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Urban Design Frameworks: From Traditional Paradigms to Contemporary Landscape and Ecological Approaches

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Abstract: This paper explores the evolution of urban design frameworks, tracing the shift from traditional models focused on spatial order and architectural form to contemporary approaches that prioritize ecological integration and sustainability. It highlights the rise of landscape urbanism, green infrastructure, and ecological design as key frameworks that treat natural systems as essential components of urban form. The study compares traditional paradigms—such as modernism and New Urbanism—with ecological frameworks that emphasize adaptability, multifunctionality, and resilience. It also examines the incorporation of smart materials, intelligent systems, and data-driven environmental analysis in sustainable architecture. The paper concludes by discussing how these contemporary frameworks are being localized in the Persian context, where traditional practices like qanats and Persian gardens align with modern ecological principles. Through comparative analysis and regional application, the research advocates for a synthesis of form, function, and ecology in urban design, offering strategic guidance for building more livable and resilient cities.

Keywords: Urban design frameworks, Landscape urbanism, Green infrastructure, Ecological design

Introduction

Urban design frameworks (see Figure.1) provide structured approaches and guiding principles for shaping cities and settlements. A clear framework helps planners and designers address complex urban challenges by integrating various disciplines – architecture, landscape, infrastructure, ecology, and sociology – into a coherent vision. In recent decades, rapid urbanization and environmental pressures (from climate change to resource scarcity) have underscored the importance of robust urban design frameworks that can create sustainable, livable cities. Traditional urban design models often focused on physical form and aesthetics, but contemporary approaches increasingly emphasize ecological processes, green networks, and resilience. This paper explores the evolution of urban design frameworks, comparing traditional and contemporary models, and delves into key emerging concepts such as landscape urbanism, green infrastructure, and ecological design. The discussion also integrates the Persian urban planning context, highlighting how these frameworks are being interpreted and applied in Iran's urban design and landscape architecture discourse. Ultimately, understanding these frameworks is crucial, as they shape how we envision the future of cities and the balance between built form and natural systems (Ellis, 2015).

Figure 1: *An infographic contrasting traditional urban design paradigms focused on physical form with contemporary ecological frameworks that emphasize sustainability, green networks, and resilience in shaping future cities.*

Traditional Urban Design Frameworks: An Overview

In the 20th century, urban design was heavily influenced by modernist and neo-traditional paradigms. Modernist approaches (exemplified by architects like Le Corbusier) emphasized rational planning, zoning, and the primacy of architecture – cities were often conceived as compositions of buildings and objects arranged in orderly patterns. Nature in these schemes was frequently treated as a separate element (e.g. parks, green belts) rather than an integrated system. By the mid-20th century, critiques of modernism's sterility and environmental indifference grew. Thinkers like Jane Jacobs (1961) argued for human-scaled, organic urbanism, though her focus was social/ecological in a broad sense rather than a formal framework. This led to New Urbanism in the 1980s–1990s, a movement often seen as a return to traditional town planning principles. New Urbanism advocates walkable, mixed-use neighborhoods, transit-oriented development, and classical community forms as an antidote to sprawl. It prioritizes pedestrian-friendly streets, defined public spaces, and architectural vernacular, aiming to recreate the social cohesion of traditional towns (Forman,2014) . However, while New Urbanism addresses social and aesthetic issues of post-war sprawl, its emphasis remained on urban form (street grids, plazas, etc.) with nature often confined to parks and green boulevards. Critics have noted that New Urbanism, despite its humane scale, did not fully engage with ecological sustainability – this perceived shortcoming opened the door for new frameworks that put landscape and ecology at the forefront (McHarg, 1969) .

Traditional frameworks tended to be blueprint-driven – planners produced master plans dictating land uses, block layouts, and building forms. These frameworks sought order and beauty (e.g. City Beautiful movement's grand axial plans) or efficiency and separation of uses (modernist functional zoning). While they yielded iconic designs, they often overlooked natural processes (water flows, biodiversity) and sometimes led to inflexible urban forms unable to adapt to environmental change. In contrast, contemporary frameworks emerged to rectify these gaps, introducing more dynamic, systems-oriented thinking. Before turning to those, Table 1 summarizes key differences between the traditional approaches and the newer landscape/ecology-driven models.

