BUILDINGS & CITIES

MMC and the social housing crisis: a political economy appraisal

SPECIAL COLLECTION: MMC AND THE FUTURE OF HOUSING

RESEARCH

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ABSTRACT

Despite high-profile insolvencies in volumetric modular housing in the UK, persistent supply challenges have led to renewed attention around the promise of modern methods of construction (MMC) for sectoral transformation. The UK government is committed to delivering 180,000 new homes for social rent by 2036, yet there are structural, economic and political reasons why the current housing system is considered inadequate to reliably deliver on this target. Proponents claim that MMC accelerates delivery, lowers energy costs and reduces material waste, and that MMC housing providers can build social housing fit for a changing climate at enhanced scale, pace and quality. Adopting a critical political economy (PE) lens, informed by documentary evidence, site visit observations and discussions, industry tradeshows, and two international academic workshops, this article examines why previous UK MMC housing drives failed, and investigates the prospects for MMC to help address the current social housing deficit, highlighting exemplar cases of good practice. It finds that MMC has some potential to contribute to but cannot by itself close the social housing deficit: its prospects depend less on technology than on stable public demand, land and long-term funding.

POLICY RELEVANCE

Addressing longstanding systemic shortcomings of social housing policy in an increasingly financialised housing market is a fundamental requirement to ensure greater access to decent homes for all that are fit-for-the-future. Transformation of social housing delivery, no matter the delivery model, can only be achieved with a long-term political commitment to this goal. By analysing MMC social housing construction as part of complex and dynamic institutional, political and economic systems, the paper has highlighted the importance of five interconnected thematic areas: (1) policy, regulation and governance; (2) pipeline visibility and procurement; (3) planning; (4) platform-based collaborative business models; and (5) people and skills. Good practice exemplars highlight how MMC production and delivery models for social housing need to be considered as a holistic change programme in relation to regions' broader decarbonisation targets, industrial innovation and economic development ambitions, creating opportunities for fair and secure work, and planning for thriving places.

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1. INTRODUCTION

There is rising global interest in the potential for modern methods of construction (MMC) of residential buildings to address the housing sector's most pressing challenges, including critical social rent housing shortages, the labour and skills deficit, and the timely transition to a net zero economy. Estimates place the global market for MMC at between US$90 billion and US$105 billion in 2024, and most forecasts anticipate a near doubling of the market over the next 5–10 years (*Fortune Business Insights* 2025). In the UK, where housing construction techniques have remained largely constant for over 50 years (De-Ath & Farmer 2020) and are dominated by traditional masonry construction (over 85% of the sector) (NHBC 2019), recent years have seen government and industry attempts to seize opportunities to transform sectoral productivity presented by the Fourth Industrial Revolution (McKinsey & Co. 2022). Political commitments to raise housing delivery targets to 1.5 million new homes over the course of this Parliament (2024–29), and to ensure that these properties provide 'more high-quality, well-designed and sustainable homes' (Labour Party 2024) have led to renewed calls for MMC as integral to addressing the nation's unmet housing need. This makes it a critical time to understand how MMC can contribute to scaled quality social housing delivery (Metcalfe 2024).

MMC is an approach that applies factory-based manufacturing and assembly to building properties, shifting from traditional site-based building to more efficient standardised, repeatable processes (CIH 2023). The current wave of digital technologies and automation and robotics in manufacturing offers new opportunities for offsite construction and prefabrication, and adoption of these tools and processes as part of a lean and platformised manufacturing model is lauded as 'transformative' for the housing sector (Farmer 2016; Building Better 2026). Policy, industry and academia have made multiple claims in favour of widespread uptake of these 'modern methods' as a solution to the construction sector's longstanding inefficiencies. As Green (2022: 659) cautions:

> the research community cannot afford to be dismissive of the potential of these new technologies. But neither can it afford to be beguiled by hubristic [techno-optimistic and pro-innovation] narratives.

Despite this promise, the housing research community lacks, with notable exceptions (*e.g.* Green 2022; Payne & Serin 2023; Wallace *et al.* 2025; Saad *et al.* 2025), a systematic social science-led analysis of the potential of MMC to make a valued contribution to transforming the current UK housing paradigm, including prevailing construction methods, industry structures and socio-technical norms.

