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Prof. Dr. Sertaç GÜNGÖR

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CHAPTER 1

EXPERIMENTAL OPEN SPACE PRODUCTION AT THE INTERSECTION OF NATURE, ART, AND DESIGN

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INTRODUCTION

Today, open space design is regarded as a multilayered field of design that extends beyond the mere organization of physical environments responding to users' functional needs, incorporating dimensions of aesthetics, experience, perception, and environmental awareness simultaneously (Alpak & Sezgin, 2025, Yavuz, 2015). Within this framework, landscape architecture encompasses the arrangement of open spaces of varying scales and characteristics in accordance with users' demands and needs, while also aiming to establish meaningful relationships among spatial components in order to produce a strong sense of unity (Düzenli & Alpak, 2020; Sezgin & Alpak, 2025). Similarly, the literature on environmental aesthetics argues that nature and environment are comprehended not only visually, but also through knowledge, perception, and experience; therefore, space should be evaluated not merely as a functional setting, but as a perceptual and aesthetic whole (Carlson, 2000). This perspective demonstrates that open space is not simply a "void," but an environmental formation that is experienced, interpreted, and given meaning by its users.

This study aims to examine, from conceptual and theoretical perspectives, the production of experimental open spaces shaped within the triangle of nature, art, and design. The research is based on the assumption that open space is not merely a physical void, but a spatial formation that is continuously redefined through artistic interventions, sensory experiences, and social interactions. Within this framework, student works involving land art, environmental art, installation-based outdoor arrangements, and experience-oriented landscape designs are addressed in order to reveal how the relationship established with nature is transformed through design. The main axis of discussion in the study is to identify the ways in which experimental open space productions differ from conventional approaches to landscape and environmental design and how they generate spatial experiences. Accordingly, student projects from the Department of Landscape Architecture at Karadeniz Technical University will be examined. Environmental Design Projects are evaluated not as fixed, completed, and merely functional design objects, but as experiential fields characterized by participation, process orientation, temporality, and transformability. As a result, the study seeks to demonstrate that the interaction of nature, art, and design contributes to the development of innovative approaches in open space production, and that these approaches create stronger, more meaningful, and experiential environments by addressing the multiple dimensions of space in a holistic manner.

This transformation has enabled open space to be understood not as a fixed and completed object, but as a spatial phenomenon that is continuously reconstructed through participation, process, and experience (Yılmaz & Kurak, 2022). In particular, contemporary approaches emerging at the intersection of design and art no longer define open space solely through functions such as circulation, seating, or recreation; rather, they frame it as an experiential field shaped by sensory interaction, bodily engagement, and spatial awareness. Indeed, studies addressing the sensory design process in open spaces emphasize that environmental design in landscape architecture education is associated not only with visual perception but also with auditory, tactile, and embodied experience (Düzenli, 2022; Yılmaz & Kurak, 2024; Özkan & Özkan, 2024). Research on user-centered public spaces likewise demonstrates that experience and habitual patterns are decisive factors in spatial design, and therefore the relationship between user and space should be positioned at the core of the design process (Özkan & Yılmaz, 2019).

Within this framework, the interaction between nature, art, and design emerges as one of the principal constitutive axes of experimental open space production (Eren et al., 2018; Düzenli et

al., 2024; Özkan et al. , 2024). When the dynamic, layered, and self-transforming character of nature is brought together with the conceptual, critical, and sensory expressive power of art, and with the organizational and experience-producing capacity of design, open space ceases to be merely an arranged environment and becomes a lived setting that is felt, interpreted, and continuously reproduced. For this reason, experimental open space production, unlike conventional landscape design, approaches space not simply as a formal or functional outcome, but as an open-ended mode of production shaped through process, perception, participation, and interaction (Düzenli & Alpak, 2020; Kwon, 2002; Mumcu et al., 2017).

Nature and Art

Although the relationship between nature and art was, in different periods of art history, largely constructed around the concepts of representation, depiction, and beauty, from the second half of the twentieth century onward this relationship shifted toward forms of production that directly intervened in the environment, the land, and space itself. In particular, Land Art, which emerged in the United States in the late 1960s and spread to Europe in the 1970s, developed as an approach situated at the intersection of architecture, landscape, and art, transforming nature into not only the subject of art but also its material, ground, and context. Turkish scholarship similarly notes that Land Art is an approach that seeks to generate awareness of nature, moves art beyond the boundaries of museums and galleries, and establishes new relationships between landscape and artistic production (Tandoğan & Erdi Es, 2018). Likewise, studies conducted within the field of landscape architecture emphasize that Land Art has introduced new perspectives into landscape design and rendered the boundaries between art and design increasingly permeable in contemporary spatial production (Kökdoğan & Dönmez, 2021).

One of the most significant contributions of Land Art and environmental art practices is that they transform the artwork from an autonomous object into an experiential field intrinsically related to place. Within this approach, the work cannot be considered independently of its environment; topography, material, climate, time, and user experience become integral components of the production process (Güneroğlu et al., 2016; Yavuz & Acar, 2025). Miwon Kwon's theoretical framework on site-specific art emphasizes that place-based art cannot be separated from its context and that space should be understood not merely as a physical location, but as a cultural and experiential network (Kwon, 2002). Similarly, Rosalind Krauss demonstrates that sculpture, by exceeding the modernist limits traditionally assigned to it, has been redefined within an "expanded field" of relationships among architecture, landscape, and site (Krauss, 1979). In this way, the relationship between nature and art moves away from an understanding of landscape as something merely represented and instead becomes a spatial construct that directly produces environmental experience.

Another important dimension of the relationship between nature and art, particularly in terms of open space design, lies in its capacity to generate sensory and perceptual experience. In the field of environmental aesthetics, Carlson argues that environmental knowledge and contextual understanding are essential to the aesthetic appreciation of nature, while also demonstrating that aesthetic experience cannot be reduced to visual pleasure alone (Carlson, 2000). Studies conducted in Turkey likewise indicate that open space is perceived through the senses, and that users' relationships with the environment are formed not only through visual perception but also through touch, hearing, movement, and embodied experience (Düzenli, 2022; Yavuz, 2016). For this reason, in the production of experimental open spaces at the intersection of nature and art, space emerges not merely as a composition to be viewed, but as an environmental

field to be traversed, felt, and reinterpreted by the user (Kurdoğlu et al., 2022; Bayramoğlu & Seyhan, 2021; Şatıroğlu & Bayramoğlu, 2024).

The relationship that art establishes with nature in open space also provides an important framework for fostering creative thinking and developing alternative spatial configurations within design education. Studies discussing the impact of Land Art in landscape architecture education demonstrate that this approach encourages students to move beyond conventional design assumptions and to consider nature not as a passive background, but as an active component of design (Yılmaz, 2021; Bayramoğlu & Akıncı, 2018). Research on the environmental design projects of Trabzon Pazarkapı likewise reveals that urban open space can be interpreted as an artistic object, thereby opening spatial perception not only to use-based readings but also to aesthetic and experiential interpretations (Alpak, 2021). Accordingly, the relationship between nature and art in the production of experimental open spaces generates not only formal innovation, but also enables the establishment of stronger, multisensory, and more interpretable relationships among user, space, and environment. In the following section, the project content to be discussed within this context is examined.

Project Site and Scope

The Environmental Design Project III course offered by the Department of Landscape Architecture at Karadeniz Technical University in the Spring Semester of 2026 involves the development of a landscape design project for Fındık Altı Restaurant, located in the Yalincak–Gülyalı area of Trabzon, and for the proposed boutique hotel site in its immediate surroundings. The project site is addressed in relation to the characteristic features of the Black Sea ecosystem, the natural topographic structure, scenic landscape values, and the tourism potential of the region. Within this context, the project aims to design a semi-public open space arrangement that brings together recreational, accommodation, and gastronomic functions through an integrated approach. The site presents a distinctive spatial context in which natural landscape character intersects with tourism and service functions. For this reason, the design process prioritizes compatibility with urban identity, the evaluation of the site’s panoramic and scenic potential, and the enhancement of user experience as primary design inputs.

Approached within the framework of “Experimental Open Space Production at the Intersection of Nature, Art, and Design,” the project seeks to develop an open space system that supports the functions of both the restaurant and the boutique hotel, strengthens user experience, remains compatible with the natural environment, and embodies aesthetic, functional, and sustainable qualities. In this sense, open space is understood not merely as a physical environment serving specific uses, but as a multilayered field of spatial production shaped by the data of nature, the structuring principles of design, and the experiential and perceptual contributions of art. Accordingly, the project aims to strengthen the users’ relationship with the site not only at a functional level, but also in sensory, aesthetic, and experiential terms.

In line with this objective, students are expected to develop spatial organization decisions oriented toward tourism and recreational use. In forming this organization, it is essential to analyze the needs of different user groups—such as hotel guests, restaurant visitors, day users, and staff—and to identify the ways in which these different user profiles experience the space. Thus, the design process moves beyond an approach focused solely on the physical arrangement of the site and becomes an experience-oriented framework that takes into account the relationships users establish with time, movement, rest, social interaction, and landscape.

Within the scope of the project, the scenarization of open space activities is also considered an important design input that increases the diversity of site use. Through these scenarios, open space ceases to be a fixed and single-function area of use and is instead transformed into an adaptable environment capable of responding to changing needs and producing different user experiences at different times. In this respect, the project corresponds to the understanding of experimental open space production by addressing space not merely as a functional object of arrangement, but as a lived environment continuously reproduced through user participation, environmental perception, and aesthetic experience.

Within this framework, students are expected to produce design solutions that are both functional and identity-oriented in accordance with the principles of landscape architecture. The designs are expected to preserve and make visible the character of the natural environment, support the tourism and recreational potential of the site, and at the same time enrich the users' spatial experience. Accordingly, the project process aims at a holistic mode of open space production in which environmentally responsive data, artistic modes of expression, and the organizational power of design come together. This approach defines the most appropriate solutions for site users not only through technical and functional criteria, but also through aesthetic value, spatial identity, and experiential quality. In the following section, student works are examined within this conceptual framework.

Examination of Student Works

Concept Development

In this project, the student selected the concept of panoramic perception (Figure 1). Within this design approach, panoramic perception is understood not merely as the condition of possessing a wide field of view, but as a holistic form of spatial experience that gradually unfolds to the user through the layered organization of space. The siting decision, which takes reference from the stratified structure of the natural topography, both enables the building to be positioned in harmony with the terrain and makes possible the gradual visual opening that constitutes the basis of panoramic perception. In this context, the structure is approached not as an object imposed in opposition to the ground, but as a spatial configuration that follows the continuity of the topography and integrates with it. Thus, the user perceives space not as a fixed image consumed at a single glance, but as a landscape experience that expands, deepens, and generates multiple viewpoints through movement.

The principle of terracing plays a decisive role in strengthening panoramic perception. Transforming differences in elevation into horizontal plateaus not only increases the diversity of spatial use, but also enables the establishment of different visual relationships with the landscape from different levels. This stepped configuration generates a circulation scenario that directs the user toward the view, while also ensuring continuity between interior and exterior spaces, thereby allowing the visual experience to continue uninterrupted. For this reason, panoramic perception can be defined not merely as a perspective opening toward a particular view, but as a dynamic perceptual organization produced through movement, orientation, and spatial transitions.

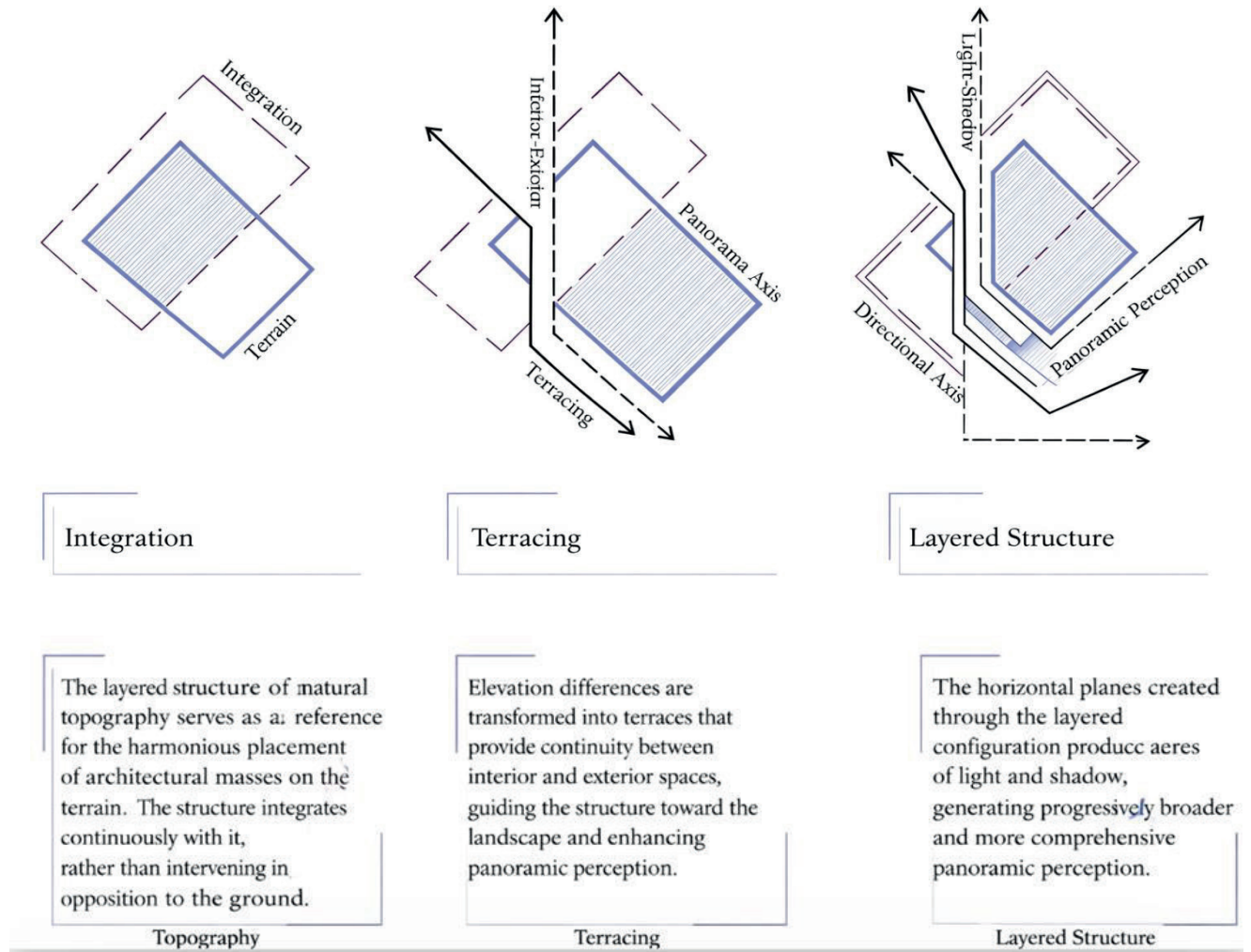


Figure 1. Identified Conceptual Scheme

At the same time, panoramic perception is related not only to the visual qualities of space, but also to its experiential dimension. The horizontal planes formed through the layered configuration create contrasts of light and shadow, giving the space depth, rhythm, and temporal variability. This allows the user to experience the space differently at different times of day and from different positions. Thus, panoramic perception moves beyond being a mode of seeing directed solely toward a distant landscape and becomes a multilayered form of environmental awareness shaped by the combined effects of light, shadow, orientation, threshold, and movement. As a result, this selected concept offers the user a broad, continuous, and sensorially enriched perception of open space through a terraced and experience-oriented spatial configuration that is harmoniously integrated with the natural topography.

Design Stages

Based on the selected concept, as well as the analyses, syntheses, and sketches produced throughout the process, the student developed the site use planning that illustrates the proposed design decisions and activities, as presented in Figure 2.

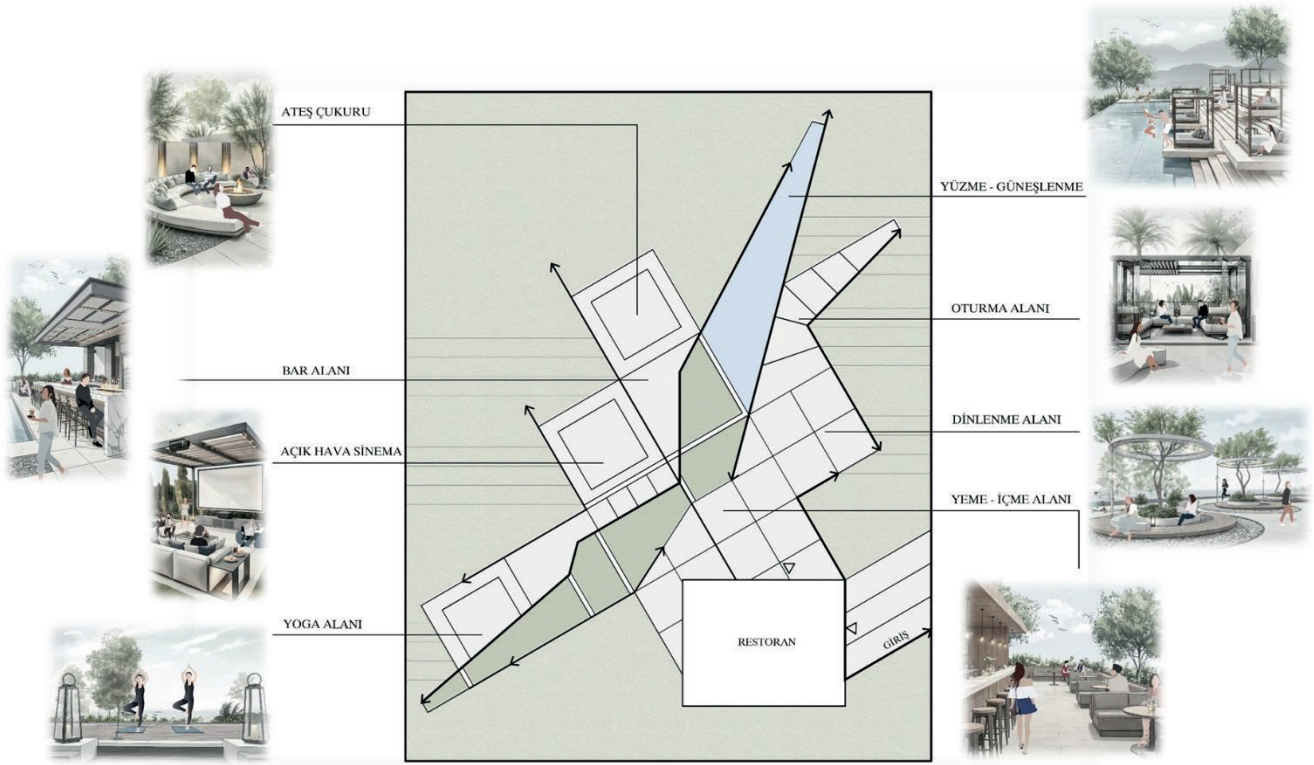


Figure 2. Activities and Site Use

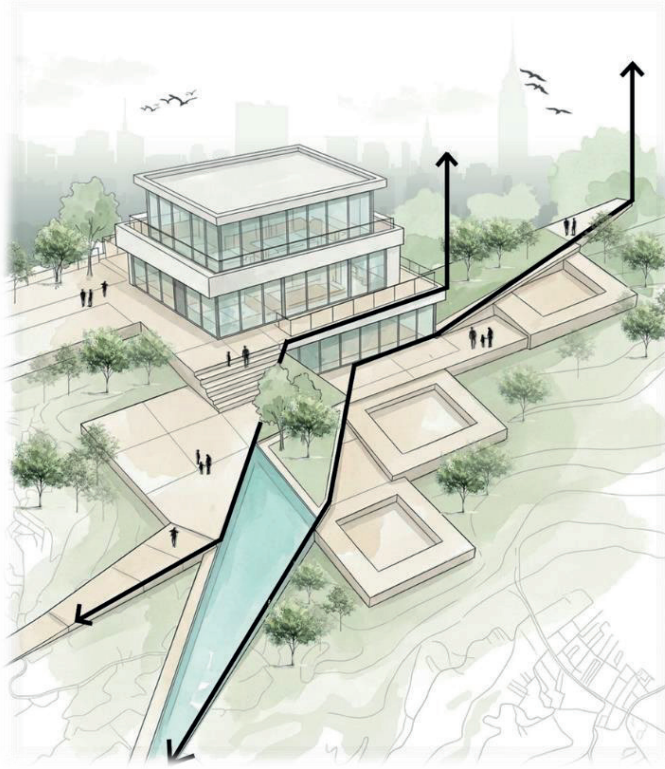


Figure 3. Three-Dimensional Visualization

The three-dimensional visualization (Figure 3) reveals a design approach that renders the concept of panoramic perception legible through spatial configuration, orientation, and elevation relationships. In its placement within the site, the building mass is considered not merely as an architectural object, but as part of an integrated system that, together with the surrounding open spaces, is oriented toward the landscape. The arrows shown in the visual clearly indicate the principal decisions of this system: both the building and the organization of open spaces open toward specific viewing directions, thereby uniting user movement and visual orientation within the same design language. This demonstrates that panoramic perception is not limited to the creation of a single viewpoint; rather, it is gradually constructed through the processes of approaching the building, circulating around it, and occupying different open space settings.