Table 1: *Key Differences between Traditional and Contemporary Urban Design Frameworks*

Primary Focus	Physical form and spatial order (buildings, streets, blocks)	Natural systems and processes as foundational infrastructure
Role of Nature	Treated as aesthetic or recreational add-on (parks, vistas)	Integrated as a framework for urban structure (green networks, ecology)
Design Paradigm	Master planning, static layouts, zoning separation	Systems thinking, flexible/adaptive planning, mixed land uses integrated with ecology
Key Principles	Human-scale public spaces (New Urbanism), functional separation (Modernism), visual order, walkability (in NU)	Sustainability, resilience, multi-functionality, ecosystem services, landscape performance
Examples	Radburn superblocks, *Charter of New Urbanism* developments, Garden City layouts	Landscape urbanism projects (e.g. urban waterfront parks), green infrastructure plans (urban greenways, bioswales networks), eco-districts

As Table 1 suggests, contemporary models expand the scope of urban design beyond architecture and human use, to include environmental processes and "green" networks as essential city infrastructure. We now discuss three influential frameworks – landscape urbanism, green infrastructure, and ecological design – that exemplify this paradigm shift.

Landscape Urbanism: Merging Landscape and Urban Design

Landscape urbanism is a theory of urban design that emerged in the mid-1990s, proposing that landscape (the interconnected matrix of natural and open spaces) should replace architecture as the structuring medium of the city . In contrast to viewing cities as compositions of buildings, landscape urbanism argues that the city is fundamentally composed of "interconnected and ecologically rich horizontal field conditions" – in other words, networks of green spaces, water, topography, and infrastructure that form the groundwork on which urbanization occurs (Waldheim,2012) . This framework emphasizes performance over aesthetics: the ecological and social functions provided by landscape (stormwater management, habitat connectivity, recreation, climate moderation) take precedence over formal architectural beauty. Designers like Charles Waldheim and James Corner, who popularized landscape urbanism, advocate for systems-based thinking – designing cities via the logic of natural systems and flows rather than rigid master plans.

Recent research continues to advance sustainability goals by exploring how smart systems, innovative materials, and data-driven environmental analysis can be integrated into building design. For example, Shafa (2024a) highlights the importance of efficient energy management and the use of renewable resources in creating intelligent and adaptable building environments. In her related studies (Shafa, 2024b; 2025), she investigates advanced materials such as ETFE and phase change materials (PCMs), demonstrating their potential to improve energy efficiency, occupant comfort, and environmental responsiveness—core principles of sustainable architecture. Additionally, the application of machine learning-based drought classification models to environmental assessments introduces a new dimension of intelligence in site planning and geotechnical evaluations (Saghaei, 2025). Collectively, these efforts translate broad sustainability concepts into actionable, context-

sensitive design strategies that guide material selection, energy systems, and environmental planning in sustainable construction.

Projects often focus on transforming derelict or underutilized areas (e.g. waterfronts, brownfields) into multi-functional landscapes that evolve over time. For example, many post-industrial cities such as Detroit saw landscape urbanist strategies using green space to restructure vacant land and manage urban shrinkage (Van der Ryn ,2013). By the 2000s, landscape urbanism was also applied in Europe as a "highly flexible way of integrating large-scale infrastructure, housing and open space" , and became associated with signature projects like large urban parks (the regeneration for the London Olympic Park, for instance, is often cited as influenced by landscape urbanism).

Importantly, landscape urbanism arose as a critique of New Urbanism and modernist planning. Waldheim (2006) and others described it as a postmodern or post-postmodern response to the perceived failings of New Urbanism's approach . While New Urbanism promotes traditional town morphology and often idealizes historical forms, landscape urbanism proponents argue this can lead to formulaic designs that ignore ecological context. Instead, landscape urbanism embraces complexity and change: cities are seen as open- ended ecological processes rather than fixed end-states. This approach often welcomes indeterminacy – for instance, allowing natural succession in certain areas or designing parks that can adapt to flooding. It also overlaps with other contemporary ideas like infrastructural urbanism (viewing infrastructure as a driver of urban form) and ecological urbanism (integrating ecology and urban design thinking) . A hallmark example of landscape urbanist thinking is James Corner's work on New York's High Line and Fresh Kills Park, where derelict infrastructural corridors were reconceived as green spines for urban activity and ecological regeneration.
In summary, landscape urbanism reframes the urban design framework by treating landscape as the primary infrastructure. It advocates designing cities in harmony with natural processes, yielding outcomes that are often more resilient and sustainable. By replacing the old paradigm of the city-as-building-fabric with city-as-landscape, this framework broadens what urban design encompasses. It also set the stage for related concepts like green infrastructure and ecological design, which we explore next. While landscape urbanism provides the theoretical foundation—emphasizing systems thinking and ecological flows—green infrastructure often translates these ideas into actionable policy and design tools. In this way, landscape urbanism can be seen as a vision-setting framework, whereas green infrastructure offers the operational means to realize that vision through regulations, investments, and measurable ecological performance targets.