Proponents contend that MMC is key to building more and better-quality new housing at a faster and cheaper rate (*e.g.* Sai Kumar & Nayaka 2025). Beyond projections of enhanced productivity and faster build times, MMC is advocated as a means to ensure building fire safety, reduce waste, minimise whole-life carbon emissions, increase health and safety for workers, increase inclusion within the workforce, and address labour shortages (*e.g.* Zhang *et al.* 2018; House of Lords 2018, Housing Festival 2024). However, to date MMC pilots have failed to substantially transform the dominant UK housing system. Between 2022 and 2023 just over 5250 social housing properties were built using MMC, with more than 6650 additional MMC builds commenced (NHF & Building Better 2024). Across all tenures, MMC accounts for an estimated 8% of new UK homes (House of Lords 2022). Whilst the social housing sector is delivering more MMC homes than commonly realised, these figures are small against the target of 180,000 social rent homes over 10 years, or 18,000 annually (MHCLG 2025a). Additionally, the industry faces negative perceptions of temporary post-war prefabricated buildings, poor energy performance in older modular units (1960s–80s), and social housing estates constructed with system-building methods that performed badly (Wallace *et al.* 2025).

Despite significant UK government support (direct loans, strategic grant programmes, policy taskforces and research and development (R&D) funds) to stimulate growth of the MMC housing sector over the past decade, and whilst many major UK housebuilders are increasingly adopting timber-frame, panelised or hybrid offsite solutions as part of standard housing delivery (Offsite Hub 2024), sectoral uptake of MMC remains relatively low. The past decade saw several high-profile

insolvencies of volumetric modular housing construction companies, leading to unpaid debts and staff redundancies (*e.g.* Ilke Homes (Battersby 2023) and L&G Modular Homes (Gayne 2024)), with many more firms opting to exit the residential market. However, the industry is showing signs of transformation. During the period 2022–23, approximately 40% of housing associations (not-for-profit social landlords which, with local authorities, provide most UK social housing) used MMC and confirmed plans to increase their proportion of MMC delivery (NHF & Building Better 2024). This article analyses potential claims made around the contribution that MMC can make to addressing the UK's housing crises of affordability, supply, sustainability and quality. Informed by a political economy (PE) approach, it analyses the critical arrangements necessary for MMC to contribute to addressing longstanding systemic challenges inherent to the UK social housing system. It argues that MMC has the potential to transform the UK housing construction system to deliver improved outcomes for residents, the environment and the economy, but major systemic tensions remain.

The paper next outlines the housing crises driving demand for social rent homes, the origins of MMC, and the PE lens and methods. It then traces why UK MMC has repeatedly struggled despite policy support (2010–26), analyses exemplars across five PE themes and assesses MMC's prospects for social housing.

2. HOUSING CRISES AND AFFORDABILITY

The UK is not unique in experiencing housing crises of supply, affordability and quality, where far too many people are living in overpriced, insecure and poor-quality housing which undermines life chances (Tunstall *et al.* 2013; BRE Group 2021). Between 2015 and 2024, house prices in Europe rose on average by 53% (Eurostat 2024), whilst the European Investment Bank (EIB) estimated that 2.25 million additional housing units were needed in 2025, more than half of the number of homes constructed (Kulkov & Rohrbeck 2026). However, the intersecting housing crises cannot be explained by a shortage of homes alone. They reflect the increasing financialisation of housing as an investment asset, rising land values, supply chain structure and governance challenges, alongside reduced public investment and a smaller social housing sector. A defining feature is that many households do not qualify for increasingly scarce social housing, and yet are not sufficiently affluent to access market housing comfortably, when so-called 'affordable housing' often remains too expensive for those truly in need.

In the UK, half a million more families need social housing than officially recorded on housing waiting lists; meaning 4.2 million people in total, including 1.3 million children, need social housing (NHF 2025). In England in 2024, almost 113,000 households were forced to live in temporary accommodation, which severs support networks, has detrimental impacts on wellbeing and compounds poverty; with 61% needing to stay in such uncertain conditions for longer than a year (Housing Festival 2024; Shelter 2023). Furthermore, tens of thousands of people are forced to sleep rough, with hundreds of thousands homeless in less visible ways (Watts-Cobbe *et al.* 2025). Temporary accommodation costs taxpayers over £1.7 billion a year, a 100% increase since 2016, and places a strain on already cash-strapped local authorities operating in continued austerity governance (Housing Festival 2024). Central to this insecurity is a shortfall of *truly* affordable and social rent housing, driven by a mix of policy failure, rising rents and a broken construction system.

The availability of social housing has decreased. The 'Right to Buy' housing policy implemented by the Margaret Thatcher Conservative-led government in 1980, helped many tenants to move into homeownership. This resulted in an overall decrease of council housing stock from 5.1 million to 1.6 million between 1980 and 2024 (MHCLG 2024a). Currently, fewer new social-rent homes are built than are lost to the private market, and where social homes are replaced, they are often lower cost, smaller dwellings, not family-sized homes (Shelter 2023).