One of the most striking features in the visual is the elongated water element positioned in front of the structure, together with the stepped open space arrangement. These components serve not only as aesthetic devices, but also as strong perspectival elements directing attention toward the landscape. In particular, the linear form of the water surface draws the user's gaze forward and downward, intensifying the sense of spatial depth. In this way, panoramic perception is reinforced by a visual expansion in the horizontal plane, while the slope of the terrain simultaneously produces a layered viewing experience in the vertical dimension. Rather than perceiving the entire site from a single fixed point, the user encounters the landscape through different frames and from different elevations as movement occurs.

The terraces, stairways, and platforms surrounding the building mass further strengthen the experiential dimension of panoramic perception. These elements interpret the changes in elevation not merely as a technical problem to be resolved, but as a design opportunity through which the landscape can be disclosed progressively. While broader and more commanding views are obtained from the upper levels, descending to lower levels brings the user into a closer and more embodied relationship with the surrounding environment. Thus, the site ceases to function simply as a plane from which the landscape is observed and instead becomes an open space experience that is traversed, paused within, viewed, and rediscovered from multiple perspectives.

Moreover, the tree texture, open space voids, and hardscape arrangement visible in the image prevent the structure from being perceived as a dominant isolated object, instead establishing it as a focal element read in relation to its environment. This approach defines panoramic perception not solely as a gaze directed toward the distant landscape, but also as a continuity established between the immediate surroundings and the broader scenic context. Consequently, this visual represents a design understanding that constructs the concept of panoramic perception through orientation, perspective, terracing, circulation, and landscape continuity, offering the user not only a broad field of view but also a gradual and experiential reading of space.

Conclusion and Recommendations

In conclusion, this design approach considers open space not merely as a complementary void defined around the building, but as an experiential field of production shaped by the interaction between nature, art, and design. While the guiding data of natural topography, scenic potential, elevation relationships, and environmental character constitute the primary inputs of the design, these elements are reinterpreted through aesthetic and spatial composition to generate an open space system that enriches user experience. In this context, nature emerges not simply as the ground upon which design takes place, but as an active component that shapes spatial decisions.

The dimension of art, in turn, manifests itself through the conceptual and perceptual depth that allows space to move beyond a purely functional resolution. In particular, elements such as panoramic perception, orientation, terracing, the effects of light and shadow, and perspectival composition transform open space from a mere area of use into a visual, sensory, and experiential composition. Thus, space becomes not only a physical environment to be occupied, but also a dynamic environmental construct that unfolds through movement, is re-perceived from different levels, and is interpreted by the user through experience. This also makes visible the role of artistic thinking in open space, not only in terms of formal aesthetics, but also in the production of atmosphere, perception, and spatial narrative.

Design, on the other hand, functions as a constitutive interface between nature and art, serving as the principal medium through which environmental data are transformed into spatial organization. The harmonious placement of the building within the terrain, the shaping of open spaces according to landscape axes, and the incorporation of elements such as water features, terraces, platforms, and circulation systems together establish a design language that integrates functional requirements with experiential quality. This holistic approach reflects the fundamental characteristic of experimental open space production: the understanding of space not as a fixed, singular, and solely function-oriented design object, but as a lived environment that is continuously reproduced through changing viewpoints, movements, sensory perceptions, and user interactions.

When evaluated within this framework, projects designed from such a perspective constitute a strong example of experimental open space production at the intersection of nature, art, and design. Through siting decisions compatible with the natural environment, an artistic understanding of spatial composition, and the functional-aesthetic integrity of design, the site provides users not only with a service-oriented environment, but also with a multilayered spatial experience that is perceived, felt, interpreted, and lived. Accordingly, this approach demonstrates the importance of an innovative and holistic design understanding that reveals the multidimensional character of open space in contemporary landscape architecture.

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CHAPTER 2

THE SPATIAL DIMENSION OF URBAN RESILIENCE: AN ASSESSMENT OF LANDSCAPE PATTERN IN TERMS OF COMPOSITION, CONFIGURATION AND CONNECTIVITY

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1. Introduction

Cities face multidimensional pressures and uncertainties such as climate change, natural disasters, rapid urbanisation, population growth, environmental degradation and socio-economic changes (Kurak Sezgin & Yılmaz, 2024; Kurak Sezgin et al., 2025). These conditions have made it necessary to assess not only the capacity of urban systems to withstand specific threats, but also their capacity to maintain their functions, adapt and, where necessary, transform in the face of changing conditions. In this context, urban resilience emerges as a multidimensional approach that describes cities' capacity to be prepared for shocks and stresses, to minimise the extent of their impact, to recover and to adapt to new conditions (Meerow, Newell & Stults, 2016; Sharifi, 2020).

Although the concept of urban resilience was initially addressed within the framework of physical infrastructure and disaster resilience, it has, over time, evolved into a holistic systems approach encompassing social, economic, ecological and governance dimensions (Ahern, 2011; Sharifi & Yamagata, 2018). This approach views the city as a dynamic system comprising numerous interrelated components; it considers resilience not merely as the capacity to recover after a crisis, but also as the capacity to learn, adapt and transform in the face of uncertainty and change (Meerow & Newell, 2016; Sharifi, 2020).

This multidimensional structure raises the question of the spatial conditions within which urban resilience is generated. As urban activities, infrastructure systems and ecological processes take place within a specific spatial structure, it is not only the quantity of natural and semi-natural areas, green spaces, water systems and built-up areas that matters, but also their distribution within the city and the relationships between them. Urban resilience is not only related to the quantity of resources a city possesses, but also to how these resources are spatially organised, how they are interconnected, and how their continuity is ensured.

This perspective necessitates an assessment of the spatial dimension of resilience through the lens of the landscape pattern. Landscape ecology provides a theoretical framework for understanding the spatial distribution of natural and man-made elements, the relationships between these elements, and the spaces they form (Forman & Godron, 1986; Forman, 1995). In this approach, the landscape is considered not merely as a physical appearance, but as a dynamic system in which the water cycle, energy flow, species mobility and ecosystem processes take place (Turner, 1989; Forman, 1995).

The importance of landscape pattern in terms of resilience stems from the fact that different spatial arrangements of the same amount of natural or semi-natural areas may not produce the same functional outcome. Whilst a fragmented and disconnected set of green spaces may limit the effective utilisation of natural systems' capacity, the formation of a connected system comprising natural areas of varying sizes and qualities can support the continuity of ecological processes and ecosystem services (Benedict & McMahon, 2006; Fahrig, 2003). Therefore, when assessing landscape resilience, consideration must be given not only to the amount of area but also to the spatial .

At this point, three fundamental structural characteristics of the landscape pattern come to the fore: composition, configuration and connectivity. Composition refers to the components that make up the landscape and their quantities; configuration refers to the spatial distribution, form and arrangement of these components; whilst connectivity refers to the physical and functional continuity between landscape elements (Forman, 1995; Turner et al., 2001; Opdam et al., 2006). Whilst the fragmentation and isolation of habitats limit the continuity of ecological processes, connected landscapes can support species mobility and the continuity of ecological processes (Fahrig, 2003; Opdam et al., 2006; Taylor et al., 1993).

At the urban scale, integrated landscape networks comprising green spaces, ecological corridors, water systems and permeable surfaces can support the capacity of urban systems to adapt to environmental pressures through functions such as rainwater management, mitigation of the urban heat island effect, improvement of air quality and the maintenance of ecosystem services (Ahern, 2011; Benedict & McMahon, 2006). For this reason, the landscape pattern can be regarded as a spatial infrastructure where the various dimensions of urban resilience intersect spatially and where resilience capacity can be assessed.

Measuring these structural characteristics of landscape pattern also enables a comparison of the spatial conditions of urban resilience. Landscape metrics contribute to the analysis of landscape s by enabling the quantitative assessment of characteristics such as composition, configuration, fragmentation and connectivity (McGarigal & Marks, 1995; Turner et al., 2001; McGarigal et al., 2012). Therefore, metrics should be regarded not as indicators that directly measure resilience, but as analytical tools that reveal the spatial conditions that may influence resilience capacity.

Accordingly, the aim of this study is to evaluate the relationship between landscape pattern and urban resilience along the axes of composition, configuration and connectivity, and to elucidate the role of landscape pattern in the spatial infrastructure of urban resilience. Within this framework, approaches to urban resilience and landscape pattern are examined together; the relationships between the structural characteristics of the landscape and resilience, and the possibilities for evaluating these relationships through landscape metrics, are explored.

2. The Spatial Dimension of Urban Resilience

Urban resilience is a multidimensional capacity that arises from the interaction between physical infrastructure, ecological systems, the economic structure, social relations and governance capacity (Meerow, Newell & Stults, 2016; Sharifi, 2020). Consequently, the assessment of resilience requires that these dimensions be considered not as independent characteristics, but in terms of how they come together and support one another within the urban environment.

From the perspective of physical and ecological systems, green spaces, water systems, permeable surfaces and other natural elements can support urban resilience through functions such as rainwater management, flood risk reduction, temperature regulation and the buffering of environmental stresses (Ahern, 2011; Benedict & McMahon, 2006). Conversely, habitat loss, fragmentation and the disconnection of natural areas can limit the continuity of ecological processes (Fahrig, 2003). The interconnection of natural and semi-natural areas within a network, however, can support the continuity of ecological processes and the urban landscape's capacity to adapt to changing environmental conditions (Benedict & McMahon, 2006; Opdam et al., 2006).

The social and economic dimensions of urban resilience are also not independent of spatial conditions. Social resilience is linked to communities' capacity to act collectively and adapt in the face of crises; economic resilience, meanwhile, is linked to the diversity of resources, employment opportunities and the continuity of economic activities (Sharifi & Yamagata, 2018). Spatial conditions such as the quality of public spaces, accessibility, opportunities for social interaction and access to urban services can support the development of this capacity (Alpak et al., 2018; Sezgin Kurak & Yilmaz, 2025). Similarly, governance plays a decisive role in the conservation of natural and semi-natural areas, the creation of green infrastructure networks and the steering of urban development (Sharifi, 2020). Consequently, whilst the social, economic and governance dimensions are not direct structural characteristics of the landscape pattern, they can be regarded as complementary elements that influence the formation and use of this structure.

Within this multidimensional structure, the landscape pattern emerges as an interface where different processes of resilience intersect in space. The distribution of natural and semi-natural areas within the city, their relationship with built-up areas, and their interconnections can influence not only ecological processes but also the quality of the physical environment and the ways in which people use urban space. For this reason, the landscape pattern should not be regarded as a single variable explaining all dimensions of resilience, but rather as a structural framework constituting the spatial manifestation of various resilience processes.

This approach also highlights the importance of scale and the dimensions of change. Whilst resilience can be assessed at the urban scale, the size, distribution, level of fragmentation and connectivity of landscape elements can vary across different spatial scales (Turner et al., 2001; McGarigal et al., 2012). Furthermore, urban development, changes in land use and natural processes can alter the structural characteristics of the landscape over time; these changes can affect the nature of ecological processes, resource flows and spatial connectivity (Forman, 1995; Turner et al., 2001). Therefore, what is important in terms of resilience is not merely the preservation of the existing landscape, but the management of this in such a way that it can continue to fulfil its functions in the face of change.

Within this framework, three fundamental structural characteristics—composition, configuration and connectivity—emerge as key when assessing landscape pattern in terms of urban resilience. Composition refers to the components contained within the landscape and their quantity; configuration refers to the spatial distribution and arrangement of these components; whilst connectivity refers to the continuity and relationships between the parts (Forman, 1995; Turner et al., 2001; Opdam et al., 2006). When these three characteristics are assessed together, it becomes possible to reveal not only the quantity of resources a landscape possesses, but also how these resources form a spatial system.

Consequently, in this study, the different dimensions of urban resilience are addressed not as detailed classifications, but through their relationship with the landscape pattern. Composition represents the presence and quantity of resources, configuration represents their spatial organisation, whilst connectivity represents the continuity between these resources. This approach enables the relationship between urban resilience and the landscape pattern to be assessed not through the presence of a single landscape component, but through the holistic structure of the landscape. Thus, the fundamental question moves beyond ‘how many natural resources are present in the urban landscape?’ to ‘how are these resources organised and how are they interconnected?’ (Figure 1).

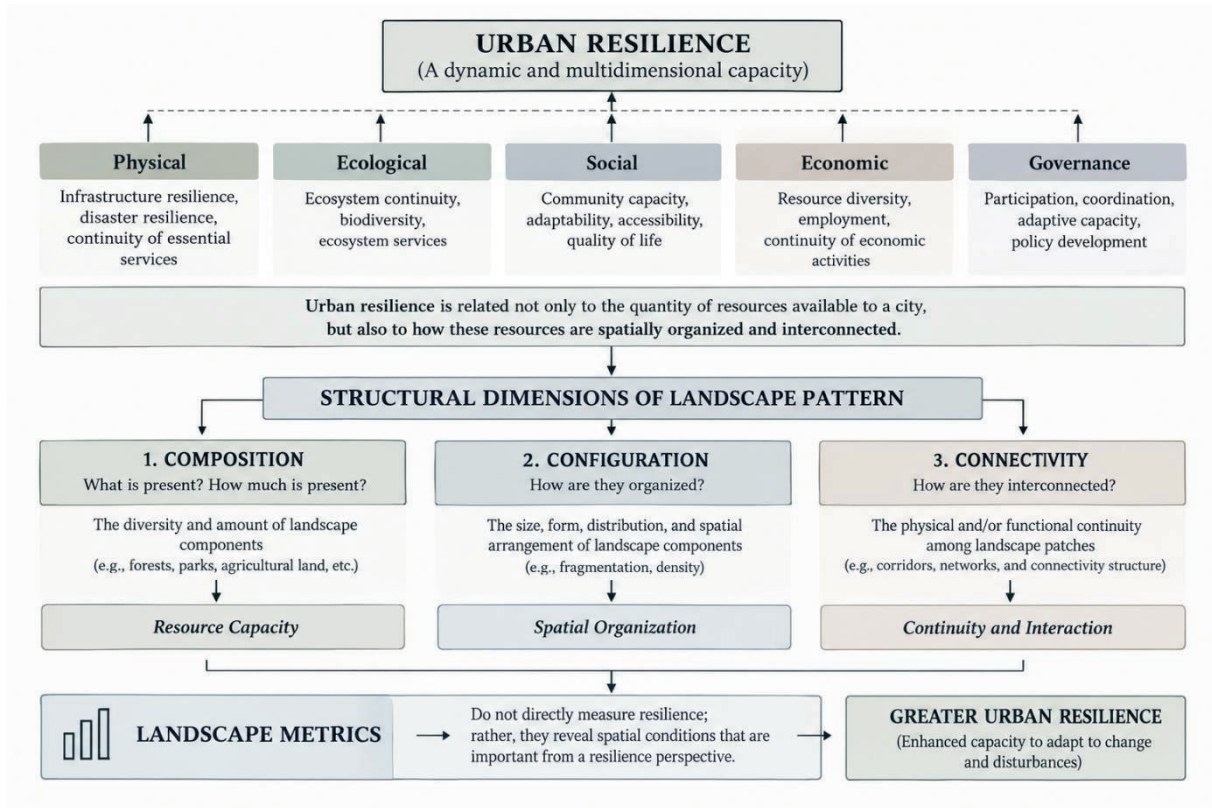


Figure 1. The conceptual relationship between urban resilience and the landscape pattern

3. Structural Dimensions of Landscape Texture: Composition, Configuration and Interconnectivity

Landscape ecology explains the functioning of the landscape not merely in terms of the presence and quantity of its components, but through the spatial arrangement of these components and their interrelationships (Forman & Godron, 1986; Forman, 1995). This approach is significant in terms of urban resilience; because different urban areas with the same amount of natural or semi-natural space may exhibit different ecological and functional characteristics depending on the spatial arrangement of these areas. Therefore, when assessing landscape pattern in terms of resilience, composition, configuration and connectivity must be considered together.

3.1. Composition

Composition refers to the different types of land cover and land use present within a landscape, and their respective proportions (Forman, 1995; Turner et al., 2001). The presence of different classes—such as forest, agricultural land, grassland, parks, water bodies and built-up areas—and their proportions within the landscape reveal the landscape’s resource structure. In this respect, composition essentially answers the question: ‘What is present in the landscape, and in what quantities?’

From the perspective of urban resilience, the quantity of natural and semi-natural areas is significant in terms of rainwater management, temperature regulation, habitat support and the maintenance of ecosystem services. However, the high proportion of a particular land cover class does not, in itself, imply a high capacity for resilience. The distribution of the same amount of natural area in different forms and spatial arrangements can lead to different outcomes in terms of ecological processes and urban functions.

Therefore, composition reveals the resource capacity of the landscape in terms of resilience; however, to explain how these resources can be utilised and made functional, it must be assessed in conjunction with configuration and connectivity. In the assessment of landscape composition, criteria such as area sizes, class ratios and measures of landscape diversity can be utilised (McGarigal & Marks, 1995; McGarigal et al., 2012).

3.2. Configuration

Configuration refers to the size, shape, distribution, density and relative positions of landscape components (Forman, 1995; Turner et al., 2001). Thus, whilst composition answers the question ‘what is there?’, configuration focuses on the question ‘how are these organised?’.

Urban development processes can lead to the reduction and fragmentation of natural areas, whilst increasing the continuity of built-up areas within the landscape. Habitat fragmentation can limit the connections between natural areas and the continuity of ecological processes (Fahrig, 2003). Consequently, two urban areas with the same total amount of natural area may exhibit different ecological and functional characteristics when the size, shape, distribution and levels of fragmentation of the patches differ.

The fundamental importance of configuration in terms of resilience lies in its determination of the spatial functionality of the resources revealed by composition. In this context, measures such as the number of patches, patch density, the largest patch index, average patch size and edge characteristics can be used to assess the landscape’s fragmentation and spatial organisation (McGarigal & Marks, 1995; McGarigal et al., 2012). However, these criteria do not directly represent resilience; rather, they reveal specific spatial conditions that are significant in terms of resilience.

3.3. Connectivity

Connectivity refers to the physical or functional continuity between landscape elements. It is a particularly important landscape characteristic in terms of the movement of organisms, interactions between habitats and the continuity of ecological processes (Taylor et al., 1993; Opdam et al., 2006). Whilst structural connectivity refers to the degree to which elements are physically linked, functional connectivity focuses on the capacity of a particular species or ecological process to move and interact within the landscape (Taylor et al., 1993; Opdam et al., 2006).

From an urban landscape perspective, connectivity relates to the capacity of natural areas to function not as isolated fragments, but as part of a network. Linking green spaces, water systems and other natural areas via corridors or connecting elements can support the continuity of ecological processes (Benedict & McMahon, 2006). Furthermore, the connectivity of green and blue infrastructure can contribute to rainwater management, microclimatic regulation and the continuity of various ecosystem services (Ahern, 2011; Benedict & McMahon, 2006).

For this reason, connectivity can be regarded as a complementary structural characteristic that reveals the continuity and interaction between the resources present within the landscape. However, it should be borne in mind that high connectivity does not necessarily imply greater resilience in all circumstances; it is important to consider between which landscape components the connection is established, from which process perspective it is assessed, and at what scale it is considered.

3.4. A Holistic Assessment of Landscape Structure in Terms of Resilience

Composition, configuration and connectivity are not independent criteria, but rather three dimensions that complement the structural characteristics of the landscape in terms of resilience. This relationship can be understood within the framework of ‘resources – organisation – continuity’. Composition refers to the existence and quantity of resources within the urban landscape; configuration refers to the spatial organisation of these resources; and connectivity refers to the continuity between them. Thus, the assessment of a landscape in terms of resilience is not limited to the question ‘how much natural area is there?’; it also encompasses the questions ‘how are these areas organised and how are they connected to one another?’.

Within this framework, landscape metrics should be regarded not as indicators that directly measure urban resilience, but rather as analytical tools that reveal the spatial conditions that may influence resilience capacity (McGarigal & Marks, 1995; McGarigal et al., 2012). Measures of patch size and fragmentation contribute to the assessment of configuration; measures of diversity contribute to the assessment of composition; whilst measures of connectivity and integrity contribute to the assessment of continuity between landscape patches. However, the significance of these metrics in terms of resilience must be interpreted by taking into account which ecological or urban function the measured structural feature corresponds to and at which spatial scale it is assessed.