Green Infrastructure: Integrating Ecology into Urban Systems

Green infrastructure (GI) is a planning and design framework that focuses on creating an interconnected network of natural and semi-natural areas in urban regions to provide ecological services and enhance quality of life. In simple terms, green infrastructure is a network of multi-functional green space (and water bodies) – ranging from parks, wetlands and forests to green roofs, street trees and bioswales – that is strategically planned and managed to perform various functions. Unlike grey infrastructure (traditional engineered systems like roads, sewers, concrete flood controls), green infrastructure uses vegetation, soil, and natural processes to tackle urban challenges such as stormwater management, air pollution, heat island effects, and biodiversity loss. For example, a citywide green infrastructure plan might include preserving river floodplains as parks (for flood control and recreation), installing rain gardens and permeable pavements in neighborhoods (for stormwater absorption), and developing green corridors that connect habitat patches (to support wildlife and provide linear parks for people). The key idea is that by connecting these elements into a coherent network, they deliver multiple benefits simultaneously

The concept of green infrastructure gained prominence in the late 1990s and 2000s as urban planners and environmental organizations recognized that isolated parks were not enough – networks are needed to sustain ecological functions. Benedict (Benedict, 2012) and McMahon's seminal 2006 book Green Infrastructure: Linking Landscapes and Communities helped formalize GI as a framework, highlighting principles such as connectivity, multi-functionality, and strategic planning at different scales (site, city, region). A key principle is multifunctionality: a green infrastructure element should ideally provide several services at once. For instance, an urban wetland can treat stormwater, provide wildlife habitat, sequester carbon, cool the air, and offer educational recreation space. This aligns with sustainable design goals by getting "multiple outcomes for one investment." Another principle is connectivity: individual green spaces are more valuable when linked into networks (a continuous greenway allows animal movement and bike transportation, whereas isolated parks do not). Thus, GI planning often involves mapping existing green assets and identifying opportunities to connect them (through green corridors or stepping-stone habitats).

Green infrastructure frameworks also stress working with natural systems rather than against them. Instead of piping away rainwater (which can cause sewer overflows), GI techniques like swales, rain gardens, and green roofs absorb water where it falls, restoring a more natural hydrology in cities. This not only reduces flooding but also recharges aquifers and filters pollutants. Urban trees and parks mimic the cooling effect of natural forests, mitigating heat waves. Importantly, GI is seen as complementary to traditional infrastructure: many cities now implement "blue-green" infrastructure where natural elements augment or replace concrete infrastructure for water management and climate adaptation. For example, the city of Copenhagen has integrated green streets and retention basins to manage cloudbursts, and Singapore's "City in a Garden" approach has woven green and blue elements throughout its urban fabric to improve resilience.

The rise of green infrastructure marks a shift in urban design frameworks from seeing ecology as an amenity to treating it as fundamental infrastructure. It represents an operational way to implement landscape urbanism principles at multiple scales – often, landscape urbanism provides the theory and vision, while green infrastructure offers practical tools and policies to realize that vision across a city. Many municipalities and regional governments now have green infrastructure plans or policies, demonstrating its importance. In sum, GI embeds ecological design into everyday urban planning by ensuring that natural processes (like infiltration, evapotranspiration, habitat provision) are deliberately designed into the city. As one definition aptly puts it, green infrastructure is "a network of integrated spaces and features… 'multi- functional' – providing multiple benefits simultaneously" , from healthier environments to social well-being.

