frontiers | Frontiers in Sustainable Cities

TYPE Editorial
PUBLISHED 06 October 2025
DOI 10.3389/frsc.2025.1686150

OPEN ACCESS

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RECEIVED 14 August 2025
ACCEPTED 23 September 2025
PUBLISHED 06 October 2025

CITATION
McCaskill J, Rahman MT and Jamal A (2025) Editorial: Sustainable urban development through smart city design and planning. *Front. Sustain. Cities* 7:1686150. doi: 10.3389/frsc.2025.1686150

Editorial: Sustainable urban development through smart city design and planning

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KEYWORDS

urbanization, land use, smart urban development, systems thinking, sustainable planning

Editorial on the Research Topic
Sustainable urban development through smart city design and planning

As cities around the world confront the accelerating pressures of urbanization, economic transformation, and climate uncertainty, they stand at a pivotal crossroads. The choices made today will shape not only the physical form of our cities but also their social, environmental, and technological futures. This Research Topic, *Sustainable urban development through smart city design and planning*, brings together interdisciplinary research that explores how cities are adapting to shifting demographics, emerging technologies, and evolving governance models.

The articles featured here examine the mechanics of urban systems while also interrogating the deeper values, contradictions, and power dynamics embedded in planning and policy. Together, they offer a multifaceted view of what it means to build cities that are not only smart, but also inclusive, resilient, and just. As Elinor Ostrom (2015, p. 23) warned in *Governing the Commons*, "Policies based on metaphors can be harmful," and the studies gathered here demonstrate how easily sustainability or smartness can become hollow labels if not grounded in real systemic understanding and local needs.

The opening article focuses on Northeast China, a region emblematic of the challenges facing post-industrial cities in decline. Drawing on two decades of population and land use data, the study introduces a dynamic land utilization efficiency index and applies spatial and systemic models to trace patterns of urban contraction, land misallocation, and ecological regeneration. The findings are sobering: more than half of the region's cities are experiencing both population loss and urban sprawl. Yet amid these disruptions, signs of reforestation and farmland restoration point to promising pathways for more sustainable land governance. This research lays a theoretical foundation for rethinking land use in economically distressed urban regions. It illustrates Donella Meadows's (2008, p. 89) insight from her work in *Thinking in Systems* that "...long-term behavior provides clues to the underlying system structure. And system structure is the key to understanding not just what is happening, but why".

Shifting from decline to design, the second article critically examines the rapidly evolving concept of the "smart city." Through a systematic literature review and SWOT analysis, the authors categorize existing frameworks into four models: human-centric, techno-centric, integrated, and environmental. Despite their differences, all share a reliance

on technology—and the risks that come with it. The paper advocates for adaptable smart city frameworks grounded in four essential pillars: governance, environmental awareness, technological integration, and citizen engagement. This flexible blueprint can be tailored to diverse urban contexts, offering a more holistic and inclusive approach to smart city planning.

Building on the theme of technological integration, the third contribution introduces the concept of "local super apps" by merging Mobility-as-a-Feature (MaaF) with the 15-minute city (15mC) model—a vision where essential services are accessible within a short walk or bike ride. These multimodal digital platforms aim to empower residents, enhance mobility equity, and improve resource efficiency. Combining conceptual synthesis with empirical insights, the authors argue that such integrated solutions can drive inclusive and sustainable urban transitions, especially when rooted in community needs and local contexts.

The final article turns a critical lens on the politics of urban planning. Analyzing nearly three decades of planning documents from Sundsvall, Sweden, the study traces the evolution of sustainability rhetoric—from its socially grounded origins to its instrumental use in neoliberal governance. It reveals how "sustainability" has increasingly been deployed as a strategic narrative to promote economic competitiveness, often at the expense of social equity. This contribution challenges us to reconsider who urban sustainability truly serves and how its values are mobilized in practice.

Taken together, these articles illuminate the complex terrain of smart urban development. They remind us that the path to sustainability is not only technological but also deeply political, spatial, and social. As we imagine the cities of tomorrow, we must ask: what kind of urban futures are we building—and for whom?

This Research Topic invites scholars, planners, and policymakers to bridge theory, critique, and innovation in pursuit of cities that are not only efficient and connected, but also equitable, inclusive, and humane.

Author contributions

JM: Writing – original draft. MR: Writing – review & editing. AJ: Writing – review & editing.

Conflict of interest

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