Consequently, a resilience-focused landscape approach should not only focus on increasing the amount of natural areas but also on preserving the integrity of existing landscape elements, reducing fragmentation and strengthening connections between different natural areas (Ahern, 2011; Benedict & McMahon, 2006). This approach shifts the landscape pattern from being a passive backdrop to urban resilience to positioning it as an active structure through which resilience capacity can be spatially interpreted and assessed (Figure 2).

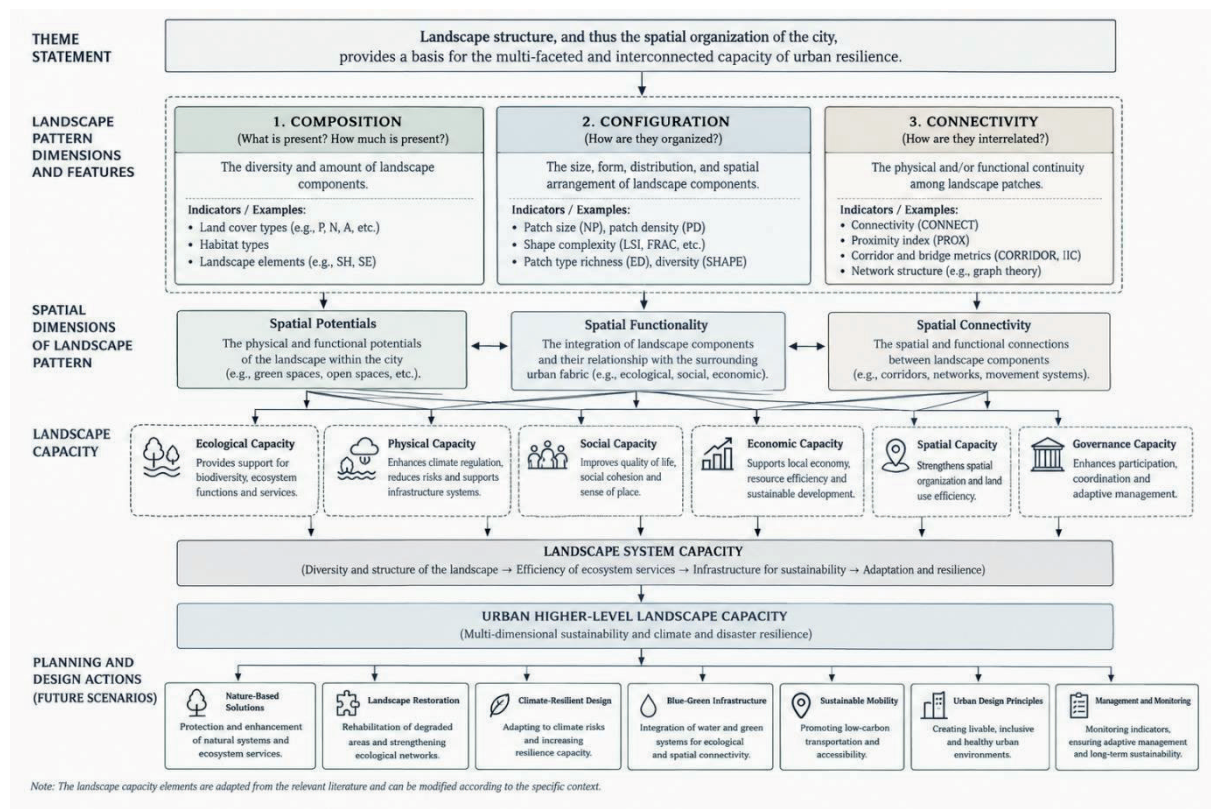


Figure 2. The impact of the structural characteristics of the landscape pattern on the spatial capacity for urban resilience.

4. Conclusions and Recommendations

This study has assessed the relationship between urban resilience and landscape pattern through the landscape's characteristics of composition, configuration and connectivity. A review of the literature reveals that urban resilience cannot be explained solely by the quantity of a city's natural and built resources; the way in which these resources are spatially distributed, organised and interrelated also plays a significant role in terms of resilience capacity. In this context, composition emerges as a dimension explaining the diversity and quantity of resources, configuration as the spatial organisation of these resources, and connectivity as the continuity between landscape elements – all of which are complementary dimensions.

This approach demonstrates that, in terms of urban resilience, the question 'how much landscape is there?' is not sufficient on its own; the questions 'how is the landscape organised, and to what extent are its parts connected?' must also be included in the assessment. It is evident that urban areas with the same amount of natural or semi-natural space may present different spatial conditions in terms of resilience when the size, distribution, level of fragmentation and connectivity of these areas differ. Consequently, the landscape pattern can be regarded not merely as a supporting element of urban resilience, but as a key structure through which the spatial conditions of resilience capacity can be interpreted.

Within this framework, landscape metrics should be treated not as individual indicators that directly measure resilience, but as analytical tools that reveal the spatial conditions relevant to resilience. The combined assessment of criteria relating to composition, configuration and connectivity can contribute to the comparison of the landscape structure of different urban areas and to the identification of priority areas for intervention in terms of resilience. However, the meaning of these metrics should be interpreted not solely on the basis of the numerical values obtained, but by taking into account which ecological or urban function the measured landscape feature corresponds to and at what spatial scale it is assessed.

In this regard, it is recommended that, in urban resilience planning and design processes, the landscape be assessed not merely in terms of area, but also in terms of its characteristics of diversity, integrity, fragmentation and connectivity. In addition to creating new green spaces, strengthening connections between existing landscape fragments, integrating fragmented areas and ensuring the continuity of green-blue infrastructure systems can be addressed as resilience-focused priorities. In particular, landscape pattern analyses carried out at the neighbourhood and sub-district scales can contribute to the identification of spatial priorities in terms of urban resilience.

Consequently, this study highlights the necessity of a shift in the assessment approach from the quantity of resources to their spatial organisation when evaluating urban resilience. A landscape-based resilience approach, by focusing not only on the conservation of existing natural resources but also on enhancing their integrity, connectivity and continuity, can contribute to strengthening the capacity of urban systems to cope with change and environmental pressures.

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CHAPTER 3

CLIMATE LITERACY IN HISTORIC CITIES: AN APPROACH TO REDUCING CLIMATE VULNERABILITY AND PROTECTING CULTURAL HERITAGE

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1. Introduction

It is well known that the adverse effects of climate change have negative impacts on the environment, economy, and society. Historic cities, which define cultural landscapes, identity, and culture that cannot be restored or compensated for once lost, are among the places most affected by climate-related shocks. In this context, the importance of improving the “climate literacy” levels of people living in historic cities, particularly local communities, is emphasized.

Wagner (2023) characterized climate change as one of the most significant challenges that societies have to face. In this context, it was stated that studies on this issue intensified “after a late start” (Wagner, 2023). Climate change has been described as a phenomenon whose impacts are observed not only at the local level but also globally (Korsager and Slotta, 2015). The adverse effects of climate change on the hydrological cycle (Yang et al., 2026), agricultural production activities (Iba and Lilavanichakul, 2026), and, in this context, food security (Rahman et al., 2025) have been reported.

Climate change is addressed worldwide within environmental, economic, and political contexts and across various scales (local, regional, and global) (Tekingündüz et al., 2026a). Local governments are reported to implement contemporary responses to climate change through a range of strategies, with these responses being at the forefront of impacts on local communities (Musa et al., 2026). Various approaches are needed to eliminate or minimize potential adverse effects on the environment and nature (Cengiz Gökçe and Barış, 2015). Accordingly, the adverse effects of climate change have been stated to create an urgent need for a climate-literate society (Lubej et al., 2025). Chen et al. (2026) also identified climate literacy as a fundamental element in addressing climate change. According to Boucher et al. (2026), climate literacy plays an important role in shaping individuals’ behaviors and attitudes toward climate change. Developing an understanding of climate change through education has been identified as one of the effective approaches to climate change adaptation (Korsager and Slotta, 2015).

The sustainable improvement of urban quality of life has been stated to depend on maintaining the healthy functioning of ecosystems (Kısakürek et al., 2026). The conservation of cultural heritage, which also has implications for sustainable development, has been identified as an important issue (Quesada-Ganuza et al., 2021). However, climate change has been reported to threaten the conservation and sustainability of cultural heritage. Despite extensive research on climate-related risks, a significant knowledge gap has also been identified in risk assessments addressing heat waves and historic urban areas (Quesada-Ganuza et al.,

2023). This study aims to address the importance of climate literacy in responding to the adverse effects of climate change in historic cities.

2. Climate Literacy

The concept of climate literacy, in its broadest sense, is characterized as individuals' awareness of climate change and their perception of its anthropogenic impacts. It has increasingly been recognized as one of the fundamental components of informed adaptation (Muccione et al., 2025; Simpson et al., 2021; Simpson et al., 2026). Leve et al. (2023) stated that climate literacy encompasses the skills and attitudes that enable individuals to respond to the threats posed by climate change. Likewise, Pan et al. (2023) identified climate literacy as a fundamental tool for understanding climate change and global warming and for making informed decisions in this context.

Boucher et al. (2026) conceptualized climate literacy as a multidimensional construct comprising knowledge, attitudes, and the capacity to process climate-related information. The knowledge dimension is divided into factual and procedural knowledge, while the attitude dimension encompasses personal and collective attitudes. Climate change-related behaviors are considered behavioral outcomes associated with climate literacy rather than direct components of the construct.

OECD (2025) identified four competencies that contribute to climate literacy. Accordingly, the four competencies of climate literacy are listed as follows (OECD, 2025):

- Understanding and explaining human-caused climate change,
- Applying evidence-based and systems thinking to climate-related issues,
- Evaluating diverse arguments and perspectives on climate change,
- Exercising agency for climate futures.

3. Historic Cities and Climate Change

UNESCO (2026) stated that the impacts of climate change are becoming increasingly evident and severe. These impacts range from direct damage caused by extreme weather events, such as floods and storms, to deterioration resulting from changing climatic conditions associated with processes such as rising temperatures and changes in precipitation.

Historic urban landscape areas have been defined as areas formed cumulatively through the interaction of natural and cultural elements within the broader urban context and geographical setting (UNESCO, 2011; Tekingündüz et al., 2026b).

Although cultural heritage is vulnerable to the adverse effects of climate change, it has been stated to play an important role in supporting climate action. It has also been stated that cultural heritage, through traditional knowledge systems, contains valuable knowledge on climate responses that have developed over time to adapt to processes of environmental change and transformation (UNESCO, 2026).

Due to their structural characteristics, historic city centers are characterized by insufficient green and public open spaces, a high proportion of private property, and susceptibility to natural hazard exposure (Privitera and Jelo, 2025). At the same time, energy-efficient renovation measures and solar panel installations in these cities are subject to strict heritage restrictions, making them difficult to implement in heritage cities (Haupt et al., 2023; Kern et al., 2021; Chatziandreou and Haupt, 2026).

Climate change has been reported to adversely affect the conservation of cultural heritage and the sustainability of its existence (Li and Li, 2026). Accordingly, the risks posed by climate change to cultural heritage should be taken into account when enhancing the resilience of urban systems. A significant knowledge gap has been identified regarding heat-wave risks in historic cities (Quesada-Ganuza et al., 2023).

Climate change, manifested through gradual changes in temperature, precipitation, atmospheric moisture, and wind intensity, as well as sea-level rise and changes in the frequency of extreme events, is already affecting cultural heritage sites (Sesana et al., 2021). Gradual changes in climate have been addressed in terms of their impacts on cultural heritage exposed to outdoor environmental conditions and on the interiors of historic buildings (Sesana et al., 2021). Accordingly, the potential impacts of climatic stressors on cultural heritage sites exposed to outdoor conditions are presented in Table 1.

Table 1. Potential impacts of climatic stressors on cultural heritage exposed to outdoor conditions (adapted from the figure in Sesana et al., 2021)

Climatic stressor	Climate-related hazards	Mechanism	Impacts on cultural heritage
Temperature	Changes in freeze–thaw cycles	Freeze–thaw	Structural damage to building materials
	Daily temperature variations	Thermoclastism	Microcracking in stone; flaking of stone; erosion of building material surfaces
Temperature/ Precipitation	Changes in temperature and precipitation	Corrosion	Corrosion of metal, stone, and glass; discoloration/blackening of carbonate stone surfaces
		Biological growth	Biomass accumulation on stone; algal deterioration of stone; fungal deterioration of wood; insect-induced deterioration of wood; lichen-induced deterioration of stone
Precipitation	Changes in relative humidity; capillary rise; soil moisture retention capacity; moisture accumulation in walls	Salt crystallization	Efflorescence and subflorescence in stone
Wind	Wind-driven rain	Material erosion	Surface erosion of stone materials; collapse of archaeological structures; structural damage to buildings and archaeological resources; wind-induced erosion of buildings and archaeological resources

4. The Importance of Climate Literacy in Historic Cities

Changes in precipitation, humidity, and temperature levels, along with increased exposure to severe weather events, have been reported to create a need for the adaptation of cultural heritage to climate change (Sesana et al., 2018). Increasing awareness of climate change has been identified as an important step in the early stages of the adaptation process for addressing the adverse effects of climate change (Ricart et al., 2023). Climate literacy, as one of these adaptation and awareness approaches, supports individuals living in historic cities in adopting responsible behaviors, recognizing changes and differences, and taking appropriate measures in response.

Climate change has been reported to pose increasing risks not only to natural ecosystems but also to cultural heritage sites. Accordingly, climate literacy, encompassing knowledge, awareness, and decision-making capacities, has been identified as one of the essential approaches to enhancing and strengthening local capacity (Tekingündüz et al., 2026c). From this perspective, climate literacy can be considered one of the key components in enhancing the resilience of historic cities to climate change. Table 2 presents the potential implications for historic cities, developed through an interpretation of the four competencies contributing to climate literacy identified by OECD (2025).

Table 2. Potential Implications of the OECD (2025) Climate Literacy Competencies for Historic Cities

OECD (2025) climate literacy competency	Potential implications for historic cities
Understanding/explaining human-caused climate change	• Recognizing the impacts of climate change on historic buildings and traditional urban fabric. • Understanding the importance of the relationship between climate change and cultural heritage conservation.
Applying evidence-based and systems thinking to climate-related issues	• Assessing climate-related risks in historic cities based on scientific data and local observations. • Identifying vulnerable historic areas and developing measures accordingly. • Integrating climate data into conservation/planning approaches.
Evaluating various arguments and perspectives on climate change	• Evaluating the different perspectives of various stakeholders on climate change and cultural heritage. • Examining potential conflicts related to climate adaptation and comparing the benefits and adverse effects of different alternatives on cultural heritage.
Exercising agency for climate futures	• Supporting individual and collective actions aimed at enhancing the climate change adaptation capacity of historic cities. • Developing climate-resilient conservation/planning policies. • Expanding local awareness and educational activities and increasing participation in these activities.

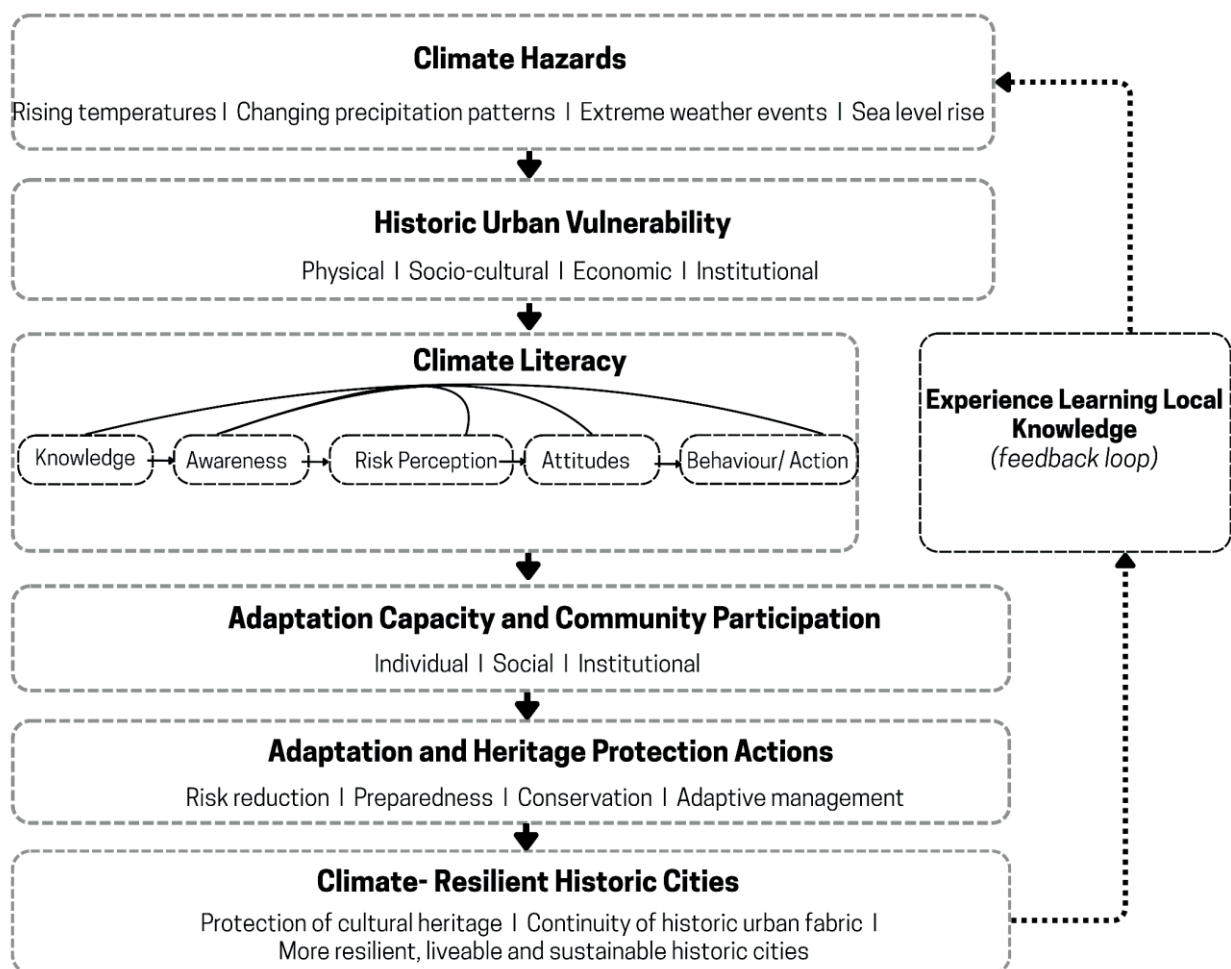
5. Conceptual Framework for Climate Literacy-Based Historic City Resilience

The impacts of climatic factors such as temperature, precipitation, humidity, and wind on cultural heritage are among the important issues addressed in the literature (Sesana et al., 2021). These impacts highlight the vulnerability of cultural heritage to climate change, while also drawing attention to the need to adapt to changing climatic conditions. In this regard, Shirvani Dastgerdi et al. (2020) aimed to develop a cultural and natural heritage conservation framework to enhance the climate change adaptation capacity of heritage resources in the case of Italy. Climate literacy is also one of the factors that should be considered in the adaptation of cultural heritage to climate change.

OECD (2025) conceptualizes climate literacy as a construct encompassing knowledge, skills, and attitudes related to climate change. Similarly, Garrecht et al. (2026) examined climate literacy in terms of knowledge, skills, risk perception, and value orientations, and identified risk perception as the relatively strongest factor influencing the willingness to engage in climate action. This finding indicates that, in addition to knowledge about climate change, how climate risks are perceived is also important in the process of taking action. Cultural

heritage, however, is not considered solely as an element exposed to the impacts of climate change in this process. UNESCO (n.d.) emphasizes that local knowledge, cultural heritage, and cultural practices can support social equity, livelihoods, behavioral change, and collective action in climate change adaptation processes. This approach allows the relationship between cultural heritage conservation, climate change adaptation, and the development of societal capacity to be considered together.

By considering together the relationships among climatic impacts identified in the literature, cultural heritage vulnerability and adaptation, climate literacy, risk perception, and local knowledge, a conceptual framework for climate literacy-based historic city resilience was developed (Figure 1).



Source: Developed by the author based on Sesana et al. (2021), Shirvani Dastgerdi et al. (2020), OECD (2025), Garrecht et al. (2026), and UNESCO (n.d.).