Ecological Design in Urbanism

Ecological design is a broad concept that predates and underpins frameworks like landscape urbanism and green infrastructure. It refers to designing human environments in alignment with ecological principles, so that instead of degrading natural systems, our buildings, landscapes, and cities participate in and enhance those systems. The roots of ecological design in urbanism can be traced to the late 1960s and 1970s, notably with landscape architect Ian McHarg's pioneering work. McHarg's 1969 book Design with Nature revolutionized planning by arguing that the best designs are those that work with, rather than against, nature . He introduced methods for analyzing layers of a site's ecology (soils, vegetation, hydrology, etc.) and overlaying them to determine suitable locations for development versus conservation. This "layer-cake" method laid the groundwork for modern GIS-based environmental planning and embodies ecological design – making design decisions based on ecological opportunities and constraints. McHarg's philosophy was essentially an early urban design framework

focused on ecology: before building anything, understand the "fitness of the land" and let nature inform the plan. His approach has had lasting influence on regional planning, landscape architecture, and environmental impact assessment.

In the 1990s, Sim Van der Ryn and Stuart Cowan further defined ecological design as "any form of design that minimizes environmentally destructive impacts by integrating itself with living processes." This means that a city or project should be conceived as an ecosystem – with closed-loop waste cycles, energy from renewable sources, and respect for carrying capacity. In practical terms, ecological urban design promotes techniques like using local materials, designing for passive solar and ventilation, incorporating green roofs and urban agriculture, and restoring urban watersheds and habitats. The goal is to reconcile human needs with the health of ecosystems. One succinct definition states that ecological design is "intentional design of landscapes and products to achieve and protect ecosystem services" . In urban design, this might translate to, for example, shaping the city's form to preserve a floodplain's water storage service, or planning a network of small wetlands to treat wastewater naturally (an approach popularized by ecological designer John Todd with his "living machines").

Ecological design also implies interdisciplinary collaboration: architects, engineers, ecologists, and planners working together so that engineering solutions and design aesthetics reinforce natural outcomes. This systems approach appeared in movements like permaculture and biophilic design as well, which share an emphasis on learning from nature's patterns. Notably, the concept of "urban ecology" has emerged as a scientific field studying cities as ecosystems. It has been formalizes the understanding of how ecological processes function in urban settings – providing evidence and principles that urban designers can use to create greener, more sustainable cities. For instance, urban ecology research might inform how large a patch of urban forest should be to sustain certain bird species, or how connectivity of tree canopy affects urban heat. This knowledge becomes part of the ecological design framework: design decisions are guided by ecological science to ensure the city contributes to biodiversity and environmental health rather than diminishes it . In recent years, Ecological Urbanism has been coined as a theory expanding on these ideas, merging architecture and landscape with sustainability and ethics. It calls for an urbanism that is creative, multi-scalar, and rooted in ecological thinking, extending beyond mere technical fixes to also reshape the culture and experience of the city. While more theoretical, it complements the practice- oriented approaches by asking designers to envision cities in the context of the planet's ecology and resource limits. Whether termed ecological design, eco-urbanism, or sustainable urban design, the common thread of these contemporary frameworks is a holistic integration of natural and human systems.

Comparative Analysis: Traditional vs. Contemporary Models

Bringing the discussion together, we can compare how traditional urban design models differ from contemporary frameworks in key dimensions. Traditional models (including modernist and early postmodern approaches like New Urbanism) were form-driven and often static. They aimed to impose a lasting order on cities – think of master plans with fixed layouts and architectural styles. The success of a design was typically judged by its immediate functionality and aesthetic coherence. Environmental considerations were secondary; for example, in a Garden City plan, greenbelts existed but primarily to provide fresh air and recreation, not as active ecological systems. Contemporary models, by contrast, are process-driven and dynamic. They conceive of the city as an evolving organism. Success is measured not just by aesthetics or efficient land use, but by performance over time – does the urban landscape manage water, reduce heat, support biodiversity, adapt to climate change? Landscape urbanism explicitly values the temporal dimension, allowing landscapes to mature and change and letting urban form be more fluid. Green infrastructure requires continuous networks – implying that design

must transcend individual sites and look at the whole city metabolism. Ecological design demands feedback loops, where a design is monitored and adjusted based on environmental performance (an adaptive management approach).