The affordability of housing has changed. Housing associations have shifted from charging 'social rents' (50–60% of market rates) to 'affordable rents' (80% of market rates), leading to significant cost increases for tenants. Until 2013 social rents formed the majority of new affordable housing supply each year, but by 2022/23 this had fallen to just 15% (Jackson 2024).

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The supply of new social housing has also diminished. Against the construction industry downturn post-2008 global financial crisis, many local authorities and housing associations have faced financial pressures, rising costs and reduced rental income. This has discouraged long-term investment in social housing (House of Commons 2025). The above-mentioned challenges are compounded by land speculation, convoluted planning, rising rents, and a chronic labour and skills shortage (Payne & Serin 2023).

The UK needs to build 90,000 social-rent homes per year for 10 years to address this demand and avoid deepening social inequality (NHF 2025). By comparison, only 12,198 social rent homes were completed in England in 2024–25 (MHCLG 2025d). In his first speech as the new Labour Prime Minister, Andy Burnham explicitly committed to building more '*council* homes' (Prime Minister's Office 2026). This expansion has an estimated value of £51.2 billion, supporting almost 140,000 jobs, and delivering wider social and health benefits (Cebr 2024). The Prime Minister's commitment builds upon the UK government's 2025 Autumn Budget which confirmed a commitment of £39 billion to the Social and Affordable Homes Programme (SAHP), aiming for at least 60% of the homes it funds to be for social rent, representing 'the biggest planned increase in social and affordable housebuilding in a generation' (MHCLG 2025a: overview). This investment is coupled with planning reforms, new public–private partnerships, including a National Housing Bank (MHCLG 2025b), and mandatory housing targets for councils (MHCLG 2024b).

Current build rates fall far below that demanded to meet these critical, yet ambitious, targets. The previous Conservative government set a similar target of building 300,000 new homes per year (with minimal focus on social rent) and did not meet it: net additions in England peaked at 248,590 in 2019/20 (Jackson 2024; DLUHC 2023). While hailed as crucial for jobs and growth, industry bodies also express concern about meeting this target, citing challenges due to planning bottlenecks, funding gaps and construction capacity, and requiring significant policy intervention to succeed (NHF 2024). How, and to what extent, might MMC residential contribute to addressing this deficit?

3. ORIGINS AND DEFINING ELEMENTS OF MMC

The UK housing industry remains characterised by over 85% traditional building methods (primarily brick-and-mortar construction), risk aversion, and slow adoption of new technologies (House of Lords 2022). Manufacturing-led methods to build homes have existed for more than two centuries (Ågren & Wing 2014), but have long struggled to challenge dominant masonry methods and conventional supply chains (Lovell & Smith 2010). This can in part be attributed to lingering social stigma associated with post-Second World War temporary prefabricated housing delivery, which was often damp and poorly insulated (Historic England 2022; Wallace *et al.* 2025). This contrasts with Northern Europe, where industrialised construction, particularly timber-based and pre-cast concrete systems, have been widely accepted for many decades and receive strong support through government incentives, training offers and co-investment in production capability (van Veelen & Knuth 2023; Yuill 2022). Industrialised housebuilding is also embedded in Japan and the US, where postwar reconstruction demanded rapid, standardised rebuilding (Teh 2019).

Multiple terms are used to describe industrialised housing construction methods, including 'modular', 'off- and onsite manufacturing' and 'design for manufacture and assembly (DfMA). Whilst 'industrialised construction' is the common international term, this paper adopts the term used by the UK government, 'modern methods of construction' (MMC) (MHCLG 2019). Spanning approaches from modular to volumetric to panelised solutions, three common elements define MMC: (1) offsite lean manufacturing and assembly; (2) digital systems and robotics; and (3) a standardised 'kit of parts' approach.

First, *designing buildings to be manufactured in a controlled factory environment which are subsequently assembled in situ* is intended to provide a highly lean approach to the manufacture of housing components and systems, avoiding delays onsite. The approach 'enables low levels of waste, with commodities handled the fewest number of times, by the fewest number of people, via the least number of processes' (IPA 2021: 10.6). Contrary to the vagaries encountered with

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traditional onsite housing construction, factory production of volumetric (3D modules), panelised systems (2D walls/floors) and sub-assemblies (bathroom pods, cassettes), through offsite manufacturing and prefabrication, promise improved quality, reduced defects and minimised weather delays.

Second, *automated and collaborative building information modelling (BIM) control systems coupled with robotics* are designed to shift traditional construction processes from manual, site-based activities to digitally driven manufacturing with associated reductions in labour costs and increased product quality. Seven categories of construction methods are defined in the government-approved MMC definition framework (MHCLG 2019). These range from category 1, factory-built 3D (volumetric) units, to category 7, site process-led improvements, such as lean techniques, robotics and digital verification tools. This framework promotes pre-manufactured value (PMV) as a key procurement metric measuring the percentage of a building's construction cost derived from offsite manufacturing.

