Ecomobility Officer, ICLEI – Local Governments for Sustainability.

Linear systems align with Kevin Lynch's concept of *paths* as primary structuring elements of urban experience, as well as ecological corridor theory, which emphasizes continuity for biodiversity and environmental flows (Lynch, 1960). Underused spaces can be integrated as segments within linear systems, transforming isolated fragments into active connectors within the city.

3.2.2 Nodal Connectivity: Nodal connectivity focuses on strategic points of concentration, where activities, flows, and interactions converge. These include squares, schoolyards, parks, and community hubs. This type of connectivity detects the concentration of activity, and connection between them attempts for social interaction and gathering.

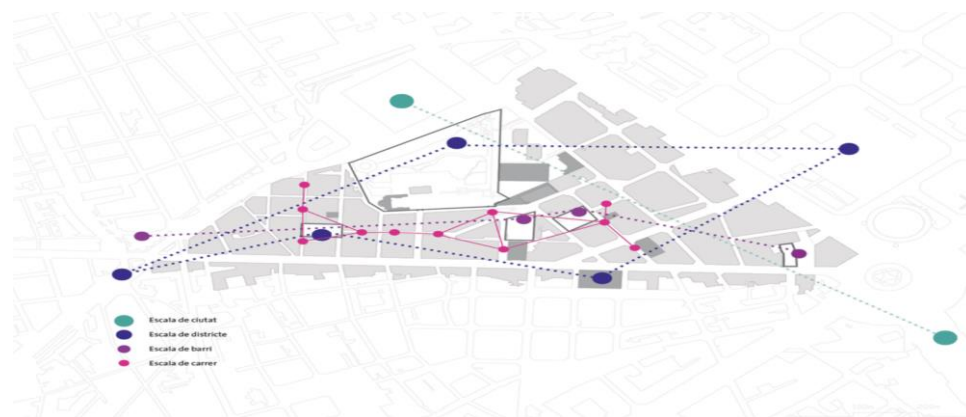


Fig.1 Nodal connectivity within the urban public space network in Barcelona. Adapted from konstantina (2020). Qualitative analysis of Sants-Hostafrancs public realm - *estel.

Nodes correspond to Lynch's *nodes* and to Jane Jacobs's emphasis on intensity and diversity of use as drivers of urban vitality. (Lynch, 1960; Jacob, 1961) Underused spaces can be reactivated as nodes, serving as anchors within a broader network, particularly at the neighbourhood scale.

3.2.3 Hybrid Connectivity: Hybrid connectivity combines linear and nodal systems into integrated networks, where corridors connect multiple nodes, and nodes reinforce the network structure.



Fig.3: Madrid Río as a hybrid connectivity system. Adapted from: Madrid Río Project Documentation.

This typology aligns with landscape urbanism (Corner, 2006; Waldheim, 2006), which views urban space as relational fields rather than discrete objects. Hybrid systems allow underused spaces to function simultaneously as: destinations (nodes) and connectors (links).

Connectivity and public space quality: Toward an integrated analytical framework

4.1 From connectivity to quality: While green infrastructure has been widely discussed as a strategy for enhancing urban environments, its role as a mechanism for improving public space quality remains insufficiently operationalized. Existing literature often addresses connectivity and quality as parallel concepts, without explicitly defining the relational mechanisms through which connectivity produces qualitative spatial outcomes (Carmona et al., 2010; Gehl, 2011). Building on the previous chapters where underused public spaces were conceptualized as latent spatial potential, and green infrastructure was defined as a multi-dimensional connectivity mechanism, this chapter establishes a framework that directly links connectivity to public space quality. The central argument is that connectivity is not merely a spatial property, but a structuring condition that enables, enhances, and redistributes public space quality across the urban system. This chapter therefore shifts the analytical focus from what spaces are to how they perform within networks, providing a tool for evaluation, comparison, and design intervention.

