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CALL FOR PAPERS: special issue

MMC and the Future of Housing

Guest Editors: Rachel Macrorie & Andrew Karvonen

Deadline for abstracts: 14 November 2025 (noon GMT)

The provision of housing is often narrowly framed as a set of technological, skills and economic issues. This special issue aims to broaden the discussion by developing a critical social science perspective that investigates the validity of many claims made about modern methods of construction (MMC), and how, and the degree to which MMC are (re)configuring contemporary housing systems. It examines key issues in relation to housing supply and the retrofitting of the existing housing stock.

Aims

Dominant techno-optimistic and productivity-based narratives advocating MMC for housing are insufficient to address contemporary crises of housing supply, affordability and quality, and the ambitious policy goals for a net-zero housing sector. This special goes beyond the economic and technological aspects to critically examine the claims, processes, relations and dynamics, outcomes and potential concerns associated with MMC approaches for housing. It will draw upon diverse social science disciplines – including but not limited to, geography, sociology, urban planning, business studies, political science, law, architecture, economics, science and technology studies – to examine the opportunities and challenges for MMC to:

- address **the affordable and social housing crisis** by streamlining and accelerating new build housing construction
- **facilitate the net-zero transition** through the energy-efficiency retrofit of the existing housing stock
- **examine the impacts on housing sector actors**, government opportunities and challenges to regulate and steer it
- **consider the impacts on social equity, quality of life of residents and usability / adaptability**

Context

Housing has emerged as a grand societal challenge around the world due to rising unaffordability, a lack of adequate supply, and multiple challenges associated with decarbonising existing housing stocks. In the coming decades, stakeholders from the public and private sectors will need to adapt existing approaches to housing production to meet the economic, environmental, and social needs of the 21st century. Calls are being made by governments and industry alike, to invest in Modern Methods of Construction (MMC) to change, and potentially improve, how the construction sector currently builds and renovates houses (Farmer 2016; McKinsey & Co. 2016, 2017; Housing Festival 2024). As an alternative to traditional bricks-and-mortar housing construction, MMC allow key elements of a building to be designed, planned and constructed using prefabricated or pre-assembled products, manufactured in an offsite controlled factory environment, which are subsequently assembled or installed onsite.

Whilst not a new phenomenon (*e.g.* post-WWII mass offsite prefabrication of housing addressed severe housing shortages in Europe – Iuorio *et al*. 2019), MMC for housing are dominated by pro-innovation hype and the sector has been the target of significant capital investment in R&D and factory development in recent years. MMC uptake and experiences vary in different countries (*e.g.* Sweden and Japan have a longstanding adoption of MMC housing adoption and significant levels of investment (Steinhardt & Manley 2016; Yuill 2022)) and there is much to be learnt from approaches utilised across diverse geographies. Such approaches are particularly salient given that in the UK

multiple modular housing providers have entered administration or left the market, despite government investment in the industry (HLBEC 2024).

Proponents of MMC for housing highlight potential benefits across four key areas:

1. MMC techniques are advocated to drive a ***step-change in the productivity levels*** of the housing construction industry (DCLG 2017; Housing Festival 2024; Mandala &Nayaka 2023). It is claimed that standardisation (for example, through design codes/ a 'kit of parts'), digitisation, automation, and efficiency drives can result in faster build times alongside parallel factory and site assembly, allowing for mass production at substantially lower costs (Bassi *et al*. 2021).

2. It is claimed that factory environments and digital platforms inherent to MMC processes allow for ***greater quality control*** (*i.e.* by addressing common defects, improving thermal performance, and reducing fire / safety concerns) and easier supervision of tasks (House of Lords 2018; McKinsey & Co. 2016). MMC techniques are advocated to improve the quality of new build housing. Additionally, standardised and digitised MMC approaches are being promoted as a route to scale-up ***delivery of housing retrofit*** (Brown *et al*. 2019) and to address common retrofit concerns (*i.e.* delivering predicted energy savings and carbon reduction, and minimising damp and mould problems).