Figure 1. Conceptual framework for climate literacy-based historic city resilience

6. Conclusion

This study argues that historic cities are vulnerable to the adverse effects of climate change. This argument is also supported by the literature reviewed in this study, particularly the studies discussed under the third section. From this perspective, addressing climate change adaptation in historic cities solely through technical applications and physical interventions is considered insufficient; social approaches aimed at improving communities' climate knowledge, awareness, and adaptive capacity should also be incorporated into the process. In this regard, it is important to consider climate literacy as a “*social component*” in enhancing the resilience of historic cities to climate change. Increasing local communities' knowledge and awareness of climate change may contribute to strengthening public participation. In this regard, the cooperation of public institutions, universities and non-governmental organizations in developing education and awareness programs at the local level is seen as a beneficial approach. It is also argued that providing climate education from an early age is important for fostering climate-conscious and climate-sensitive societies.

For this reason, it is believed that the conservation of the cultural landscape heritage that carries the traces of the past and constitutes an important part of the cultural identity of the cities should not be limited to technical and physical interventions. It is argued that the implementation of protection and adaptation processes along with social approaches that strengthen climate literacy, social awareness, education and participation is one of the useful approaches that can contribute to the development of resilience in historic cities to climate change.

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CHAPTER 4

NATURE-BASED SOLUTIONS IN LANDSCAPE PLANNING: CLIMATE CHANGE ADAPTATION AND URBAN RESILIENCE

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1. Introduction

Accelerating urbanization, population concentration in urban areas, and changes in land use patterns have substantially transformed the relationship between cities and natural ecosystems. Increasing impervious surfaces, fragmentation of natural drainage systems, declining vegetation cover, and weakened ecological connectivity are exacerbating interrelated problems such as the urban heat island effect, surface runoff, flooding, habitat loss, and biodiversity decline. Climate change is further intensifying the impacts of these problems; extreme temperatures, short-duration intense rainfall, and floods, in particular, pose significant risks to the physical and social resilience of cities (Karahan & Dilek, 2024; Karahan & Sezen, 2024). The IPCC (2022) states that well-functioning ecosystems provide an important buffer in protecting cities against climate-related hazards and that nature-based solutions constitute an important tool for climate change adaptation and disaster risk reduction across different spatial scales.

These developments have necessitated stronger integration of natural processes into planning and design decisions, extending beyond approaches that address urban problems solely through engineering-based, single-function infrastructure investments. In this context, Nature-based Solutions (NbS), which have gained prominence in recent years, are attracting increasing attention as an approach that aims to address societal challenges through ecosystem conservation, sustainable management, and restoration. According to the IUCN (2020) definition, NbS encompass actions that protect, sustainably manage, and restore natural or modified ecosystems to address societal challenges effectively and adaptively, while simultaneously providing benefits for human well-being and biodiversity. This definition situates NbS within a broader framework that jointly addresses ecological processes, societal needs, and spatial planning, extending beyond a specific landscape intervention or planting design technique (Figure 1) (IUCN, 2020).



Figure 1. Conceptual framework on Nature-based Solutions (IUCN, 2019).

The growing interest in nature-based solutions stems from the concept's intersection with various research fields, including urban sustainability, green infrastructure, ecosystem services, climate change adaptation, and urban resilience. Fang et al. (2023) demonstrate that, although the concepts of green infrastructure, urban ecosystem services, and NbS emerged from different origins, they have become closely interconnected over time and offer complementary approaches to achieving urban sustainability. Similarly, Corgo et al. (2024) note that NbS are increasingly addressed in spatial planning processes for climate change adaptation, but their integration into planning systems remains fragmented and varies at the implementation level.

These developments are of particular importance to landscape architecture. This is because issues underpinning NbS, such as ecosystem conservation, the maintenance of ecological processes, the development of green and blue infrastructure, the enhancement of ecosystem services, and the strengthening of human interactions with nature, are directly related to the fields of practice of landscape architecture. Through its capacity to assess diverse natural and cultural processes within an integrated spatial framework, landscape planning can contribute to translating NbS into a multiscale planning approach.

The primary aim of this study is to examine NbS from a landscape planning perspective and to identify the opportunities they offer for climate change adaptation, urban resilience, ecosystem services, and human well-being. Accordingly, the relationship of the NbS concept with green infrastructure, ecosystem services, and landscape planning is first explained. Subsequently, the functions of nature-based solutions in addressing the principal risks posed by climate change in cities are evaluated; different forms of solutions are discussed through

landscape interventions such as green roofs, rain gardens, urban trees, wetlands, bioswales, and blue-green corridors, and are assessed through a holistic planning approach that jointly addresses the ecological and social functions of the landscape.

2. The Conceptual Framework and Importance of Nature-based Solutions and Their Role in Landscape Planning

Nature-based solutions (NbS) refer to an approach that aims to address societal challenges by drawing on natural and ecosystem processes. However, merely classifying a green intervention as NbS is insufficient. Protecting or enhancing ecosystem functions, contributing to biodiversity, and delivering tangible benefits in addressing a societal challenge are among the fundamental requirements. The IUCN Global Standard for Nature-based Solutions sets out 8 criteria and 27 indicators for evaluating this approach in terms of ecological integrity, responses to societal challenges, economic feasibility, governance, and long-term sustainability (IUCN, 2020).

The conceptual framework of NbS is closely related to green infrastructure and ecosystem services approaches. While green infrastructure is considered an interconnected system of natural and semi-natural areas that support ecological functions, ecosystem services encompass the regulating, supporting, provisioning, and cultural benefits that ecosystems provide to people. NbS lie at the intersection of these approaches and enable a landscape component to perform multiple ecological and societal functions. For example, urban parks can provide various functions, such as stormwater retention, temperature regulation, habitat provision, and carbon storage, alongside recreation. Therefore, although green infrastructure, ecosystem services, and NbS have different conceptual backgrounds, they are becoming increasingly integrated in the context of urban sustainability (Fang et al., 2023).

The importance of NbS in landscape planning stems from the need to plan the appropriate intervention at the appropriate location and scale, rather than simply locating interventions in designated areas. The integrated assessment of natural features, land use, ecological connectivity, hydrological systems, topography, climate, population characteristics, and societal needs directly influences the effectiveness of NbS. In their comprehensive review of 505 studies, Sobhaninia et al. (2025) demonstrated that green infrastructure site selection varies according to the indicators, models, and prioritized functions used; that temperature reduction and stormwater management are generally addressed separately; and that more integrated spatial planning approaches are needed for multifunctional green infrastructure.

The importance of NbS is particularly evident in climate change adaptation and urban resilience. Urban trees, green roofs, rain gardens, bioswales, wetlands, and blue-green corridors can provide multiple benefits, such as reducing ambient temperatures in urban areas, managing stormwater, reducing flood risk, providing habitat, and storing carbon. A systematic review of 582 empirical studies identified 10 different NbS approaches and 29 intervention types within the context of urban climate change adaptation; sustainable urban drainage systems, low-impact development, green infrastructure, sponge cities, and blue-green infrastructure were found to be particularly prominent in flood and stormwater management (Aghaloo et al., 2024). Similarly, Ferrario et al. (2024) demonstrated that NbS interventions generally have positive effects on heat and flood risks, although outcomes vary according to implementation conditions and context. Fang et al. (2024) showed that implementing NbS alongside conventional approaches can deliver greater benefits against multiple climate hazards.

The contributions of NbS are not limited to climate adaptation but also encompass social and cultural benefits such as recreation, aesthetic experience, social interaction, physical activity, and psychological well-being. However, the performance of NbS may vary depending on local conditions, including climate, topography, soil, hydrological regime, plant selection, spatial location, maintenance conditions, and social use. Furthermore, since enhancing one ecosystem service may adversely affect another, maintenance requirements, governance conditions, and long-term sustainability need to be considered in the planning process.

Within this framework, the role of NbS in landscape planning extends beyond bringing together green interventions. Natural and semi-natural areas at different scales, ranging from small-scale interventions such as rain gardens to urban green corridors, and from wetland restoration to regional ecological networks, need to be planned as an interconnected system. Accordingly, the fundamental role of landscape planning in relation to NbS is to ensure that nature-based interventions are integrated with appropriate functions, locations, and scales by jointly assessing ecological structure, climate risks, ecosystem services, spatial suitability, and societal needs. This approach positions NbS not solely in terms of the technical characteristics of specific green interventions, but as a holistic planning approach that jointly addresses the ecological and social functions of the landscape.

3. Nature-based Solutions in Landscape Planning

Addressing nature-based solutions within landscape planning requires a more comprehensive approach than considering natural and semi-natural areas solely as green spaces. Since landscape planning enables the assessment of relationships between natural features and

human activities at the spatial scale, it provides a suitable framework for configuring NbS at different scales and as interconnected systems. Within this framework, the suitability and priority of nature-based interventions can be determined by jointly assessing topography, hydrological structure, soil properties, vegetation cover, land use, ecological connectivity, population density, and climate risks.

One of the central issues in incorporating NbS into the planning process is not merely identifying implementation areas for natural solutions, but ensuring their appropriate spatial placement. For example, the contribution of an intervention such as a rain garden, permeable surface, or bioswale to stormwater management is closely related to the slope, soil permeability, drainage structure, surface runoff characteristics, and surrounding land uses of the site. Similarly, the temperature reduction capacity of an urban tree depends not only on the number of trees but also on the shading capacity of the tree species used, the areas where shade is needed, building density, pedestrian movement, and its relationship with existing green spaces. Therefore, NbS planning requires an assessment of the functional and ecological structure of the landscape rather than a simple quantitative approach focused on increasing the amount of green space.

Corgo et al. (2024) note that NbS are increasingly incorporated into spatial planning and climate change adaptation policies, but interventions often remain limited to specific projects and sites. According to the researchers, one of the main barriers to embedding NbS in planning systems is insufficient integration across different planning scales and policy instruments. From a landscape planning perspective, this highlights the importance of linking NbS to broader-scale ecological structure, green infrastructure systems, and land use decisions rather than treating them as isolated interventions at the project scale.

An important implication of this approach for landscape planning is that NbS can be considered a component of a network system. Maintaining or strengthening connections among ecological corridors, river valleys, urban forests, parks, wetlands, agricultural areas, and other open and green spaces can contribute to supporting biodiversity, sustaining ecosystem services, and enhancing urban resilience to climate risks. Therefore, planning nature-based solutions requires an emphasis on the performance of the system formed by the interventions rather than that of an individual site.

In this regard, Geographic Information Systems (GIS), remote sensing, and spatial analysis methods provide important tools; various indicators, such as land cover, land surface temperature, the proportion of impervious surfaces, slope, drainage networks, soil permeability, population density, access to green spaces, and disaster risks, can be assessed within the same

spatial database. These data make it possible to identify suitable sites for NbS and prioritize different intervention options. The study by Sobhaninia et al. (2025) shows that a wide range of indicators and modeling approaches are used to locate green infrastructure for reducing heat and stormwater risks. While a substantial proportion of the reviewed studies focused on stormwater management, studies assessing heat and stormwater risks simultaneously were found to be more limited.

This finding is important for landscape planning. This is because the risks posed by climate change in cities are not independent of one another. Increasing impervious surfaces can both increase surface runoff and contribute to rising urban temperatures by limiting natural evapotranspiration processes. Therefore, jointly assessing the potential effects of NbS to be implemented at a site on different risks and ecosystem services, alongside their performance in addressing a single problem, can yield more holistic outcomes.

Within this framework, four key assessment dimensions emerge for NbS in the landscape planning process: ecological suitability, climatic requirements, societal needs, and spatial connectivity. Ecological suitability refers to the suitability of a site for an intervention in terms of natural processes; climatic requirements refer to current and future risks; societal needs refer to the problems faced by the population and users; and spatial connectivity refers to how the intervention connects with existing green and blue systems. Assessing these four dimensions together can make the role of NbS within landscape planning more systematic.

4. Climate Change Adaptation and Urban Resilience

Although the impacts of climate change on cities manifest in different ways, extreme temperatures and flooding associated with intense rainfall are two particularly important risk areas for nature-based solutions. The replacement of natural surfaces with impervious surfaces through urbanization limits stormwater infiltration into the soil and increases surface runoff. The density of built-up areas and declining vegetation cover can intensify the urban heat island effect through processes such as the storage of solar radiation, reduced evapotranspiration, and changes in air circulation. Therefore, blue-green infrastructure systems are becoming increasingly important in climate change adaptation policies.

The primary mechanisms through which green infrastructure reduces temperatures are shading and evapotranspiration. While trees and other vegetation limit the direct transmission of solar radiation to surfaces, plant transpiration and surface evaporation processes allow some of the surrounding heat to be converted into atmospheric water vapor. This process contributes to improved thermal comfort, particularly in open spaces within densely built-up areas with

high pedestrian use. Parks, tree-lined streets, green roofs, and green corridors are different landscape components that can be used for this purpose.

The meta-analysis by Ferrario et al. (2024), which evaluated the effectiveness of NbS in reducing heat and flood risks, demonstrated that the NbS interventions examined generally had positive effects in terms of heat and flood protection. However, the researchers noted that the effects of different interventions varied according to climatic and spatial conditions and that differences in measurement methods across studies made comparisons of their results difficult. Therefore, the success of NbS in climate adaptation needs to be considered in conjunction with local conditions and implementation practices, rather than evaluated solely on the basis of intervention type.

In flood and stormwater management, the primary function of NbS is to reduce the conversion of rainfall into surface runoff, provide water retention and detention, and increase infiltration into the soil where conditions permit. Rain gardens, bioswales, permeable surfaces, green roofs, urban wetlands, and floodplain conservation can be considered within this approach. Although these interventions may individually affect only a limited area, when planned as interconnected elements, they can form a system that intervenes at different stages of the urban water cycle.

One of the important characteristics of NbS in climate change adaptation is their potential for multifunctionality. A rain garden provides habitat for plants while managing stormwater. An urban corridor can support pedestrian movement while strengthening ecological connectivity; a tree-planted open space can provide recreational and aesthetic value while reducing temperatures. Therefore, interventions for climate adaptation in landscape planning should, where possible, be designed to deliver multiple ecosystem services within the same space.

However, multifunctionality does not produce positive outcomes in every case. The water consumption, maintenance requirements, allergenic properties, and invasive potential of plant species, as well as potential conflicts among different ecosystem services, should be considered. Likewise, it should be recognized that intensive tree planting may increase pressure on water resources under certain conditions, or that inappropriate species selection may fail to deliver the anticipated biodiversity benefits. Therefore, assessing local ecological conditions and long-term maintenance requirements should be treated as a fundamental planning principle in NbS planning.

Another issue highlighted in the recent literature is that heat and stormwater management are often planned separately. Sobhaninia et al. (2025) state that green

infrastructure site selection studies addressing these two risk areas together are limited in the literature and emphasize the need to develop multifunctional approaches in future green infrastructure planning. This constitutes an important area of research and practice for landscape architecture. This is because landscape planning has the tools to assess different environmental risks within the same spatial system.

Consequently, the fundamental contribution of NbS to climate change adaptation is to make natural processes part of cities' capacity for resilience. The aim here is to create an active landscape system that supports processes such as water movement, temperature regulation, habitat continuity, and people's experiences of open spaces, rather than viewing nature solely as an element to be protected within the city. This approach makes landscape planning one of the fields in which climate change adaptation policies are implemented.

5. Landscape Architecture Applications of Nature-based Solutions and Ecosystem Services

Translating nature-based solutions into landscape planning requires, first and foremost, linking natural processes with the planning of urban and rural spaces. The interventions used within this approach should be treated as components connected to the landscape system in which they are situated, rather than considered solely as design objects. Urban trees, urban forests, green roofs, rain gardens, bioswales, permeable surfaces, constructed wetlands, stream corridors, green corridors, and water retention areas are among the principal interventions that can be considered within this framework. The literature shows that green roofs and urban forests, in particular, have been extensively studied in relation to climate adaptation and urban sustainability (Wang et al., 2024). From a landscape planning perspective, the central issue is less which nature-based solution to use than where it should be used, in relation to which ecological process, and in response to which societal need. For example, tree planting in a densely built-up urban center can contribute to reducing heat stress through shading and evapotranspiration. Rain gardens and bioswales can be used to slow surface runoff, increase infiltration, and provide a degree of stormwater treatment. Green roofs can contribute to rainwater retention, the regulation of surface temperatures, and the energy performance of buildings. Wetlands and stream corridors can bring together different functions, such as flood management, habitat provision, and water quality improvement, within the same spatial system. Recent studies on bioswales also show that the design, placement, and maintenance conditions of these interventions are determining factors in their performance (Şen & Şat, 2024).

Therefore, nature-based solutions should not be treated as site-based interventions in landscape planning. For example, establishing a single rain garden may have a limited effect on stormwater management at the urban scale. By contrast, a blue-green infrastructure network that connects rain gardens, permeable surfaces, bioswales, green spaces, and natural drainage corridors forms a more holistic system that accounts for the movement of rainwater within the catchment. Similarly, there are significant differences in ecological function between planting trees in a single urban park and establishing interconnected green corridors across a city. Therefore, scale, connectivity, continuity, and spatial location should be considered fundamental planning variables in NbS planning.

Recent research demonstrates that urban green infrastructure affects different ecosystem services to varying degrees. In their study examining the relationship between urban green infrastructure and 22 different ecosystem services, Yao et al. (2025) reported that ecosystem services varied according to the type, spatial scale, and vegetation characteristics of green infrastructure, and that characteristics such as vegetation density, species diversity, and tree size and age were particularly important in the provision of regulating services (Yao et al., 2025).

The ecosystem services perspective is important for establishing the connection between NbS and human well-being. Air quality improvement, mitigation of the urban heat island effect, stormwater regulation, carbon storage, noise reduction, habitat provision, and the enhancement of recreational opportunities can be considered within different ecosystem service categories. The services provided by green spaces are not limited to regulating the physical environment; cultural services such as recreation, aesthetic experience, social interaction, and psychological well-being are also important components of this system. Therefore, measuring biophysical performance alone within the landscape planning process is insufficient for understanding the total value of NbS. The review by Herath and Bai (2024) also highlights the potential of urban green infrastructure to deliver different services and co-benefits simultaneously (Herath & Bai, 2024).

6. Multifunctionality, Synergies, and Trade-offs

One of the most important characteristics of nature-based solutions for landscape planning is their potential for multifunctionality. While conventional infrastructure investments often focus on solving a specific problem, NbS can address multiple environmental and societal needs within the same space. For example, the tree cover in an urban park can simultaneously perform numerous functions, such as shading, carbon storage, habitat provision, stormwater retention, recreation, and aesthetic value. This requires landscape planning to consider space

not merely as an area for use, but as a multifunctional system in which different ecological processes occur together.

However, multifunctionality does not mean that all services will improve together in every case. An NbS intervention that enhances a particular service may adversely affect another. Various relationships arise among considerations such as plant selection, water consumption, maintenance intensity, shading levels, biodiversity, and user safety. For example, dense, single-species planting designs may create a visually ordered space while offering lower biodiversity value. Similarly, the cooling effect provided by plant species requiring intensive irrigation in hot climates may increase pressure on water resources. Therefore, identifying the potential benefits alone is insufficient in NbS planning; synergies and trade-offs among these benefits also need to be assessed.

Systematic studies on urban green infrastructure show that relationships among ecosystem services can vary according to context, design characteristics, and stakeholder expectations. Therefore, it is incorrect to assume that a given NbS intervention will produce the same outcomes in all cities (Zhang & MacKenzie, 2024). Particularly in planning processes that pursue different objectives simultaneously, spatial multi-criteria analysis is an important tool for identifying suitable sites and comparing alternative solutions. The approach developed by Alves et al. (2024) treats the identification of priority areas, the selection of site-specific NbS, and the assessment of multifunctional performance as a sequential planning process.

Within this framework, landscape planning for NbS needs to move beyond the one solution–one problem approach. Flood risk at a site should not be assessed solely in terms of drainage infrastructure. The same site should also be examined in terms of biodiversity, recreation, pedestrian connectivity, urban heat, visual quality, and its potential for social use. In this way, the planning process can progress from fragmented solutions that address different problems separately toward solutions that deliver multiple ecosystem services within the same spatial system. However, the objective of multifunctionality itself should also be context-specific. Attempting to combine the greatest possible number of functions at every site may make the design unnecessarily complex in ecological and societal terms. Cook et al. (2024) draw attention to the possibility that considering numerous objectives simultaneously may create a paradox of choice in the planning process and therefore emphasize the need to plan multifunctionality deliberately.

7. Governance, Spatial Justice, and Implementation Challenges

The success of nature-based solutions depends as much on planning, financing, interinstitutional coordination, maintenance, and user participation as on the quality of physical design. Designing a park, rain garden, or green corridor is only the initial stage of implementation. To sustain the functions of these spaces over the long term, maintenance responsibilities must be defined, financial resources secured, performance monitored, and interventions undertaken when necessary. Therefore, NbS should be considered not only a matter of landscape design but also a long-term management process.