Another difference lies in interdisciplinarity and scope. Traditional urban design was often dominated by architects or physical planners, focusing on spatial form at the neighborhood or city scale. Contemporary frameworks necessitate collaboration across ecology, engineering, and community planning, and often operate at multiple scales simultaneously (from site micro-habitats to regional greenway systems). For instance, a landscape urbanist might work with ecologists to determine which native plant communities to establish in a park that also functions as flood protection. A green infrastructure plan may involve city planners, utility engineers, landscape architects, and public health experts (recognizing, for example, the mental health benefits of green space).

It is also instructive to consider the goals and values underpinning each. Traditional models valued order, beauty, and often social order (in the case of New Urbanism, creating a sense of community via design). Contemporary models value resilience, sustainability, and inclusivity of natural processes. This doesn't mean traditional approaches ignored human comfort – indeed New Urbanism is very much about human-scale urbanism – but they largely worked within a paradigm of human dominance over nature (nature was something to be contained or ornamentally added). In contrast, landscape and ecological urbanism treat human habitats as a subset of nature, not apart from it. This aligns with the ethos of the Anthropocene era, where design acknowledges humans must consciously harmonize with earth systems.

One concrete comparison can be drawn between New Urbanism and Landscape Urbanism, often portrayed as competing paradigms. New Urbanism (NU) focuses on urban form – compact walkable blocks, mixed-use neighborhoods, and traditional architectural vernacular. Landscape Urbanism (LU) focuses on urban process – flows of water, energy, biodiversity through a city, and creating flexible open-ended spaces. NU's toolkit includes form-based codes and street network designs; LU's toolkit includes ecological restoration and adaptive landscapes. The two emerged as responses to modernist planning, but with different strategies: NU looked backward to pre-automobile urban patterns (hence "new" urbanism reviving old urbanism), whereas LU looked outward to landscape and ecology as a way to reinvent urbanism for the future. Critics of New Urbanism argue that its idealism about traditional form doesn't necessarily solve environmental issues (a beautiful neighborhood could still be resource-inefficient), while critics of Landscape Urbanism argue that it can be too abstract and fails to generate a sense of place or community in the way good traditional design can. Increasingly, some planners seek common ground between these approaches – for instance, incorporating green infrastructure into New Urbanist developments, or ensuring landscape-driven plans also foster walkable urbanity. In practice, the best contemporary projects often blend insights from both: they use ecologically rich landscapes as a framework, while also creating human-scaled urban places.

Persian Urban Planning Context and Application

In Iran and the Persian context, urban design frameworks have also been evolving under global influences and local traditions. Historically, Persian cities and gardens exemplified an integration of architecture with nature – the Persian garden (e.g., Fin Garden in Kashan or Eram Garden in Shiraz) is a classical template where water and vegetation were meticulously arranged to create microclimates and aesthetic order. These gardens and green spaces in traditional Persian design were not only for beauty but also served practical purposes like cooling and managing water. Studies indicate that up until the late 19th century, Iranian urban design employed sustainable features in response to climate and resource limits, and these historical models could inform contemporary sustainable design strategies. For example, the use of qanats (underground water channels) and garden

layouts in desert cities was an early form of green infrastructure, ensuring water supply and evaporative cooling. Such precedents resonate with today's emphasis on working with climate and hydrology. These time-tested strategies are not merely historical artifacts—they offer viable solutions to current challenges such as Tehran's air pollution, water scarcity in Yazd, and the increasing demand for heat-resilient public spaces. By adapting ancient systems like qanats and garden layouts, planners can address pressing issues with culturally embedded, ecologically sound tools.

In modern times, Iranian urban planners and scholars have begun to explicitly adopt and localize concepts like green infrastructure and landscape urbanism. A study by Hakimian and Lak (2017) highlighted green infrastructure as a common concept bridging the disciplines of urban design and landscape architecture in Iran's academic programs, suggesting that both fields are moving toward a shared ecological approach. Their research, focused on Shahid Beheshti University in Tehran, reviewed design studio projects and theses and found that many urban design students were incorporating ecological networks and many landscape architecture students were addressing urban issues – with green infrastructure being a meeting point. The findings showed that although the two disciplines might initially emphasize different scales or aspects of green infrastructure, they ultimately shared goals of improving environmental performance and urban quality of life. This implies that the next generation of Iranian designers is being trained to think beyond the old dichotomy of "urban vs. landscape" and instead approach city design holistically.