3. MMC housing construction is widely promoted as a ***sustainable, low-carbon, low-waste solution*** for new build housing given the optimised use of materials and opportunities for improved building energy performance (Kamali and Hewage 2016; Tavares *et al*. 2021; Kedir and Hall 2021; O'Hegarty et al. 2025). Acknowledging diverse housing archetypes, the standardised, modularised approaches of MMC are framed as essential to achieve housing energy-efficiency retrofit at mass-scale (Brown *et al*. 2019).

4. Whilst prone to problematic boom-bust cycles and subject to decades of deregulation and policy shifts, the housing construction sector has been critiqued for being outdated, suffering from a labour and skills deficit, and in need of cultural change (for the UK context - see Farmer 2016; DCLG 2017). The controlled factory environment of MMC and faster onsite construction times are advocated as a solution to modernise not only the processes of residential construction, but potentially change ***workforce cultures, skills and competences, safety and inclusion levels*** (Construction Leadership Council 2023; Wallace *et al.* 2025).

These key claims of MMC housing proponents need further examination and verification. Much research on MMC is technical and based largely within the domains of engineering and construction management (Payne & Serin 2023; Sanchez-Garrido *et al.* 2023; Doan *et al.* 2023) while critical social science issues have often been overlooked by policy, industry and academia. If MMC approaches are to play a role in addressing the contemporary housing crises of supply, quality, sustainability and labour and skills, what social science questions need to be addressed? Furthermore, how does MMC for housing intersect with systemic sectoral policies, relations and dynamics? There is an urgent need to develop a critical social science agenda of MMC for housing.

Suggested topics

This special issue takes forward Stuart Green's call to look beyond productivity improvements when considering MMC for housing (Green 2021, 2022). This is timely, as there is growing recognition outside of engineering and construction management domains regarding the importance of social science perspectives for MMC for housing. We invite contributions that take a critical social science perspective (in a broad disciplinary sense) to examine the political, economic, social, environmental and planning arrangements that shape the uptake, processes, and outcomes of this approach to housing. Potential research topics include but are not limited to:

i) Governance

What role does MMC play as part of a sustainable and affordable housing strategy, and what are the policy and regulatory implications? What new governance arrangements, which may not fit neatly into existing building codes, are needed to regulate, certify and assure quality of modular/offsite manufactured components? How can regulatory requirements (*e.g.* fire safety, ventilation and insulation) be adapted for MMC retrofit solutions across the heterogeneous existing housing stock? How can fragmented responsibilities across manufacturing, design, transport and assembly, and increasingly globalised supply chains, ensure quality control and accountability, particularly for mass produced/retrofitted buildings? How do procurement rules need to be adapted to accommodate factories, standardised solutions of MMC for housing, and through-life building stewardship?

ii) Business models & finance

What types of investment routes and financing arrangements are being used to stimulate MMC for housing? What role does state support play in sustaining the sector? What lessons can be learned from experiences with volatile business cycles and companies that have left the market or gone into administration? How can MMC housing be derisked to stimulate investment? Which corporate business models are being developed – e.g. through platform models and vertical and/or horizontal integration? Can MMC facilitate new affordable housing models, such as cooperative housing and shared ownership? How are charities using MMC housing solutions to address homelessness? What contractual arrangements are required for MMC housing, particularly in relation to shared risk?

iii) Sustainable energy and environmental transitions

How do MMC housing innovations, processes and approaches intersect with existing policies and strategies to support the drive to a net zero housing sector and built environment? How can we govern MMC housing to ensure sustainability claims are realised? Do building codes and sustainability certification systems adequately capture the environmental, energy and social performance of MMC for housing? Are MMC supply chains transparent and accountable in terms of carbon emissions, resource extraction, biodiversity and social impacts? What new concerns does MMC present throughout the full lifecycle of the housing project – *e.g.* embodied carbon, recyclability/durability, climate resilience, the energy performance gap, adaptability/ customisation? How can industry-wide knowledge sharing be leveraged to foster the adoption of MMC construction practices to align with net zero objectives throughout the building lifecycle? How can we look beyond energy and carbon reductions, to consider whether MMC for housing shifts risks, burdens or benefits across social groups, geographies and generations?