The management assessment indicates that greater consideration should be given to the role of public institutions, stakeholder participation, environmental justice, and local and community knowledge. Reviewing 88 studies, van der Jagt et al. (2023) identified different dimensions of urban NbS management and highlighted the importance of participatory planning and multi-stakeholder processes.

This issue is also important for spatial justice. Which neighborhoods receive new green spaces or climate adaptation infrastructure, who benefits from these spaces, and who participates in decision-making constitute the social dimension of planning. Concentrating NbS investments solely in economically advantaged areas or areas that already enjoy high-quality environmental conditions may increase environmental inequalities within the city rather than reduce them. Systematic research examining the environmental justice dimension of NbS shows that some NbS interventions can produce unintended or adverse social outcomes (Kato-Huerta & Geneletti, 2022).

Therefore, in the landscape planning process, the questions “Who will benefit from this intervention?”, “Which social groups’ needs have been considered?”, and “How will the costs and benefits that may arise after implementation be distributed?” are as important as the question “Where should NbS be implemented?”. A recent systematic review published in 2026 also reveals that biophysical indicators are more prominent than social and justice indicators in NbS research. This suggests that assessing NbS performance solely in terms of temperature, surface runoff, vegetation cover, or biodiversity may be insufficient (Villanova et al., 2026).

Another dimension of implementation challenges concerns institutional and technical capacity. A systematic review published in 2025 assessed 90 studies published between 2014 and 2024 and reported that financial, technical, social, and political barriers limit the wider implementation of NbS. The study identified spatial justice, governance integration, financial feasibility, and technical capacity among the important conditions supporting successful implementation (Zarei & Shahab, 2025). A more recent assessment reveals that, although NbS

are increasingly included in planning and policy documents, fragmentation persists across the design, implementation, maintenance, and monitoring stages. This is discussed in the literature as the implementation gap (Martin et al., 2025).

Accordingly, mainstreaming nature-based solutions in landscape planning cannot be achieved solely by creating more green spaces. Planning decisions need to be linked to broader-scale spatial strategies, the technical capacity of local governments strengthened, the responsibilities of different institutions clarified, financing and maintenance models established, users involved in decision-making, and performance monitored after implementation. The Global Standard for NbS developed by the IUCN also provides an assessment framework that supports this approach, recommending the joint assessment of ecological, societal, and governance dimensions in NbS design and implementation through 8 criteria and 27 indicators (IUCN, 2020).

From this perspective, landscape planning evolves from a stage at which nature-based solutions are merely physically located into an integrated domain of decision-making in which ecological processes, spatial structures, societal needs, and governance mechanisms are addressed together. In the next stage, how this approach can be translated into the planning process can be addressed through an integrated model, ranging from analysis of existing site conditions to prioritization, selection of the appropriate NbS type, spatial design, and monitoring and evaluation.

8. An Integrated Approach to Nature-based Solutions in Landscape Planning

The effectiveness of nature-based solutions (NbS) often depends on spatial relationships extending beyond individual intervention sites. While rain gardens and green roofs can be assessed at the plot scale, flood mitigation, urban cooling, and habitat connectivity require consideration at neighborhood, city, and catchment scales. NbS should therefore be integrated into landscape planning through a multiscale approach that connects site-level interventions with broader ecological systems. However, their integration into spatial planning and climate adaptation policies remains fragmented and frequently project-based (Corgo et al., 2024).

An integrated planning process should begin with an assessment of landscape characteristics, land use, hydrology, ecological connectivity, climatic conditions, and social needs. Spatial analyses can then identify environmental risks and priority intervention areas. Geographic Information Systems (GIS), remote sensing, and multi-criteria decision analysis can support this process by combining indicators such as land cover, imperviousness, slope, temperature, flood susceptibility, access to green spaces, and social vulnerability. Recent

research highlights the need to consider multiple risks and functions when identifying suitable locations for green infrastructure (Sobhaninia et al., 2025; Prado et al., 2024).

NbS should also be planned in relation to conventional infrastructure. In densely built-up or high-risk areas, engineered systems may remain necessary, while nature-based interventions can complement their functions. In urban water management, this requires coordination between technological systems, urban design, and spatial planning (Tsatsou et al., 2023).

Monitoring is essential because ecological and social benefits may develop gradually. Changes in runoff, temperature, water quality, biodiversity, vegetation health, and public use should be assessed over time. This makes landscape planning an adaptive process rather than a static land-use decision. Context sensitivity, multifunctionality, governance, and long-term maintenance are central to successful implementation (Kabisch et al., 2022). Mainstreaming NbS also requires broader institutional and financial changes beyond the replication of individual projects (Adams et al., 2023).

9. The Potential of Nature-based Solutions in Türkiye

Türkiye's climatic, topographic, hydrological, and ecological diversity creates varied opportunities for NbS. Their potential applications include climate adaptation, green-space planning, stormwater management, and disaster risk reduction. Nevertheless, integration into planning processes differs among cities and institutions.

An assessment of metropolitan climate action plans found that 23 of Türkiye's 30 metropolitan municipalities had local climate action plans, including 18 plans addressing both mitigation and adaptation. Water management, disaster risk reduction, green spaces, and infrastructure were among the main adaptation priorities. However, institutional coordination, consideration of vulnerable groups, data availability, and monitoring remain areas requiring improvement (Tuğaç, 2025). Regional differences should guide the selection of NbS. Heat, drought, and water scarcity are important concerns in the Mediterranean and Aegean regions, whereas flooding and landslides affect parts of the Black Sea region. Central and Eastern Anatolia require approaches that account for low precipitation, frost, snow cover, summer drought, and seasonal temperature variation. Plant selection, irrigation demand, and stormwater reuse are particularly important where water resources are limited. NbS can also support treated-water reuse and more circular urban water systems (Tsatsou et al., 2023).

Site selection should not rely on climate data alone. Soil, topography, existing green and blue infrastructure, land ownership, socioeconomic conditions, and community needs must also

inform decisions. Inclusive planning requires the integration of local knowledge, meaningful stakeholder participation, and representation of vulnerable groups (Mitincu et al., 2026).

NbS can be implemented at different scales, from neighborhood parks, schoolyards, and university campuses to stream corridors, agricultural landscapes, and rural settlement edges. Connecting smaller interventions can strengthen ecological networks while allowing municipalities to distribute limited resources more strategically. Integrating ecological connectivity, flood-prone areas, catchments, green corridors, and climate risks into spatial plans would help move NbS beyond isolated projects. Its long-term success in Türkiye will depend on embedding nature-based approaches in planning, implementation, and monitoring systems.

10. Conclusion

Nature-based solutions provide a framework for addressing interconnected challenges such as climate change, biodiversity loss, water management, and urban heat. Their contribution to landscape planning lies in incorporating natural processes and ecosystem functions into spatial decision-making (Corgo et al., 2024; Fang et al., 2023). This requires assessing ecological capacity, environmental risks, and potential ecosystem services alongside land-use demands.

Evidence suggests that NbS can reduce heat and flood risks, although outcomes vary according to intervention type, climate, spatial context, and assessment methods (Ferrario et al., 2024; Prado et al., 2024). Their effectiveness therefore depends on context-specific planning rather than uniform solutions. Linking parks, rain gardens, green roofs, wetlands, stream corridors, and permeable surfaces can support connected blue-green infrastructure at broader spatial scales (Sobhaninia et al., 2025).

Multifunctionality also involves trade-offs. Plant selection, water consumption, maintenance, biodiversity, recreation, and aesthetics may generate competing demands. NbS assessment should therefore consider potential environmental, economic, and social costs alongside ecosystem benefits (Herath & Bai, 2024). Long-term success further depends on institutional coordination, funding, technical capacity, maintenance, and monitoring (van der Jagt et al., 2023; Zarei & Shahab, 2025).

Equity must remain part of this assessment. The distribution of green spaces, access to adaptation investments, and participation in decision-making influence who benefits from NbS. Evaluation should consequently extend beyond biophysical indicators to include accessibility, benefit distribution, and the needs of vulnerable groups (Mitincu et al., 2026).

In Türkiye, diverse landscapes create substantial potential for NbS, but broader implementation requires stronger connections among climate action plans, spatial planning, green infrastructure strategies, catchment management, and disaster risk reduction. Although adaptation is increasingly recognized in metropolitan climate plans, institutional coordination, data infrastructure, and monitoring need further development (Tuğaç, 2025).

Ultimately, NbS should be understood as an approach that places landscape ecological processes at the center of planning, rather than as a substitute for landscape planning itself. Its contribution depends on selecting appropriate spatial scales, maintaining ecological connectivity, evaluating trade-offs, addressing social needs, and monitoring outcomes over time. Landscape architecture can connect ecological knowledge with spatial decisions, helping shape landscapes that are more resilient, multifunctional, and socially inclusive.

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CHAPTER 5

LANDSCAPE AND FASHION DESIGN FROM A PHENOMENOLOGICAL PERSPECTIVE: A PROPOSED CONCEPTUAL MODEL

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1. Introduction

In design disciplines, visual elements such as form, color, and texture, together with material selection, play a fundamental role in shaping the physical and aesthetic characteristics of designed environments and objects. The organization of these elements within a composition contributes to visual coherence and the overall aesthetic quality of design (Sachant et al., 2016; Ulusoy & Olguntürk, 2017; Alpak et al., 2018; Alpak et al., 2024; Alpak et al., 2025; Yavuz, 2025). Nevertheless, the significance of designed environments and objects in human experience cannot be adequately understood through their formal and visual attributes alone. Sensory and bodily interactions with design, together with the cognitive interpretations and emotional responses arising from these encounters, shape how individuals experience, perceive, and assign meaning to their surroundings and material objects (Desmet & Hekkert, 2007; Yavuz, 2014; Jelić et al., 2016; Pallasmaa, 2024; Alpak & Kurak Sezgin, 2025). Within this context, phenomenology provides a theoretical framework for examining the relationship between the physical characteristics of design and the lived experiences through which individuals engage with the world.

Phenomenology is a philosophical tradition concerned with the structures of human experience and the ways in which phenomena are disclosed to consciousness. Husserl (2012) emphasized intentionality as a fundamental characteristic of consciousness, while Heidegger (1962) conceptualized human existence through the notion of *being-in-the-world*, highlighting the inseparable relationship between individuals and their surroundings. Building upon this philosophical tradition, Merleau-Ponty (2012) foregrounded the embodied nature of perception, demonstrating that human engagement with the world is not exclusively cognitive but is fundamentally grounded in sensory and bodily experience. From this perspective, perception is understood not as a passive reception of external stimuli but as an active, embodied process through which individuals encounter, interpret, and inhabit their environments.

These phenomenological perspectives offer a conceptual basis for understanding design beyond its visual appearance and material composition, emphasizing the dynamic relationships established between individuals and designed environments or objects. Within this framework, landscape architecture and fashion design represent two distinct yet potentially comparable design disciplines. Although they operate at different physical and spatial scales, both engage the human body through sensory perception, movement, spatial relationships, and processes of experiential meaning-making. Their comparison therefore provides an opportunity to explore how embodied experience may constitute a shared theoretical dimension across otherwise distinct fields of design.

Landscape architecture is primarily concerned with the spatial organization and experiential qualities of outdoor environments in which individuals move, perceive, and interact with natural and built elements. Fashion design, by contrast, addresses the formal, functional, and material characteristics of garments that directly engage with the body. From a phenomenological perspective, landscape may be understood as a broader spatial environment within which the body is situated and through which it moves, whereas clothing may be conceptualized as an immediate material interface that accompanies the body and mediates its sensory and spatial relationship with the surrounding world. Accordingly, the phenomenological relationship between landscape architecture and fashion design can be explored through their differing yet interconnected modes of bodily engagement.

Against this theoretical background, the present study aims to examine the shared phenomenological dimensions of landscape architecture and fashion design and to propose a conceptual model that articulates their relationships with embodied human experience. The study adopts a theoretical review approach based on the comparative interpretation and conceptual synthesis of selected foundational and relevant scholarly works. Rather than constituting a systematic literature review or an empirical investigation, it seeks to develop an integrative theoretical perspective through which the experiential relationships between landscape, clothing, and the human body can be examined. To achieve this aim, the study first discusses the theoretical foundations of phenomenology in relation to design, then comparatively examines the experiential characteristics of landscape architecture and fashion design, and finally proposes a conceptual model identifying their shared phenomenological dimensions and potential experiential implications.

2. Theoretical Foundations of the Phenomenological Approach in Design

The phenomenological approach provides a theoretical perspective through which design can be understood not merely as the creation of environments or objects characterized by physical and aesthetic attributes, but also in terms of the experiential relationships individuals establish with their surroundings and material objects. From this perspective, the meaning of design is shaped not exclusively by the designer's formal and compositional decisions, but also by the ways in which individuals perceive, inhabit, interact with, and assign meaning to designed environments and objects.

Within Husserl's (2012) phenomenological philosophy, intentionality refers to the fundamental directedness of consciousness toward objects, phenomena, or experiences. When considered in relation to design, this perspective suggests that understanding designed environments and objects requires attention not only to their physical properties but also to how

they are perceived and experienced by individuals. Heidegger (1962), through the concept of *being-in-the-world*, challenges the understanding of human beings as detached observers of an external environment. Instead, human existence is understood as fundamentally situated within the world and constituted through everyday practices, activities, and relationships. Applied to spatial design, this perspective suggests that the meaning of space cannot be adequately explained through its geometric configuration and physical boundaries alone, but must also be considered in relation to the practices and lived experiences through which individuals engage with their surroundings.

Merleau-Ponty (2012) further develops the phenomenological understanding of perception by emphasizing its embodied character. From this perspective, perception is inseparable from bodily existence, as individuals encounter and experience the world through movement, touch, spatial orientation, and the integration of multiple sensory modalities. In a related discussion within architectural theory, Pallasmaa (2024) critiques the predominance of vision in architectural discourse and emphasizes the multisensory and embodied dimensions of spatial experience. Taken together, these perspectives provide a theoretical basis for examining design beyond visual appearance, drawing attention to the tactile, auditory, kinesthetic, and other sensory dimensions through which designed environments and objects are experienced.

The concept of *place* is particularly significant in the application of phenomenological thought to spatial design. Norberg-Schulz (1980), through the concept of *genius loci*, or the *spirit of place*, examines the relationship between the distinctive character of a place and the existential dimensions of human engagement with the environment. Similarly, Relph (1976) explores the experiential dimensions of place through concepts such as place identity, insideness, and outsideness, highlighting the importance of lived experience in the formation of meaningful relationships between individuals and their surroundings. These perspectives suggest that the significance of place extends beyond its physical configuration to encompass the experiential, cultural, and existential meanings associated with it.

Considered collectively, these theoretical perspectives indicate that phenomenology offers a comprehensive conceptual foundation for understanding the relationship between the physical and formal characteristics of design and the lived experiences of individuals. Rather than treating designed environments and objects as autonomous aesthetic entities, a phenomenological perspective emphasizes their significance as they are encountered, experienced, and interpreted through embodied engagement with the world. This understanding provides a theoretical basis for comparatively examining landscape architecture and fashion

design, particularly in relation to embodiment, sensory perception, movement, spatial experience, and experiential meaning-making.

2.1. Fundamental Dimensions of Phenomenological Experience in Design

Phenomenological experience in design can be examined through several interrelated conceptual dimensions that should not be understood as discrete or mutually exclusive categories. In the present study, these dimensions are discussed in terms of sensory perception, embodiment, lived experience, spatiality, atmosphere, temporality, memory, and identity. Together, they provide a theoretical framework for understanding how individuals engage with, experience, and attribute meaning to designed environments and objects.

Sensory perception constitutes a fundamental aspect of how individuals encounter and experience the physical and material characteristics of design. Elements such as color, form, texture, light, material, and scale contribute to visual, tactile, and other sensory experiences. Drawing on the phenomenological perspective of Merleau-Ponty (2012) and the multisensory approach of Pallasmaa (2024), these characteristics can be understood not as isolated sensory stimuli but as interconnected aspects of an integrated perceptual experience.

Embodiment refers to the constitutive role of the body in the relationship between individuals and designed environments or objects. Through movement, posture, spatial orientation, and physical contact, the body actively participates in the formation of experience. From a phenomenological perspective, the body is therefore not merely a passive recipient of sensory information but an active medium through which the world is perceived, encountered, and understood (Merleau-Ponty, 2012).

Lived experience and spatiality concern the ways in which designed environments and objects acquire meaning through embodied engagement, everyday practices, and situated experience. Seamon (1979) emphasizes the significance of habitual bodily movements and everyday routines in shaping environmental experience, while Relph (1976) examines the relationship between lived experience, place identity, and the sense of belonging. These perspectives suggest that spatial meaning emerges not solely from physical configuration but also from the experiential relationships individuals develop with their surroundings.

Atmosphere and aesthetic experience concern the relationship between the sensory qualities of designed environments or objects and the affective responses they evoke. Böhme (2018) conceptualizes atmosphere neither as an exclusively objective property of the environment nor as a purely subjective psychological state, but as a relational aesthetic phenomenon arising through the encounter between environmental qualities and the

experiencing subject. This perspective highlights the importance of sensory and affective dimensions in shaping the overall character of design experience.

Temporality, memory, and identity emphasize the ways in which design experience is situated within an individual's personal history, everyday practices, cultural background, and changing environmental conditions. From this perspective, the meanings attributed to designed environments and objects are not confined to their immediately perceived physical characteristics. Rather, they may develop and transform over time through the interaction of present sensory encounters, remembered experiences, and individual or collective processes of identification.

Taken together, these interrelated dimensions provide a theoretical basis for comparatively examining landscape architecture and fashion design from a phenomenological perspective. Although both disciplines engage the body through sensory, spatial, and experiential relationships, this shared conceptual foundation does not imply that they produce identical forms of experience. Instead, it enables an examination of how comparable phenomenological processes may emerge through different material conditions, bodily relationships, and spatial scales.

3. A Phenomenological Reading of Landscape and Fashion

Although landscape architecture and fashion design differ in their physical scales, functions, and contexts of use, both can be examined in terms of the sensory and embodied relationships individuals establish with their material surroundings. From a phenomenological perspective, the basis for comparing these disciplines extends beyond the visual and formal characteristics of designed environments and objects to encompass the ways in which such characteristics are encountered, experienced, and interpreted through bodily engagement. Accordingly, the present study approaches landscape and clothing as distinct yet potentially comparable contexts of lived experience, emphasizing the relationships between material qualities, sensory perception, bodily movement, and experiential meaning-making.

3.1. A Phenomenological Reading of Landscape

A phenomenological approach to landscape moves beyond an understanding of landscape as a visually perceived scene or a composition of physical elements, emphasizing instead the experiential relationships individuals establish with their surroundings. Tilley (1994) examines landscape through the interrelationships among places, paths, bodily movement, and social meanings, highlighting the significance of situated experience in the interpretation of landscape. From this perspective, landscape is not simply a static physical setting but a meaningful

environment encountered and interpreted through movement, spatial orientation, and everyday engagement.

Landscape experience involves the integration of visual, tactile, auditory, olfactory, and kinesthetic perception. For example, although a forest path may be described in functional terms as a circulation element connecting different locations, its phenomenological significance extends beyond this physical function. As individuals move along the path, they encounter variations in topography, ground texture, vegetation density, light and shadow, natural sounds, and visual openness. These interrelated sensory and spatial conditions contribute to the experience of the landscape as a dynamic and embodied encounter rather than a purely visual composition. This example illustrates the distinction between the physical organization of landscape elements and the lived spatial experience through which individuals perceive and interpret them. The theoretical perspectives of Relph (1976) and Norberg-Schulz (1980) further support an understanding of landscape experience in relation to place identity, environmental character, and the meanings associated with human engagement with place. Relph (1976) emphasizes the experiential foundations of place identity and the significance of individuals' relationships with their surroundings, while Norberg-Schulz (1980) explores the existential dimensions of place through the concept of *genius loci*. Considered together, these perspectives suggest that a phenomenological interpretation of landscape requires attention not only to its physical and formal organization but also to the sensory perceptions, bodily movements, and experiential meanings through which individuals develop relationships with particular places.

Accordingly, landscape design elements such as topography, planting arrangements, water features, surface materials, and spatial configuration can be understood not merely as physical or aesthetic components but also as material conditions that shape opportunities for sensory engagement, bodily movement, and lived spatial experience.

3.2. A Phenomenological Reading of Fashion

A phenomenological approach to fashion design extends beyond the aesthetic, functional, and symbolic characteristics of garments to examine how clothing is experienced through the body. Although fashion encompasses broader cultural, social, and symbolic systems, the present study focuses specifically on clothing and the embodied experience of dressing as the primary basis for comparison with landscape architecture.