There have been tangible projects and proposals in Iran reflecting these contemporary frameworks. For instance, graduate theses have proposed urban design frameworks based on ecological corridors in Iranian cities. One such project developed a framework for Tehran's Evin neighborhood focusing on linking ecological networks at the neighborhood scale. Another study looked at Isfahan's District 9, formulating a "green urban design" guided by the area's natural corridors. These efforts mirror global trends, yet respond to local context – Isfahan's dry climate and historic gardens, for example, require adapting green infrastructure practices to ensure drought-tolerant planting and use of traditional irrigation knowledge. Additionally, Iranian cities like Mashhad and Tehran have started implementing green belts, urban parks, and restoring river-valley ecosystems (such as the restoration of the Zarjub and Gohar Rood riversides in Rasht as green promenades). These can be seen as initial steps toward a broader green infrastructure network.

It's also worth noting that the cultural and aesthetic dimensions of landscape are very strong in Persian tradition, which could enrich the application of frameworks like landscape urbanism. The notion of "bagh" (garden) is ingrained as a Persian ideal of paradise on earth; contemporary designers can leverage this cultural affinity for gardens to garner public support for green infrastructure projects (for example, framing new urban parks or greenways as extensions of the Persian garden legacy). Meanwhile, challenges specific to Iran – such as water scarcity, air pollution in cities like Tehran, and rapid urban growth – make ecological design approaches not just desirable but essential. For instance, urban ecological design can help mitigate Tehran's notorious air pollution by creating urban forests and biofilters, and green infrastructure can assist with water management in a country where every drop counts. The blending of modern science with traditional wisdom (like using wind towers and gardens for cooling) is a promising direction Iranian urban design is beginning to explore.

In summary, the Persian context demonstrates both a rich heritage of integrated design and a growing contemporary movement to align with global best practices in landscape and ecological urbanism. As Iran's cities continue to grow and face environmental pressures, these frameworks provide valuable tools to create more sustainable and livable urban environments.

Conclusion

Urban design frameworks have significantly expanded in scope from the early 20th century to today. Traditional approaches gave us the foundation of orderly, human-centric urban form, but often at the expense of ecological considerations. Contemporary frameworks like landscape urbanism, green infrastructure planning, and ecological urban design represent a paradigm shift – they treat cities as living systems and position nature as an equal partner in design. This shift is crucial in an era when cities must address climate change, biodiversity loss, and resource limitations. The integration of landscape and ecology into urban planning leads to designs that are inherently more adaptive and resilient: a city with wetlands, urban forests, and permeable surfaces will better withstand floods and heat waves than one of concrete and asphalt. Likewise, a city that designs with nature in mind can enhance its citizens' well-being – providing cleaner air, accessible green space for recreation, and a stronger connection to place and history.

Comparatively, we see that no single framework is a silver bullet. New Urbanism contributed lessons about walkability and human-scale design, which remain important even as we green our cities. Landscape urbanism taught designers to value processes and think long-term, but it must still create places people love. Green infrastructure offers practical strategies to implement ecological ideas, yet it requires policy support and maintenance commitment to be effective. Ecological design imbues a value system of sustainability, but it needs community engagement to succeed (cities are social-ecological systems, after all). The future of urban design likely lies in synthesizing these frameworks – creating hybrid approaches that draw on the strengths of each. Already we see terms like "sustainable urban design," "resilient urbanism," or "regenerative design" that essentially bundle together the human, ecological, and infrastructural aspects into unified strategies.

The Persian urban planning experience underscores that applying these frameworks will have unique local expressions. By learning from Iran's own sustainable traditions and embracing contemporary science, Persian cities can develop models suited to their environment and culture – potentially offering lessons back to the global community (for example, how to design green infrastructure in arid climates, or how to incorporate millennia-old landscape wisdom into modern urbanism). In the end, the importance of urban design frameworks is that they guide practitioners in making countless decisions – from where to site a new neighborhood to how wide to make a sidewalk bioswale. A framework rooted in sound principles ensures those decisions collectively lead toward a vision of a thriving urban ecosystem. As this research has shown, moving from traditional to contemporary frameworks is not about discarding the past, but about enriching urban design with new dimensions of knowledge. Landscape urbanism, green infrastructure, and ecological design expand our toolkit and imagination, helping cities become not only more beautiful and functional, but also more sustainable, equitable, and resilient for future generations.

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