4.2 Defining public space quality as a multi-dimensional construct: Drawing on Carmona and Gehl, public space quality can be structured through four interrelated dimensions:

1. Spatial (Morphological) quality
Clarity of form, spatial continuity, enclosure, and integration within the urban fabric
2. Functional quality
Diversity of activities, accessibility, adaptability, and intensity of use
3. Social quality

Inclusivity, interaction, safety, and capacity for collective life

4. Perceptual quality

Legibility, identity, comfort, and sense of place, (Carmona et al., 2010; Gehl, 2011).

4.3 Connectivity as a structuring condition of quality: Connectivity fundamentally reshapes how public space quality is produced and distributed. Rather than emerging solely from internal design characteristics, quality is increasingly understood as relational, dependent on how spaces are positioned within broader networks.

Urban theory supports this relational perspective. Jane Jacobs demonstrates that vibrant public life depends on continuous systems of movement and interaction (Jacobs, 1961), while Jan Gehl emphasizes that accessibility and connectivity are prerequisites for sustained social activity (Gehl, 2011). Within this framework, connectivity operates through several key mechanisms: access, flow, linkage and integration. Thus, connectivity can be understood as a relational mechanism that enhances the capacity of public spaces to support use, interaction, and environmental performance.

4.4 Framework structure: linking connectivity to public space quality To operationalize this relationship, the framework is structured as a matrix that links connectivity dimensions with public space quality dimensions.

4.4.1 Connectivity Dimensions; Rather than functioning as isolated green interventions, the findings indicate that green infrastructure operates through interconnected forms of connectivity that directly correspond to the multidimensional structure of urban space quality articulated by Carmona. Within this framework, four interrelated dimensions of connectivity can be identified:

Spatial connectivity, supporting continuity, permeability, and accessibility across the urban fabric

Ecological connectivity, enabling environmental flows, biodiversity support, and microclimatic regulation

Social connectivity, facilitating movement, interaction, inclusivity, and collective urban life

Perceptual connectivity, reinforcing legibility, identity, spatial coherence, and sense of place

Tab.1: Evaluation matrix linking connectivity to corresponding dimensions of public space quality

Connectivity	Quality			
	Spatial quality	Functional quality	Social quality	Perceptual quality
Spatial Connectivity	Enhances continuity and integration	Improves accessibility and usability	Supports movement and encounter	Strengthens spatial legibility
Ecological Connectivity	Improves environmental structure	Supports climate-responsive use	Enhances comfort and wellbeing	Reinforces natural identity
Social Connectivity	Activates spatial interfaces	Increases diversity of activities	Strengthens interaction and inclusion	Enhances sense of belonging
Perceptual Connectivity	Clarifies spatial organization	Supports intuitive use	Reduces perceived insecurity	Strengthens imageability

4.4.2 Framework matrix: The framework suggests that connectivity should be understood as a relational mechanism through which different dimensions of urban space interact and reinforce one another. From this interpretation, three key insights emerge:

1. Public space quality as a relational condition

The framework indicates that public space quality cannot be evaluated only through the internal characteristics of individual sites. Instead, quality emerges through the relationships that spaces establish with surrounding urban systems, movement networks, ecological structures, and social activities. In this sense, urban spaces do not operate as isolated entities, but as interconnected components within broader relational systems.

2. Connectivity as a multi-dimensional performance multiplier

Connectivity has the capacity to simultaneously enhance multiple dimensions of spatial performance. A single intervention such as a green corridor, pedestrian linkage, or ecological pathway may improve accessibility, strengthen ecological continuity, encourage social interaction, and reinforce perceptual coherence at the same time. Connectivity therefore operates as a multiplier through which spatial, environmental, social, and experiential qualities become mutually reinforcing.

3. Underused spaces as strategic nodes within urban systems

The findings further reveal that through integration into systems of spatial, ecological, social, and perceptual connectivity, these fragmented or underperforming spaces can transition from residual conditions into active urban components. Their latent potential lies precisely in their capacity to reinforce continuity and establish new relationships across the urban fabric.