Entwistle (2023) conceptualizes dressing as an embodied practice, emphasizing the interconnected relationships among clothing, the body, and social context. Within this perspective, the dressed body cannot be adequately understood through biological or cultural explanations alone; rather, it emerges through the interaction of bodily experience, material

practices, and socially situated forms of dress. Clothing is therefore not simply an external object placed upon the body but an integral component of how the body is experienced, presented, and situated within everyday life.

The material and formal characteristics of garments, including fabric texture, weight, cut, flexibility, thermal properties, and patterns of bodily contact, may influence sensory perception, bodily awareness, and freedom of movement. For instance, a closely fitted garment may constrain particular bodily movements, whereas a loosely structured or flowing fabric may respond dynamically to movement and alter the wearer's perception of bodily form and spatial extension. Such examples illustrate how clothing can be experienced not merely as a visual composition but also as a material condition that participates in the sensory and kinesthetic dimensions of bodily experience.

Drawing on Merleau-Ponty's (2012) phenomenological understanding of embodied perception, clothing may be interpreted as a material interface through which the body encounters and interacts with its surrounding environment. This interpretation does not imply that Merleau-Ponty developed a specific theory of fashion; rather, it represents a conceptual application of his understanding of bodily perception to the experience of dress. From this perspective, garments can be examined in relation to bodily movement, tactile engagement, spatial awareness, and the experiential dimensions of identity.

Accordingly, a phenomenological reading of fashion design involves considering the formal and material characteristics of clothing in conjunction with embodied.

3.3. Shared Phenomenological Dimensions of Landscape and Fashion Design

One of the fundamental phenomenological commonalities between landscape architecture and fashion design is *embodiment*. From a phenomenological perspective, the body is not merely an instrument through which the world is perceived but the fundamental medium through which individuals engage with and experience their surroundings (Merleau-Ponty, 2012). Within this framework, landscape can be understood as a large-scale spatial environment through which the body moves and engages in multisensory experience, whereas clothing constitutes an immediate material interface that directly engages with the body and participates in bodily movement and sensory perception. The phenomenological comparison of landscape architecture and fashion design is therefore grounded in the proposition that both disciplines establish experiential relationships with the human body, although these relationships occur at different physical and spatial scales. Accordingly, the relationship between the body and its material surroundings constitutes a shared theoretical foundation for examining the two

disciplines. In landscape architecture, spatial scale, circulation patterns, topography, seating dimensions, vegetation density, and surface textures contribute to bodily and spatial experience. In fashion design, garment volume, cut, flexibility, and material properties influence bodily awareness, movement, and tactile engagement.

A second shared dimension concerns *the multisensory* nature of design experience. Phenomenological approaches challenge the predominance of visual perception in the understanding of designed environments and objects. Pallasmaa (2005), particularly in the context of architecture, critiques the privileging of vision and emphasizes the significance of sensory integration in the experience of space. Extending this perspective to landscape architecture and fashion design suggests that their experiential qualities cannot be adequately understood through visual appearance alone. In landscape environments, vegetation textures, natural sounds, scents, temperature, and climatic conditions contribute to multisensory engagement. Similarly, in fashion design, fabric texture, weight, thermal characteristics, and bodily contact shape the sensory experience of clothing. Although these sensory encounters differ in their material conditions and modes of engagement, both demonstrate the importance of considering design as an integrated perceptual experience.

Movement and kinesthetic experience constitute another significant point of comparison. In Tilley's (1994) phenomenological interpretation of landscape, paths, movement, and spatial encounters play an important role in the formation of relationships among places and the meanings attributed to them. As individuals move through a landscape, their visual perspectives, spatial orientations, perceptions of proximity and distance, and encounters with environmental stimuli continually change. Similarly, the experiential qualities of clothing cannot be fully understood through its static visual form. Rather, garments interact dynamically with the moving body, as fabric drape, flexibility, fit, and structural characteristics may facilitate, constrain, or otherwise influence bodily movement. From this perspective, movement constitutes an important process through which the material and formal qualities of both landscape and clothing become experientially meaningful.

Spatiality provides a further conceptual connection between the two disciplines. From a phenomenological perspective, space is not merely an abstract container existing independently of human experience; rather, spatial experience is closely associated with bodily orientation, movement, and sensory engagement (Merleau-Ponty, 2012). Within this conceptual framework, landscape may be interpreted as a broader spatial environment in which the body is situated, whereas clothing may be understood as an immediate material layer surrounding

and moving with the body. The relationship among skin, clothing, immediate surroundings, architectural space, and landscape can therefore be conceptualized as a series of interrelated bodily and environmental interfaces. This interpretation does not suggest that clothing and landscape constitute equivalent forms of space, but rather that both participate in shaping the body's relationship with its material environment at different scales.

Atmosphere and aesthetic experience also offer a basis for phenomenological comparison. Landscape experience frequently emerges through the combined effects of multiple environmental characteristics rather than through the isolated perception of individual components. Light, sound, temperature, materiality, color, spatial enclosure, and openness may collectively contribute to atmospheric qualities experienced as calm, dynamic, mysterious, or somber. Drawing on Böhme's (1993) conceptualization of atmosphere as a relational aesthetic phenomenon, these qualities can be understood as emerging through the encounter between environmental conditions and the experiencing subject. In fashion design, the combined effects of fabric, silhouette, color, texture, bodily fit, and movement may similarly contribute to an overall affective and aesthetic experience. However, experiences such as comfort, protection, formality, vulnerability, or confidence are not determined by material characteristics alone; they are also shaped by individual interpretation and sociocultural context. Thus, the concept of atmosphere provides a comparative perspective for examining how material compositions participate in the formation of sensory and affective experiences across different design scales.

Temporality and memory constitute additional dimensions shared by landscape architecture and fashion design. Neither landscape nor clothing is experienced independently of temporal processes. Landscape environments undergo transformations associated with daily light cycles, seasonal variation, climatic conditions, vegetation growth, and ecological change. Similarly, garments change through repeated use, material aging, alterations in bodily fit, and evolving cultural practices of dress. Beyond these physical transformations, both landscapes and garments may become associated with individual and collective memories. Particular scents, vegetation, pathways, or public spaces may evoke remembered experiences, just as specific fabrics or garments may be associated with particular individuals, events, periods, or places. From a phenomenological perspective, such relationships suggest that the meaning of designed environments and objects is shaped not only through immediate sensory encounters but also through the interaction of present experience, memory, and lived time.

Finally, *identity and belonging* represent important experiential dimensions through which landscape architecture and fashion design can be comparatively examined. Relph (1976)

emphasizes the relationship between place experience, identity, and individuals' sense of connection to their surroundings. In the context of fashion, Entwistle (2000) conceptualizes dress as an embodied social practice through which individuals negotiate bodily presentation, social expectations, and identity. Although place identity and identities expressed through clothing emerge within different material and sociocultural contexts, both may be understood in relation to the ways individuals experience and position themselves within the world. From this perspective, identity is not reducible to visual or symbolic representation alone but may also be constituted through embodied encounters, everyday practices, and the meanings attributed to particular places and material objects.

Taken together, these shared phenomenological dimensions do not imply that landscape architecture and fashion design produce identical experiences or operate through equivalent spatial and material relationships. Rather, they provide a common theoretical framework for examining how the two disciplines participate in shaping embodied relationships between individuals and their surroundings under different physical, material, and sociocultural conditions. Accordingly, embodiment, multisensory perception, movement, spatiality, atmosphere, temporality, memory, and identity constitute interrelated conceptual dimensions through which landscape architecture and fashion design can be comparatively interpreted. These dimensions also establish the theoretical basis for the conceptual model proposed in the following section.

Table 1. The relationship between fashion and landscape

Phenomenological Dimension	Landscape design	Fashion design
Embodiment	Embodied Landscape Experience	Embodied Experience of Clothing
Sensory Perception	Ground surfaces, vegetation, water, sounds, scents, and climatic conditions	Fabric texture, weight, thermal properties, and tactile contact
Movement and Kinesthetic Experience	Walking, stopping, changing direction, and spatial navigation	Walking, sitting, posture, and bodily movement in relation to clothing
Spatiality	Body-environment relationship and spatial orientation	Body-garment relationship and the spatial experience of clothing
Atmosphere and Aesthetic Experience	Environmental atmosphere, affective responses, and perceived spatial character	Affective and bodily experience, aesthetic expression, and perceived style
Temporality	Seasonal variation, vegetation growth, changing light conditions, and environmental transformation	Garment use, material aging, changes in fit, and fashion cycles
Memory	Place memory and place-related recollections	Clothing-related memory and embodied memory
Identity and Belonging	Place identity and place attachment	Personal identity, social identity, and belonging through dress

4. A Proposed Conceptual Model of the Phenomenological Relationship Between Landscape and Fashion Design

Building upon the shared phenomenological dimensions of landscape architecture and fashion design discussed in the preceding sections, this study proposes a four-component conceptual model to examine how these two disciplines relate to embodied human experience. The model integrates the material and formal characteristics of designed environments and objects, sensory and embodied interaction, experiential meaning-making, and potential experiential outcomes within a common theoretical framework. Rather than treating these components as independent or sequentially determined variables, the model conceptualizes them as interrelated dimensions of design experience that may interact dynamically across different material conditions and spatial scales.

1. Material and Formal Characteristics of Design

The first component encompasses the material and formal characteristics of designed environments and objects. Attributes such as form, color, texture, materiality, scale, volume, and composition constitute the physical conditions through which individuals encounter and engage with design. In landscape architecture, these characteristics are expressed through

topography, planting arrangements, surface materials, water features, and spatial organization. In fashion design, they are manifested through garment silhouette, cut, fabric properties, layering, and surface treatments. Although these characteristics differ in their physical configurations and functional contexts, they provide the material basis for sensory and embodied engagement in both disciplines.

2. Sensory and Embodied Interaction

The second component concerns the ways in which individuals encounter and experience the material and formal characteristics of design through sensory perception and bodily engagement. Visual, tactile, auditory, olfactory, thermal, and kinesthetic experiences contribute to the perception of designed environments and objects, although their relative significance varies according to the characteristics of each discipline. These experiences are closely associated with bodily movement, spatial orientation, posture, and physical contact. Accordingly, design experience is understood not merely as the passive perception of physical attributes but as an active and embodied relationship between individuals and their material surroundings.

3. Experiential Meaning-Making

The third component addresses the processes through which sensory and embodied experiences become meaningful in relation to individuals' previous experiences, cultural backgrounds, memories, and situated contexts. Within this process, the material and formal characteristics of design are not experienced solely as perceptual qualities but may become associated with personal, social, and cultural meanings. Experiential meaning-making is therefore understood as a context-dependent and interpretive process rather than a uniform response to particular design attributes. Consequently, similar material or formal characteristics should not be assumed to generate identical experiences or meanings among different individuals.

4. Potential Experiential Outcomes

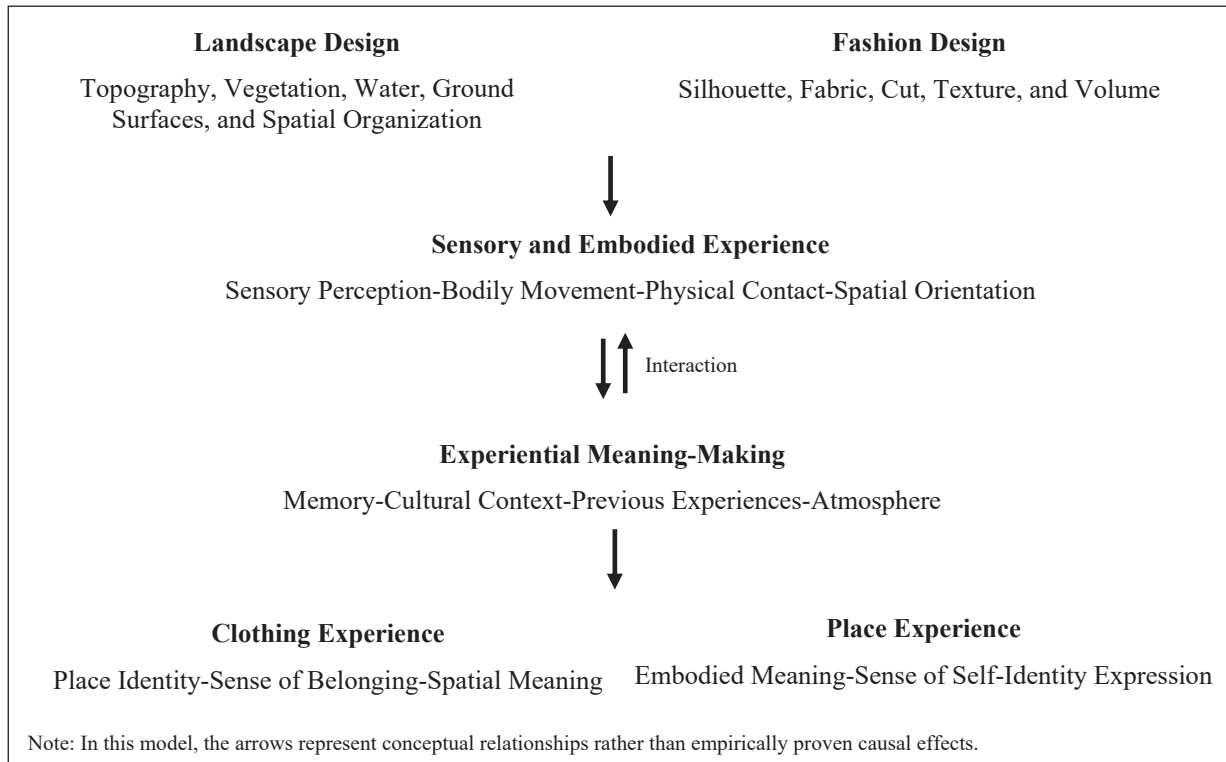
The fourth component concerns the potential experiential outcomes associated with individuals' relationships with designed environments and objects. In landscape architecture, these outcomes may include sense of place, place identity, place attachment, and feelings of belonging. In fashion design, they may involve bodily comfort, self-perception, embodied expressions of identity, and meanings associated with personal and social belonging. These outcomes represent possible dimensions of lived experience rather than predetermined effects of particular design characteristics. Their emergence and interpretation may vary according to

individual characteristics, sociocultural contexts, previous experiences, and the circumstances in which design is encountered.

The relationships among these four components should not be interpreted as linear, deterministic, or universally applicable causal processes. Although the model distinguishes material and formal characteristics, sensory and embodied interaction, experiential meaning-making, and potential experiential outcomes for analytical purposes, these components may influence one another through reciprocal and context-dependent relationships. For example, previously established meanings and memories may shape subsequent sensory encounters with a landscape or garment, while repeated embodied experiences may contribute to the transformation of identity-related meanings over time.

As illustrated in Figure 1, the proposed conceptual model provides an integrative theoretical framework for examining the phenomenological relationships between landscape architecture, fashion design, and embodied human experience. Its primary contribution lies in identifying a set of shared experiential processes through which the two disciplines can be comparatively interpreted without assuming equivalence between their material conditions, spatial scales, or experiential outcomes. Accordingly, the model is presented as a theoretically derived conceptual proposition that may inform future comparative and empirical investigations, rather than as an empirically validated framework establishing causal relationships.

Figure 1. A Proposed Conceptual Model of the Phenomenological Relationship Between Landscape and Fashion Design



The proposed model acknowledges the possibility of reciprocal interactions among its components. In particular, previous experiences, cultural context, and individual user characteristics may influence different aspects of sensory and embodied experience and experiential meaning-making. Accordingly, future empirical investigations should examine the model not as a linear process but as an interconnected conceptual framework characterized by reciprocal relationships.

The conceptual model presented in Figure 1 illustrates the shared components of phenomenological experience in landscape architecture and fashion design, together with the theoretical relationships among these components. To systematically examine how the components identified in the model are manifested within each design discipline, a comparative framework is presented in Table 2. This comparison provides a structured understanding of how shared phenomenological processes may be expressed across different material conditions and spatial scales.

Table 2. A Comparative Analysis of Landscape and Fashion Design Based on the Conceptual Model Developed from Phenomenological Literature

Model Component	Landscape Design	Fashion Design
Material and Formal Characteristics	Topography, vegetation, water features, ground surfaces, and spatial organization	Silhouette, cut, fabric, texture, and volume
Sensory and Embodied Interaction	Walking, spatial orientation, tactile engagement, and environmental sensations	Dressing, bodily contact, movement, and bodily sensations
Experiential Meaning-Making	Spatial experience, place memory, and environmental meaning	Experience of dressing, personal memory, and cultural meaning
Potential Experiential Outcomes	Place identity, sense of belonging, and place attachment	Bodily comfort, sense of self, and identity expression

Note. The table presents a theoretical comparison derived from the proposed conceptual model. The identified relationships represent potential dimensions of phenomenological experience rather than empirically validated outcomes.

The theoretical framework developed in this study suggests that the relationships between landscape architecture, fashion design, and human experience can be examined through a shared set of phenomenological concepts. However, identifying commonalities between these two disciplines requires careful consideration of their differences in physical scale, contexts of use, and modes of embodied interaction.

In landscape design, individuals experience spatial qualities through movement within and engagement with the physical environment. In fashion design, by contrast, garments maintain direct contact with the body and move in conjunction with it. This distinction highlights the different ways in which phenomenological experience is constituted within each discipline. Accordingly, comparisons between landscape and fashion design should be based not on the assumption that their experiences are identical, but rather on the similarities in the conceptual relationships through which these experiences emerge and acquire meaning.

The principal theoretical contribution of this study is the development of a comparative conceptual model that examines phenomenological experience in landscape and fashion design through four interrelated components: material and formal characteristics, sensory and embodied interaction, experiential meaning-making, and potential experiential outcomes. By bringing these components together within a shared analytical framework, the proposed model provides a conceptual basis for examining how different design disciplines shape and mediate human experience.

Nevertheless, the proposed framework is derived from a theoretical interpretation of selected literature rather than empirical investigation. Consequently, the conceptual components and the relationships proposed among them should be understood as theoretical propositions rather than empirically validated findings. Future research could further examine

the applicability and explanatory potential of the model through phenomenological interviews, user experience studies, and comparative investigations across different design contexts.

5. Conclusion

The phenomenological approach provides a theoretical perspective for examining landscape architecture and fashion design beyond their physical, formal, and aesthetic characteristics, emphasizing the sensory, embodied, and meaning-related dimensions of human experience. Although these disciplines operate at different spatial scales and within distinct functional contexts, they share certain conceptual dimensions concerning the relationships between the human body, material environments, and lived experience.

In landscape design, the body engages with the surrounding environment through movement, perception, and spatial experience. In fashion design, by contrast, garments function as material interfaces that remain in direct contact with the body and mediate its relationship with the surrounding environment. Despite these differences, both disciplines can be examined through shared phenomenological concepts, including embodiment, sensory perception, movement and kinesthetic experience, spatiality, atmosphere, temporality, memory, and identity.

The conceptual model proposed in this study brings together four interrelated components: material and formal characteristics, sensory and embodied interaction, experiential meaning-making, and potential experiential outcomes. Rather than presenting these components as stages in a fixed linear process, the model conceptualizes their relationships as potentially reciprocal and context-dependent. Accordingly, the proposed relationships should be understood as theoretical propositions rather than empirically established causal connections.

The principal contribution of this study lies in proposing a shared conceptual framework through which landscape architecture and fashion design can be examined comparatively from a phenomenological perspective. This framework suggests that interdisciplinary relationships between design fields may be explored not only through formal and aesthetic similarities but also through the ways in which designed environments and objects mediate embodied experience and meaning-making.

As a theoretical proposal, the model requires further examination in different design and experiential contexts. Future empirical studies could investigate its applicability through phenomenological interviews, observations of embodied interaction, and comparative user experience research. Such investigations may contribute to refining the proposed components

and clarifying how shared phenomenological dimensions are manifested across different design scales and contexts.