iv) Labour and skills

What does a just transition to offsite MMC housing production look like, particularly given the cyclical nature of construction and reliance upon agency staff? Does the more controlled factory environment of MMC for housing help to tackle exploitative and unregulated working conditions that are common in subcontracting processes? What are the implications of offsite MMC for housing in improving supply chain management and how can this be assured? What are the implications of industrialised construction and automated processes for equality, diversity and inclusion (EDI) and health and safety? What skills and competencies are required for MMC for housing, and which training courses, qualifications and standards are needed to address any existing gaps? Are employers encouraged to invest in skills training for MMC for housing and what opportunities are available for career progression? What are the economic and social implications of exporting MMC for housing production and jobs to countries where labour costs are low?

v) Resident experiences of MMC

What are residents' perceptions and experiences of living in MMC housing (post-occupancy evaluation, etc) – including MMC versus traditional construction methods for new-build housing, modular housing solutions to address the homelessness and refugee crises, and experiences of MMC retrofit programmes? What are the implications for mortgages, grants, insurance, and consumer protection for stakeholders of MMC for housing construction and retrofit programmes? What are residents' everyday experiences of living in MMC housing; in terms of; usability, operation, flexibility, repair, robustness, thermal comfort (including summer overheating), noise transmission, etc.? What opportunities exist to codesign MMC for housing and monitoring building performance with existing tenants and future occupants? To what extent does MMC provide affordable, high-quality housing for all or risk creating a two-tier system of housing provision (i.e. cheap but low-status prefabricated houses)? How adaptable are MMC houses to changing societal and tenants' needs over time?

vi) Supply chain dynamics & regional economic development

How can MMC contribute to a just transition in the housing sector? Should MMC for housing be incentivised through procurement processes? How can a secure pipeline of work and an integrated local/regional supply chain be ensured in MMC for housing? What are the risks around MMC housing manufacture being exported to low-cost countries? How can unlikely land be 'unlocked' for MMC housing through planning reform and opportunities to identify and aggregate 'new' development sites (e.g. small brownfield sites in public sector ownership)? How can MMC housing provide opportunities for equitable regional development, *i.e*. by locating factories in areas that are under-resourced? What is the role of MMC for housing to urban placemaking, building social value, ensuring quality work, and developing thriving neighbourhoods?

Briefing note for contributors

You are invited to submit an abstract for a journal paper in this special issue of Buildings & Cities. In the first instance, please send a 500-word (maximum) abstract to Richard Lorch (richard@rlorch.net) by **14 November 2025.**

The initial abstract submission must include:

1. the author's and all co-author's names, affiliations and contact details
2. the specific question(s) and topics in this Call for Papers that the abstract and intended paper addresses
3. the abstract (500 words maximum) which should define the research question(s), scope, methods, and (anticipated) findings.

Abstracts will be reviewed by the editors to ensure a varied, yet integrated selection of papers around the topic of the special issue. Authors of accepted abstracts will be invited to submit a full paper, which undergoes a double-blind peer review process.

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The author should make clear which type of article is being submitted during the submission.

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Questions?

If you have a question, please contact: Richard Lorch (richard@rlorch.net), Rachel Macrorie (rachel.macrorie@ntu.ac.uk), or Andrew Karvonen (andrew.karvonen@abm.lth.se).

Timeline

Abstracts due	**14 November 2025 noon GMT**	*NB: authors can submit sooner if they wish*
Full papers due	02 February 2026	
Referees' comments	27 March 2026	
Final papers due	18 May 2026	
Publication	July 2026	*NB: papers are published as soon as accepted*

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