The framework developed through this research departs from conventional approaches that evaluate public space primarily through the internal qualities of individual sites. Instead, it proposes that public space quality emerges relationally, through the interaction between spatial systems, ecological processes, movement structures, social practices, and perceptual experiences. In this sense, quality is not treated as a fixed or isolated attribute, but as a dynamic condition produced through connections operating across multiple urban dimensions. Within

this interpretation, connectivity functions as the central operative mechanism through which latent spatial potential becomes active urban performance. The framework therefore repositions green infrastructure beyond its conventional ecological role, redefining it as a multidimensional urban design system capable of organizing relationships across the urban fabric.

At the same time, the framework acknowledges that connectivity does not automatically generate quality. The effects of connectivity depend on the balance between spatial integration, programmatic activation, ecological performance, and social appropriation. Highly connected spaces may still remain underused when lacking meaningful activities, symbolic identity, or experiential qualities. The study therefore contributes to contemporary urban design and landscape urbanism discourse by redefining green infrastructure as a system of multidimensional connectivity through which public space quality is produced, distributed, intensified, and sustained across the urban fabric.

Conclusion

This research set out to investigate how underused public spaces can be reinterpreted and transformed through green infrastructure connectivity in order to enhance public space quality. Moving beyond conventional understandings that frame underused spaces as residual deficiencies or inactive urban fragments, the study conceptualized these environments as relational spatial conditions characterized by latent potential. Through this perspective, underuse was understood not as a fixed or inherent property of space, but as a condition emerging from disconnections between spatial form, accessibility, social practices, ecological systems, and urban networks.

Building upon this theoretical foundation, the research identified connectivity as the critical mechanism capable of activating and operationalizing latent spatial potential. The study demonstrated that the limitations of underused public spaces frequently stem not only from internal spatial deficiencies, but from broader forms of fragmentation and isolation within the urban fabric. Consequently, the transformation of such spaces depends not solely on localized redesign interventions, but on their reintegration into systems of movement, ecology, perception, and collective urban life.

Within this context, green infrastructure was redefined as a multidimensional urban design mechanism structured through spatial, ecological, social, and perceptual connectivity. Rather than functioning exclusively as an environmental strategy, green infrastructure was positioned as a relational framework capable of organizing interactions across urban systems. Through the development of linear, nodal, and hybrid connectivity typologies, the study illustrated how fragmented and underused spaces may function simultaneously as connectors, destinations, ecological interfaces, and social anchors within broader urban networks.

The analytical framework developed through the research further demonstrated that public space quality emerges relationally through connections operating across multiple dimensions of urban space. Spatial continuity, ecological integration, social interaction, and perceptual coherence were shown to function not as isolated qualities, but as interdependent conditions reinforced through connectivity. In this sense, connectivity acts as a multidimensional performance multiplier, enabling a single intervention to generate simultaneous spatial, environmental, social, and experiential benefits.

Importantly, the research also acknowledges that connectivity alone does not automatically guarantee quality. The effectiveness of connectivity depends on the balance between accessibility, programmatic activation, ecological performance, social appropriation, and experiential meaning. Highly connected spaces may still remain underused when lacking identity, inclusivity, or meaningful forms of occupation. Therefore, the production of public

space quality requires not only physical integration, but also the capacity to support diverse forms of urban life and collective experience.

The contribution of this study lies in redefining green infrastructure beyond its conventional ecological interpretation and positioning it as a multidimensional relational system through which public space quality can be produced, distributed, intensified, and sustained across the urban fabric. By linking latent spatial potential, connectivity, and public space quality within a unified framework, the research provides a conceptual and analytical basis for future urban design strategies aimed at transforming fragmented and underused public spaces into active and interconnected components of resilient urban systems.

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