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CHAPTER 6

A MULTIDIMENSIONAL INTERPRETATION OF URBAN IDENTITY: A PEDAGOGICAL MODEL FOR THE INTEGRATION OF RESEARCH AND DESIGN IN LANDSCAPE ARCHITECTURE EDUCATION

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1. Introduction

Landscape architecture education has an interdisciplinary structure that brings together technical and aesthetic knowledge regarding the design of the physical environment with an understanding of social, cultural and ecological processes within the same educational setting (Bayramoğlu and Seyhan, 2022; Eren and Düzenli, 2021; Kurdoğlu et al., 2022). Consequently, landscape design is not merely a formal production process; it is a research-based process that requires the interpretation of the existing environment, an understanding of users' needs, the analysis of natural and cultural processes, and the translation of the knowledge gained into spatial decisions (Alpak et.al, 2023b; Bayramoğlu and Seyhan, 2021). In this context, the concept of urban identity holds significant potential for landscape architecture education (Alpak and Düzenli, 2018). This is because the concept of identity is not merely a simple sum of the physical, ecological, historical, cultural and social characteristics that distinguish a city from other places; rather, it is a multi-layered state of being that emerges, is reproduced and transforms over time as a result of the mutual interaction between the cognitive, emotional, behavioural and meaningful relationships that people establish with a specific place and the physical and socio-ecological characteristics of that place (Alpak et al., 2023a; Düzenli et al., 2019; Yavuz and Ataoğlu, 2019; Yavuz et al., 2020; Ramos et al., 2016). In this context, urban identity should be treated as an important conceptual tool in landscape architecture education. When the concept of urban identity in landscape architecture education is treated merely as the sum of historical structures, monuments, traditional materials, native plants or visual imagery specific to the city, the analysis carried out by the student is largely limited to producing an 'inventory of identity elements. Addressing the concept of urban identity in this way—merely at the level of 'identifying elements of identity'—makes it difficult for students to understand how identity is produced, how it transforms, and how it can be reproduced through design. Accordingly, the aim of this study is to develop a City and Identity Learning Model that addresses this issue by treating urban identity as a multidimensional and relational structure, and by transforming this conceptual approach into a research-design process. Thus, the fundamental pedagogical value of the 'City and Identity' course lies in teaching students that urban identity is not a fixed and objective set of characteristics, but rather a dynamic process produced through the mutual interaction of the physical environment, ecological processes, historical continuity, cultural practices, social relationships, user experiences and the meanings attributed to space. With this multidimensional understanding of identity, the analysis of the student context can be transformed from a data-collection process independent of design into a

research-design process that reveals the mechanisms of identity formation, transformation and erosion.

2. The Aim of the Study

The aim of this study is to examine the ‘City and Identity’ module taught as part of the undergraduate landscape architecture programme through the lens of a research-design pedagogy that facilitates a multidimensional interpretation of urban identity and the translation of these interpretations into design decisions. In line with this aim, the study’s main research questions are as follows:

1. Research Question 1

How should urban identity be conceptualised from the perspective of landscape architecture education?

2. Research Question 2

Which analytical dimensions and indicators can be used to enable students to analyse the multidimensional structure of urban identity?

3. Research Question 3

How can the pedagogical process facilitating the transition from urban identity analysis to design decisions be structured?

The pedagogical value of the ‘City and Identity’ course lies in teaching students that urban identity is not a fixed and objective set of characteristics; rather, it is a dynamic and multi-layered process produced through the mutual interaction of the physical environment, ecological processes, historical continuity, cultural practices, social relationships, user experiences and the meanings attributed to place. Consequently, in landscape architecture education, the fundamental question has shifted from “What are the elements of this city’s identity?” to “How has the identity of this place been formed, by which physical, ecological, historical, social and experiential relationships is it produced, how does it transform over time, and how can these relationships be reconfigured through design?”

3. How should urban identity be conceptualised in the context of landscape architecture education?

Urban identity is a multi-layered and dynamic character of a place, arising from the interplay between a city’s physical and spatial structure, its natural and ecological systems, its functional and behavioural patterns, its socio-cultural relationships, its historical and memory-based layers, and its perceptual and symbolic meanings; it is constantly reproduced through individual and collective experiences (Alpak et al., 2018). This definition is based on three fundamental assumptions:

1. Identity is multidimensional: No single physical or cultural characteristic can explain urban identity. It is a physical, social, cultural, ecological and perceptual interplay (Alpak et al., 2018).
2. Identity is relational: Identity is formed within the context of the relationship between people, place and time (Özkan and Yılmaz, 2019).
3. Identity is dynamic: Urban identity is not a static legacy inherited from the past that must be preserved as it is; it is reproduced through everyday life, social change, environmental transformation and design interventions.

In their study, Mansour and colleagues (2023) examine the concept of urban identity through the lens of the dynamic interplay between individuals and their environment and highlight that reducing identity solely to the preservation of the past may overlook its contemporary and future-oriented dimensions. Consequently, research into identity should be approached not through the question ‘What does this city look like?’, but rather through the question ‘How is this city experienced as a unique place as a result of the interplay of its physical, ecological, social, cultural, historical and perceptual characteristics?’. Consequently, in landscape architecture education, urban identity must be conceptualised not merely as a ‘subject to be analysed’, but as a ‘system to be unravelled through research and reinterpreted through design’.

4. What analytical dimensions and indicators can be used to enable students to analyse the multidimensional structure of urban identity?

One of the fundamental problems encountered in the study of urban identity is that identity is often objectified. Historical buildings, squares, monuments, the sea, traditional architecture, native flora, streets, traditional crafts and local cuisine can be listed as ‘elements of identity’. However, the mere existence of these elements does not explain urban identity. Studies that adopt the concept of the palimpsest as a design approach in landscape architecture provide a theoretical framework for discussing the evaluation of a space’s traces and layers from different periods within the design process (Yılmaz and Kurak, 2025). Studies examining spaces of memory from a landscape architecture perspective can also contribute to the examination of spatial meaning through relationships established with the past (Alpak and Kurak, 2025). This approach supports the transformation of urban identity analysis into a relational research process that goes beyond merely identifying existing elements of identity to explain the formation, continuity and transformation of identity. For example, the fact that a town has a coastline does not automatically mean that its identity is ‘the sea’. The sea can become an identity-forming element when it is associated with port activities, fishing, transport, trade, everyday life, recreation, the landscape, childhood memories, the town’s economic history and its social memory. Consequently, what is critical here is not the element itself, but the

relationships it forms with other elements. This approach is consistent with that of Ramos et al. (2016), who explain landscape identity through the reciprocal interaction between people and the landscape. Shao et al. (2017) also sought to systematically bring together the common factors across different definitions of identity in order to reduce the conceptual complexity surrounding the concept of local identity. This approach is significant in that it demonstrates that landscape identity cannot be reduced to a single physical or social variable. The literature states that ‘identity is multidimensional’; however, how a landscape architecture student should analyse this multidimensionality and translate it into a design decision is less well defined. In landscape architecture studio education, analysis and design are often structured as two successive stages. However, this linear structure may not adequately explain how the information generated in the analysis is translated into design decisions. Current research in landscape architecture highlights the importance of conducting research and design in tandem. The study by Khan, McGeown and Bell (2024) demonstrates that the combined use of qualitative, quantitative and visual methods in landscape design contributes to an understanding of complex environment-behaviour relationships, and that conducting research and design in tandem can provide a stronger methodological framework. As a result of the literature review conducted in this study, six main dimensions are proposed for the analysis of urban identity within an educational setting (Figure 1)

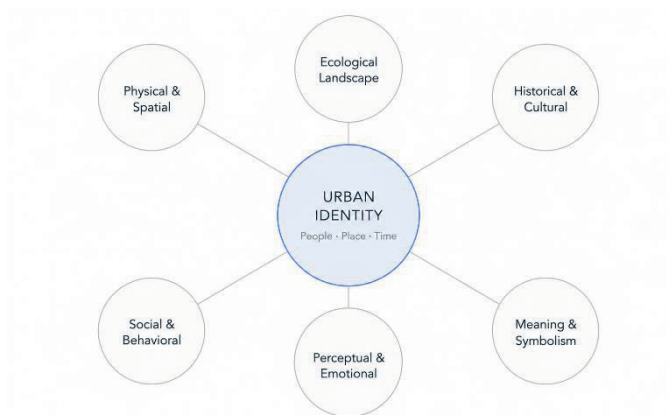


Figure 1. A multidimensional conceptual framework for urban identity

These six dimensions do not represent six distinct types of identity. According to the argument put forward in the study, they are different analytical facets of the same identity. This argument is one of the model’s most important methodological assumptions. This is because multidimensional analysis is used not to isolate the dimensions from one another, but to reveal the relationships between them. The study by Goličnik and Nikšič (2012) also demonstrates

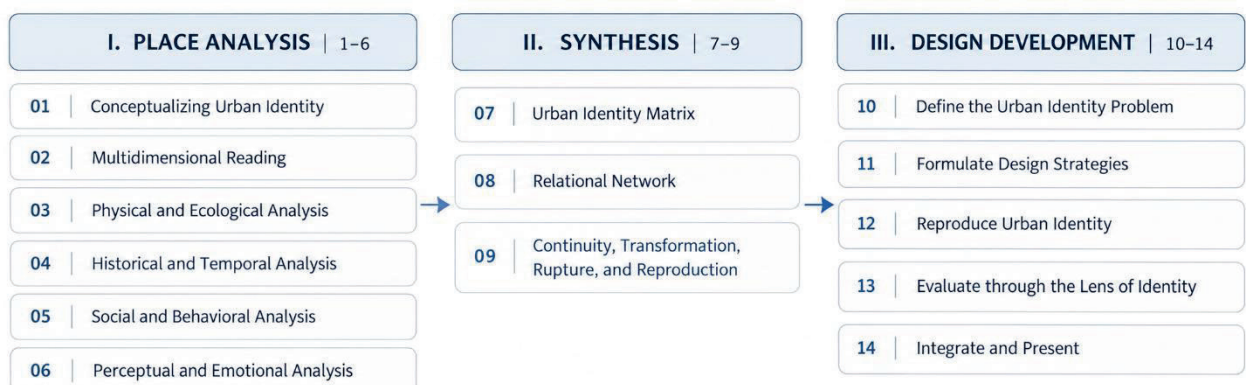
that considering physical form, usage behaviours and perceptual dimensions together is important for understanding place identity. The researchers discuss this directly as a ‘multi-layered approach’. This study outlines the process whereby ‘urban identity should be defined as a multidimensional concept in landscape architecture education; however, these dimensions should not merely be analysed in isolation, but the relationships between them must be unravelled and transformed into design strategies. Table 1 illustrates the indicators that can be used to enable students to analyse the multidimensional structure of urban identity.

Table 1. Indicators that contribute to the analysis of urban identity

Dimension	Guiding Question	Analytical Indicators	Potential Design Outcomes
1. Physical–Spatial	What distinguishes the place spatially?	Texture, topography, buildings, streets, open spaces, scale, boundaries	Spatial organization
2. Ecological Landscape	How do natural systems shape the character of the place?	Water, topography, vegetation, habitats, climate, ecological processes	Green–blue infrastructure
3. Historical–Cultural	Which traces and practices from the past persist?	Historical layers, production, traditions, heritage	Conservation and reinterpretation
4. Social–Behavioral	How do people use and produce space?	Use, movement, gathering, production, rituals	Public life
5. Perceptual–Emotional	How is the place experienced?	Visual perception, emotion, belonging, familiarity, experience	Experiential design
6. Meaning–Symbolism	What does this place mean to people?	Memory, symbols, representation, narratives, imagery	Meaning making

5. How can the pedagogical process that facilitates the transition from an analysis of urban identity to design decisions be structured?

The fundamental pedagogical rationale behind the ‘City and Identity’ course is to enable students to interpret the city not merely as a physical entity, but as a social, cultural, ecological



and meaningful system that has evolved over time. Accordingly, the pedagogical structure of the ‘City and Identity’ course is organised around a three-stage model (Figure 2).

Figure 2. The pedagogical process of the ‘City and Identity’ course

This model does not follow a linear sequence of Analysis → Design but operates cyclically as Reading → Relating → Interpreting → Designing → Testing → Re-reading. This approach can contribute to teaching landscape architecture not merely as a discipline that produces a final product, but as one in which research and design mutually inform one another. The proposed model differs from traditional teaching of urban identity in five keyways.

1. It teaches ‘relationships’ rather than ‘elements’

The student does not merely state, ‘This city has a sea.’ Instead, they ask, ‘How do the relationships between the sea, the harbour, trade, everyday life and the city’s memory shape the city’s identity?’

2. It teaches ‘continuity and transformation’ rather than ‘conservation’.

Identity is not viewed solely as the preservation of the past. It is possible to sustain, transform, reinterpret and reproduce identity. This approach aligns with the methodology of urban identity, which recognises the need to assess not only the preservationist, past-oriented understanding of identity but also its contemporary and future-oriented dimensions (Mansour et al., 2023)

3. “It transforms design from the final stage of analysis into a continuation of the research.

Design no longer proceeds along the lines of ‘I’ve carried out the analysis; now I’m drawing up a nice project’. Instead, it becomes the question: ‘Through which spatial interventions can I re-establish the relationships I discovered during the analysis?’ (Kurdoğlu et al., 2022).

4. It removes the user from the role of an actor outside of identity.

People are not merely the ‘users’ of design. People are the actors who produce identity. Studies in place identity research that highlight the importance of the meanings and connections people establish with a place also support this approach. Rajala et al. (2020) demonstrate that meanings of place are significant predictors of place attachment and that these meanings operate in an interrelated manner.

5. It develops the student’s capacity for critical design.

The student cannot simply state that ‘this design is specific to the city’. They must explain: ‘To which dimension of identity, which relationship and which transformation problem does this design respond?’ This ensures that the design decision is properly justified. This process gives rise to a feedback-based learning model (Figure 3)

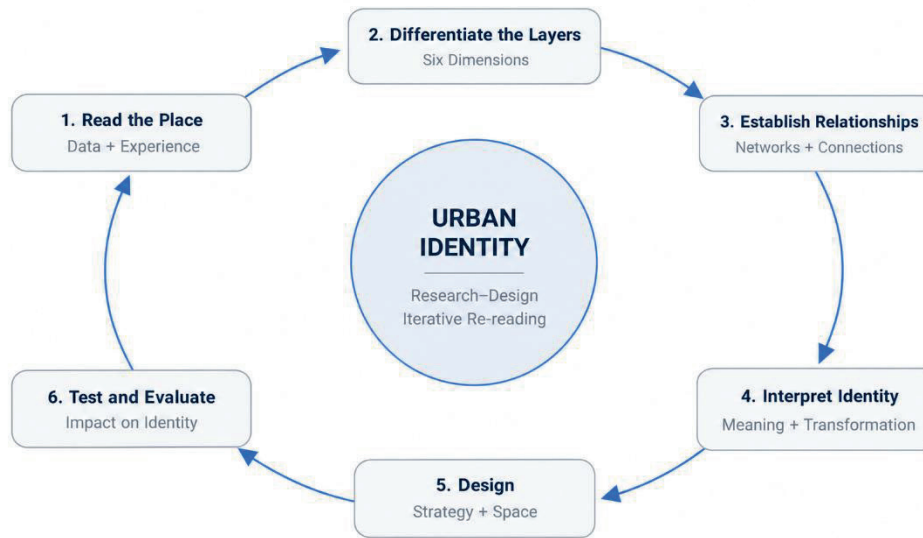


Figure 3. The City and Identity Learning Model

6. Evaluation of the Proposed City and Identity Learning Model Through Student Work

In this study, a student's work has been evaluated as an exploratory case study of the proposed model. Methodologically, the following boundaries are specifically outlined here: Read the Site → Unravel the Layers → Establish Relationships → Interpret Identity → Analyse Transformation → Define the Problem → Develop a Design Strategy → Reproduce Identity → Test the Design Through Identity → Re-read A retrospective analysis was carried out based on the student's work to assess the pedagogical value of this model:

1. Case Study 1 – Uzun Street: Making Trabzon's Lost Urban Memory Visible Again

6.1. First Case Study: Uzun Street

The study area featured in the first case study (Uzun Street) is considered a significant public and commercial axis within the historical development of Trabzon. The student notes that, throughout history, the street has been a centre for trade, social interaction and everyday life; however, over time, a significant portion of its identity elements derived from the past have lost their visibility (Figure 4). A particularly noteworthy aspect of the study is that, from the very outset, the student approach's identity not merely as a physical characteristic, but in terms of its physical, social and semantic dimensions.



Figure 4. Historical changes in Uzun Street (Student Study)

However, when re-examined through the proposed six-dimensional model, it becomes apparent that the study encompasses a broader network of identities than this.

Table 2. Analysis of the Uzun Street study using the six-dimensional identity matrix

Identity Dimension	Elements Identified by Students	Significance in Terms of Identity	Lost or Weakened Values	Design Implications
Physical–Spatial	Street texture, building façades, paving, urban furniture, and spatial configuration	The street's physical character is shaped by its façade continuity, historical legibility, and spatial quality.	Façade integrity, Façade legibility, historical traces, improvements, and spatial quality	Façade of rehabilitation, paving urban furniture
Ecological Landscape	Lack of green spaces, insufficient vegetation, and limited green focal points	The street has the potential to integrate ecological elements and enhance its visual character through vegetation.	Green continuity and microclimatic comfort	Green focal points, tree alignments, and rain gardens
Historical–Cultural	Commercial history, bazaar culture, hans (traditional commercial inns), historical structures, and urban traces	Historical continuity contributes to the street's identity and reinforces its connection to the city's past.	Visibility and legibility of historical traces	Historical and interpretation trails, of historical markers, and enhanced façade visibility
Social–Behavioral	Commerce, pedestrian movement, social interaction, and every day public life	The street functions as a social and commercial spine that supports everyday life.	Opportunities for socialization, gathering, urban activities, collective production	Public squares, activity areas, and local producers' markets
Perceptual–Emotional	Remembrance, experience, attachment, lingering	lived The street is not merely a place space to pass through; it is a place to be experienced and inhabited.	Place attachment and intensity	Memory routes, resting points, and areas for relaxation
Meaning–Symbolism	Urban memory, Trabzon's identity, horon (traditional folk dance), kemençe (traditional bowed string instrument), and local culture	The street embodies meanings specific to Trabzon and serves as a carrier of local cultural identity.	Visibility of local identity markers	Memory systems, symbolic elements, and cultural interpretation points

6.1.1. The 'Read the Site' Stage on Uzun Street

The student has defined Trabzon's urban identity within a broad framework. The study identifies the following layers:

- The relationship with the Black Sea, The port and trade, History, Market culture, Social life, Music and art, Horon culture, The natural environment. Uzun Sokak is then positioned as a key bearer of this urban identity. Consequently, the analysis carried out by the student in the initial stage actually takes place on the scale of: City → urban identity → Uzun Sokak. This corresponds significantly to the 'Read the Place' stage in the proposed model (Figure 5).



Figure 5. Analysis of the current situation

6.1.2. 'Identifying the Layers' Stage

Upon examination of the student's work, the following layers can be observed;

Table 3. Identity layers and indicators used in the study

Physical Layer	Historical Layer	Social Layer	Cultural Layer	Ecological Layer	Semantic Layer
• Building façades • Paving • Street width • Urban furniture • Spatial character	• Port city heritage • Commercial axis • Bazaar culture • Traditional inns (hans) • Historic buildings	• Commerce • Pedestrian movement • Everyday life • Social interaction • Activities	• Horon (traditional folk dance) • Kemeçe (traditional bowed string instrument) • Arts • Local culture	• Green spaces • Vegetation patterns • Rain gardens • Microclimate	• Urban memory • Trabzon's identity • Historical representation • Cultural representation

Consequently, the student's work demonstrates that the second stage of the model has been met to a high standard.

6.1.3. The 'Establish Relationships' Stage

The elements in the student's work are interpreted not only in isolation but within specific relationships.

Relationship 1: Harbour → trade → bazaar → Uzun Street. This relationship explains the economic and historical identity of Uzun Street.

Relationship 2: Trade → pedestrian movement → social interaction → public life. This relationship explains the street's social identity.

Relationship 3: History → spatial trace → urban memory → remembrance. This relationship explains the street's semantic identity.

Relationship 4: Local culture → horon/kemençe → symbolic representation → Trabzon identity. This relationship explains the street's cultural identity.

Relationship 5: Green space → comfort → experience → spending time on the street. This relationship links the ecological-landscape dimension to social experience.

Thus, the fundamental identity network in the student's work can be modelled as follows: History + Trade + Culture + Social life + Space + Memory → the urban identity of Uzun Street

6.1.4. The 'Interpret Identity' Stage

One of the student's most significant interpretations is that Uzun Sokak is not merely a commercial thoroughfare. As a result of the study, Uzun Sokak is interpreted as: an urban backbone + a space for social life + a bearer of cultural memory + a space of public identity. From a modelling perspective, this is a particularly strong interpretation of identity. This is because a chain has been established: physical element → function → social relationship → memory → meaning.

6.1.5. The 'Analyse the Transformation' Stage

The 'Uzun Sokak' study illustrates this stage quite clearly. The following transformation can be observed in the student's historical development scheme:

Table 4. Analysis of transformation

Period	Dominant relationship	Identity status
Port city	Port–trade	Formation of identity
Trade axis	Market–shopkeepers–pedestrians	Strengthening of identity
City centre	Trade–social life	Vitality of identity
Busy commercial corridor	Large shops–brands–advertising	Transformation
The present day	Intensive use, but fading historical traces	Declining visibility of identity

This presents a very significant pedagogical opportunity. The situation the student refers to as 'loss of identity' manifests itself in greater detail in our model as follows:

Continuity → Transformation → Loss of visibility → Social weakening → Semantic erosion.

6.1.6. The ‘Define the Problem’ Stage

The student defined the problem not as a single issue, but in terms of three main forms of identity loss:

Table 5. Three-dimensional analysis of identity loss

Loss of physical identity	Loss of social identity	Loss of semantic identity
- advertising clutter	- Becoming a transit space	- the inability to interpret history
- cluttered façades	- Insufficient social spaces	- the loss of historical traces
- excessive paving	- Lack of activity areas	- the erosion of the city’s collective memory
- lack of green spaces	- Lack of social interaction	- the lack of sufficient visibility of elements of local identity
Inadequate street furniture		- the inability to interpret history

It is also noted in the student’s own evaluation of the results that the study analyses the loss of physical, social and meaningful identity (Figure 6).



Figure 6. Analysis of identity loss in a long street (Student project)

6.1.7. “Develop a Design Strategy” Stage

At this stage, the student links the findings of the analysis to design decisions.

Table 5. Linking analysis and design

Problem	Identity dimension	Strategy	Design solution
Inability to interpret historical traces	Historical	Making memory visible	Timeline
Erosion of the city's collective memory	Semantic	Embedding memory in the built environment	Memory stops
Lack of social interaction	Social	Strengthening public life	Activity areas
Transformation into a transit corridor	Social/perceptual	Staying and experiencing	Seating/rest areas
Lack of green spaces	Ecological	Creating green continuity	Green focal points
Visual clutter	Physical	Ensuring spatial integrity	Façade restoration
Erosion of local identity	Semantic	Making Trabzon's identity visible	Motifs, materials, street furniture

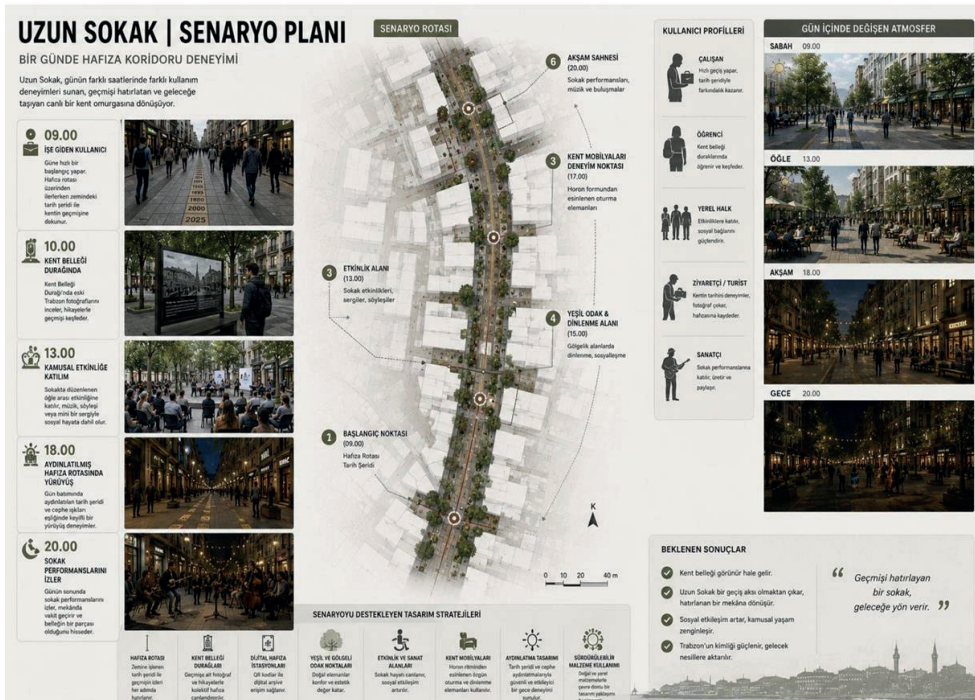
Here, the model's most important feature can be seen: the design decision is derived directly from the identity problem (Figure 7).



Figure 7. Design strategy

6.1.8. The ‘Re-creating Identity’ Stage

The main design concept behind the Uzun Sokak project is: 'From a street one merely passes through to a street one remembers.' This phrase is, in fact, a very powerful example of the 're-creating identity' stage of the proposed model. The student does not merely propose preserving the past. They link the past to contemporary public life through: - memory trails, a timeline, urban memory stops, digital memory stations, cultural events, a local producers' market and green spaces. Consequently, a process of preservation → visualisation → experience → reinterpretation is formed (Figure 8).



10 FİZİKSEL KİMLİĞİN GERİ KAZANIMI

Uzun Sokak'ın mekânsal karakterinin yeniden okunabilir hale getirilmesi

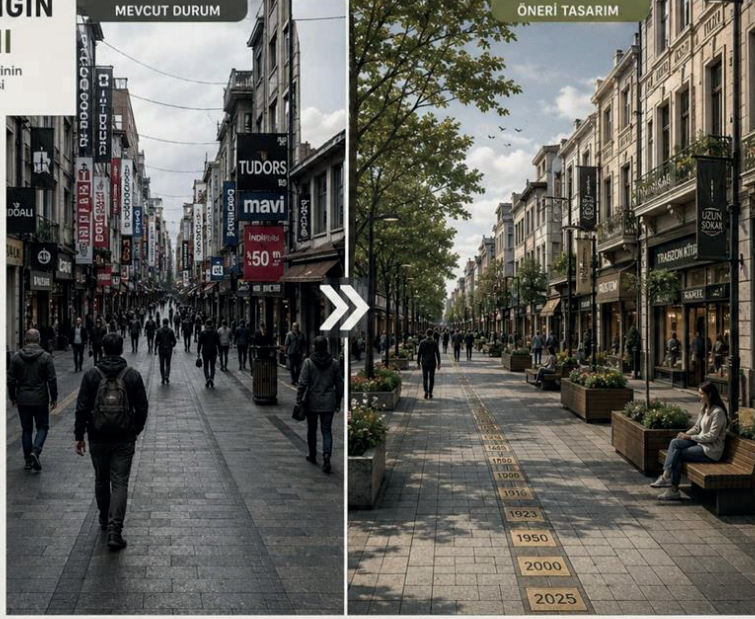
Uzun Sokak'ın günümüzde karşı karşıya olduğu temel sorunlardan biri, fiziksel kimliğini oluşturan mekânsal öğelerin zaman içerisinde görünürliğini kaybetmesidir.

Reklam yoğunluğu, düzensiz cepheler, yetersiz bitkilendirme ve kimliksiz kent mobilyaları sokaktaki mekânsal bütünlüğü zayıflatmaktadır.

Önerilen tasarım yaklaşımı kapsamında sokak boyunca cephe rehabilitasyonu, bütüncül kent mobilyaları, artırılmış yeşil doku ve hafıza rotası uygulamaları ile daha okunabilir, konforlu ve Trabzon'a özgü bir kamusal mekân oluşturulması hedeflenmektedir.

Bu müdahaleler sayesinde Uzun Sokak yalnızca bir yaya koridoru olmaktan çıkarak kent kimliğini yansıtan güçlü bir kentsel omurgaya dönüşmektedir.

“ Kent kimliği yalnızca hatırlanan hikâyelerde değil, bu hikâyeleri taşıyan mekânsal izlerde yaşar. ”



MEVCUT DURUM



TASARIM MÜDAHALESİ



SONUÇ



FİZİKSEL KİMLİĞİN GERİ KAZANIMI MEKÂNSAL MÜDAHALE STRATEJİLERİ

Uzun Sokak'ın fiziksel kimliğinin yeniden güçlendirilmesi amacıyla sokak boyunca bütüncül bir tasarım dil oluşturulmuştur. Önerilen müdahaleler yalnızca estetik bir iyileştirme değil, aynı zamanda sokakın tarihsel ve kültürel karakterini görünür kılmayı amaçlamaktadır.

Bu kapsamda cephe düzenlemeleri ile görsel karmaşanın azaltılması, Trabzon kimliğini yansıtan kent mobilyalarının kullanılması, bitkisel dokunun güçlendirilmesi ve kullanıcı deneyimini artıran dinlenme alanlarının oluşturulması hedeflenmiştir.

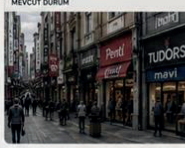
Tasarım kararları sayesinde sokak boyunca daha okunabilir, daha konforlu ve daha güçlü bir mekânsal karakter oluşturulmaktadır.

“ Mekânsal kimlik, yalnızca görülen yapıardan değil; kullanılan malzemelerden, hissedilen atmosferden ve deneyimlenen kamusal yaşamdan oluşur. ”



01 CEPHE REHABİLİTASYONU

- Tabela standartlarının oluşturulması
- Cephe renk bütünlüğü
- Tarihi yapıların görünürliğünün artırılması
- Teknik ekipmanların gizlenmesi



02 YEŞİL ALTYAPI GÜÇLENDİRMESİ

- Ağaç dikili
- Büyük sakı sistemleri
- Yağmur bahçeleri
- Mikro iklim oluşturulması
- Ağaç ve doğal taş kullanımı
- Kimlikli aydınlatma donatıları



04 HAFIZA ROTASI

- Zemine işlenen tarih peridi
- Önemli tarih noktaları
- Kent belleği durakları
- Yönlendirme sistemi



MALZEME PALETİ



DETAY GÖRSELLERİ



KESİT DETAYI



SOSYAL KİMLİĞİN GERİ KAZANIMI

UZUN SOKAK'TA BİRLİKTE YAŞAYAN BİR KAMUSAL HAYAT

Uzun Sokak'ın sosyal kimliğini yeniden güçlendirmek amacıyla herkes için erişilebilir, katılımcı ve kapsayıcı bir kamusal yaşam senaryosu oluşturulmuştur.

Sokak, yalnızca bir geçiş mekânı olmaktan ötürülmez; buluşma, etkileşim, üretim ve paylaşımın gerçekleştiği bir sosyal omurgaya dönüştürülmektedir.

Farklı yaş gruplarını, yerel esnaf, sanatçıları ve ziyaretçileri destekleyen esnek kullanım alanları ve etkinlikler aracılığıyla Uzun Sokak, Trabzon'un yaşayan bir sosyal belleği haline gelir.

“ Bir sokak, insanları bir araya getiriyorsa kimliğini yeniden kazanmış demektir. ”

SOSYAL HEDEFLER

KAPSAYICILIK
Her yaş ve her kesim için erişilebilir kamusal alanlar

ETKİLEŞİM
Sosyal etkileşimi ve toplumsal bağları güçlendirmek

YEREL DESTEK
Yerel esnaf, üretici ve sanatçıları desteklemek

AİDİYET
Sokakta geçirilen zamanı anlamlı kılarak aidiyet hissettirmek

SÜRDÜRÜLEBİLİRLİK
Sosyal sürdürülebilirliği kültürel ve çevresel değerlerle birlikte ele almak

SOSYAL MEKÂN STRATEJİLERİ

BULUŞMA NOKTALARI



Dinlenme, sohbet ve karşılaşma alanları ile sosyal etkileşimi artırır.

ETKİNLİK ALANLARI



Sokak performansları, konserler ve kamusal etkinlikler için esnek alanlar oluşturulur.

ÇOCUK DOSTU ALANLAR



Güvenli, eğlenceli ve öğretici alanlar ile çocukların kamusal yaşamı katılmaya teşvik edilir.

YEREL ÜRETİCİ PAZARI



Yerel üreticiler ve esnaf için satış alanları oluşturularak ekonomik ve sosyal sürdürülebilirlik sağlanır.

SANAT VE KÜLTÜR DURAKLARI



Kent belleğini ve sanatı görünür kılan sergi, bellek panoları ve sanat durakları yerleştirilir.

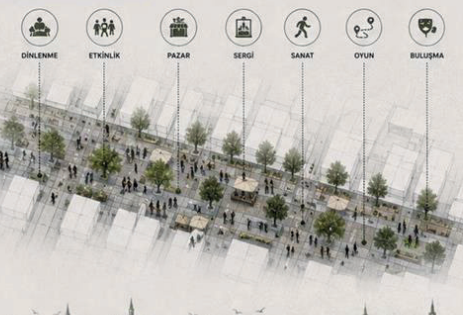
GÜNLÜK YAŞAM SENARYOSU



KULLANICI PROFİLLERİ



ESNEK KULLANIM ŞEMASI



ETKİNLİK TAKVİMİ



SOSYAL KİMLİĞİN GERİ KAZANIMI

SENARYO | GÜNLÜK YAŞAM AKIŞI

Uzun Sokak'ta her anı yaşayan, paylaştığı ve üreten bir kamusal hayat senaryosu

Sosyal kimliğin yeniden güçlenmesi için Uzun Sokak'ta günün farklı saatlerinde farklı yaş gruplarını kapsayan bir kamusal yaşam kurgulanmıştır.

Bu senaryo; buluşma, etkileşim, üretim, öğrenme, eğlence ve paylaşım odaklı olarak tasarlanmıştır.

Amaç, sokak yalnızca bir geçiş alanı olmaktan çıkıp, herkes için anlamlı deneyimler sunan bir sosyal omurgaya dönüştürülmektir.

“ Sosyal hayatın izleri, bir sokakın ruhudaki en güçlü kimliktir. ”

GÜNLÜK YAŞAM SENARYOSU



KULLANICI KATILIMI



SOSYAL MEKÂN STRATEJİSİ | UZUN SOKAK



KULLANICI PROFİLLERİ



SOSYAL ETKİYİ ARTIRAN TASARIM UNSURLARI



BEKLENEN SOSYAL ETKİLER



Birlikte yaşayan, birlikte üreten, birlikte hatırlayan bir sokak.

ANLAMASAL KİMLİĞİN GERİ KAZANIMI

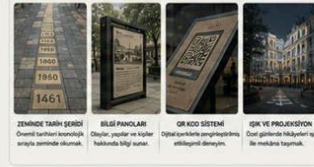
Uzun Sokak'ın hikâyesini görünür kılan bir hafıza sistemi

Uzun Sokak'ın anlamsal kimliğini güçlendirmek amacıyla sokak boyunca bir hafıza sistemi oluşturulmuştur. Tarihî olaylar, yapılar, kişiler ve kültürel değerler günümüz kullanıcılarına okunabilir ve deneyimlenebilir biçimde aktarılmaktadır.

Bu sistem; tarih şeridi, bilgi panoları, yönlendirme elemanları ve dijital desteklerle kurgulanarak sokagın geçmişi ile bugünü arasında güçlü bir bağ kurmaktadır.

“ Bir kentin ruhu, yalnızca geçmişte değil; o geçmişi hatırlatan izlerde yaşar. ”

HAFIZA ANLATIM YÖNTEMLERİ



TARİH ŞERİDİ ÖRNEKLERİ



HAFIZA ROTALARI VE ANLAMSAZ ODAKLAR



ANLAMSAZ HEDEFLER



ANLAMSAZ KİMLİK BİLEŞENLERİ



ANLAMSAZ TEMALAR



BİLGİ PANOSU TASARIMI



YÖNLENDİRME ELEMANLARI



SEMBOL VE MOTİF ÖRNEKLERİ



“ Geçmişini hatırlayan bir sokak, geleceğini daha güçlü kurar. ”

ANLAMASAL KİMLİĞİN GERİ KAZANIMI

HAFIZA SİSTEMİ

Uzun Sokak'ın hikâyesini geleceğe taşıyan katmanlı bir hafıza deneyimi

Uzun Sokak'ta geçmişin izlerini görünür kılmak, kent belleğini mekânla işlemek ve bu belleği gelecek nesillere aktarmak amacıyla bütüncül bir hafıza sistemi tasarlanmıştır.

Tarih şeridi, bilgi panoları, yönlendirme elemanları ve dijital bileşenlerle sokak, yaşayan ve anlatılan bir hafıza rotasına dönüştürülmüştür.

“ Hafıza, mekânla işlendiğinde kimlik zamanla direnir. ”

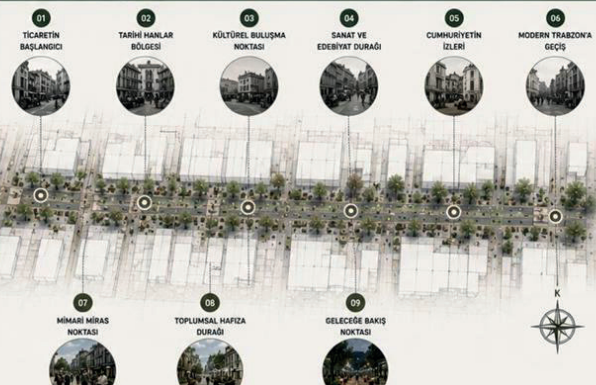
HAFIZA SİSTEMİ PRENSİPLERİ



HAFIZA SİSTEMİ BİLEŞENLERİ



HAFIZA ROTASI PLAN ŞEMASI



HAFIZA ELEMANLARI TASARIMI



MALZEME PALETİ



DİJİTAL ENTEGRASYON SİSTEMİ



ZEMİNDE TARİH ŞERİDİ ÖRNEK DETAYI



GECE GÖRÜNÜMÜ | HAFIZA ROTASI DENEYİMİ



Figure 8. Key design decisions and processes

6.1.9. The ‘Test the Design Through Identity’ Stage

It is here that one of the most significant shortcomings in the student’s work, from a modelling perspective, becomes apparent. The student defines the expected outcomes of the design:

- increased social interaction,
- strengthening of the city’s collective memory,
- a greener and more sustainable street,
- the visibility of Trabzon’s identity,
- support for the local economy.

However, these are presented primarily as design objectives. There is as yet no systematic ‘post-design identity test’. For example, the following questions have not been asked:

Are users able to interpret the historical identity more easily following the design?

Are they able to recognise elements of local identity more readily?

Has the time spent on the street changed?

Is social interaction actually increasing?

Are users’ feelings of belonging and ownership being strengthened?

6.1.10. The ‘Reread’ Stage

This stage is not explicitly mentioned in the current student project. However, from the perspective of the model, it does not mark the end of the design process. Following the design, the following readings should be carried out:

Physical → Ecological → Historical → Social → Perceptual → Semantic.

This allows the following question to be answered:

“Did the design truly strengthen identity, or did it merely produce new symbols representing identity?”

7. Discussion

The study’s key finding regarding the literature is that the concept of urban identity has now been strongly established as multidimensional. Whilst Strandberg and Styvén (2024) draw attention to the conceptual complexity in the literature on place identity, Ramos et al. (2016) propose that landscape identity be assessed within the context of the reciprocal interaction between people and the environment. Shao et al. (2017), on the other hand, seek to develop a more formal conceptual framework for local identity. Mansour et al. (2023) state that the social, cultural, historical and spatial dimensions of urban identity must be considered together; however, they note that it is difficult to define this multidimensional structure in a practical manner. On this basis, the original contribution of this study is not to reiterate the proposition that ‘urban identity is multidimensional’. The main contribution lies in transforming this

multidimensionality into a research-design methodology that landscape architecture students can utilise. The proposed six-dimensional matrix is not presented as a universal classification intended to replace all identity approaches in the literature. It is a pedagogical tool developed to operationalise the analysis of urban identity within landscape architecture education.

8. Conclusion

When urban identity is addressed in landscape architecture education solely through the identification of physical or cultural elements specific to the city, it can become a conceptual framework that limits students' design thinking. This study is based on the premise that the physical, ecological, historical, cultural, social, behavioural, perceptual, emotional and semantic dimensions of urban identity are interrelated; and that these relationships are constantly reproduced along the human–place–time axis. Consequently, the fundamental pedagogical shift proposed by this study is:

A shift from 'discovering identity' → to 'investigating how identity is produced'.

Within the scope of this transformation, the Six-Dimensional Urban Identity Matrix enables students to interpret identity across different analytical dimensions; the Identity Relationship Network enables them to analyse the relationships between these dimensions; the 14-Week Research-Design Methodology enables them to translate these analyses into the design process; whilst the City and Identity Learning Model aims to transform the entire process into a cyclical research-design practice.

The Uzun Sokak example is not a case where this model has been empirically validated, but rather an exploratory case demonstrating how the model might be applied. In the Uzun Sokak example, the relationships between commerce, everyday life, public life and memory come to the fore. The Uzun Sokak study aims to make physical, social and semantic identity visible once more. This example also illustrates an important pedagogical implication of the proposed model. The aim of landscape architecture education should not be to teach students the 'correct elements of urban identity'; rather, it should be to equip them with the methodological capacity to investigate the unique identity-production mechanisms of every place. In this context, the 'City and Identity' course can be redefined as a research-design pedagogy based on an integrated approach comprising place reading, multidimensional research, relational thinking, critical interpretation, research-design and design evaluation, moving beyond the classical notion of a 'city analysis' course.

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