Third, a *platform-based 'kit of parts' approach* is central to MMC. Construction utilises common, repeatable assets with interoperable components intended to transform productivity and quality by using the fewest components across the widest range of assets (CIH 2021). A product platform therefore requires a 'sensitive balance between commonality and distinctiveness' (p. 15), no more so than for housing, where MMC offers mass customisation reducing the need for bespoke elements, which is weighed in relation to homes as expressions of identity and belonging, and adaptation requirements to accommodate residents' life-stages and changing (climatic) needs. The platform concept increasingly refers to an integrated system of products, processes, organisations and relationships (Domenico *et al.* 2024).

Most academic literature on MMC takes a technical engineering-led perspective (Payne & Serin 2023; Sanchez-Garrido *et al.* 2023; Doan *et al.* 2025). This paper instead offers a critical social science reading of MMC's potential to support quality, genuinely affordable and sustainable housing.

MMC for social housing is also analytically distinct from MMC for market housing. Speculative housebuilders release homes at the pace local sales markets can absorb, which works against the continuous output factories require. Social landlords hold homes long-term, are funded through public grant programmes and value whole-life performance, so can in principle supply the stable, aggregated demand on which factory production depends, but only as reliably as the public funding behind them.

4. RESEARCHING MMC FOR SOCIAL HOUSING IN THE UK

This research adopts a critical PE lens through which to analyse MMC (social) housing development as more than simply technological innovation, but part of complex institutional, political and economic systems. Recognising the need to avoid being deterministic in attribution of cause and effect (Jacobs 2024), the analysis seeks to understand how state institutions, capital and markets, land and planning, and political interests, representing already advantaged interests and unequal levels of influence, shape construction of the housing system (Aalbers & Christophers 2014; Berry 2023).

A PE lens was preferred to alternatives such as socio-technical transitions or construction management and lean production perspectives, which foreground technological learning and firm or project-level efficiency, while treating land, finance and state distributive choices as background conditions. The UK record suggests MMC failures have rarely been technological: being relationally dependent on who bears risk, who controls land and how public capital is allocated. This lens is particularly apt for social housing, where the state is simultaneously funder, regulator, landowner and client.

The paper is based on a comprehensive documentary review and discourse analysis of 16 policy and industry publications between 2010 and 2026, through which the dominant narratives surrounding MMC for (social) housing, policy interventions, government financial support and industry initiatives were investigated. Documents were identified through UK government, parliamentary and

industry body websites, snowballing from cited sources and workshop recommendations. The full list is provided in Appendix 1 in the supplemental data online. While intersecting, four broad time periods of political and industrial supply chain activity were identified, each reflecting a distinct approach to UK MMC residential development. These phases are discussed below in Section 5 as an introduction to the case of the developing UK MMC residential sector.

The secondary documentary review is complemented by observations and discussions during three UK MMC housing factory site visits[1] and participation in four industry tradeshows/conferences.[2] The paper additionally draws on discussions held during two 2.5-day international academic workshops in Lund (Sweden) and Nottingham (UK), entitled 'Factory Homes: The Role of Advanced Manufacturing in Tackling the Affordable Housing Crisis' (April and June 2025). These workshops and industry panel debates brought together 35 academics representing interdisciplinary social sciences to examine the claims, possibilities and concerns associated with the MMC model of housing. These discussions highlighted the need to critically appraise MMC's claims, learn from past failures and study good-practice exemplars. Fieldwork was not treated as a separate dataset but used in three ways: (1) to identify and prioritise the documents and exemplars analysed; (2) to test emergent themes against practitioner and researcher experience; and (3) to inform the interpretation of the constraints discussed in Section 6, such as pipeline dependence and factory-site interface risks. Field notes were taken, and whilst conversations were held as part of factory tours, no interviews were recorded and no participants are quoted.

These multiple forms of qualitative data (collected between October 2024 and July 2026) were subjected to a process of constructionist thematic coding (Braun & Clarke 2022) according to PE issues emergent from the initial secondary data review. Data were grouped into thematic codes, which were later prioritised and refined into five key themes. Coding proceeded in three stages: initial codes were generated inductively from the documents (*e.g.* demand volatility, land supply, proprietary systems, skills); these were organised under the above PE categories; and they were refined into themes through comparison with fieldwork notes. These PE themes were in turn named using the starting letter 'P' for ease of remembrance: (1) policy, regulation and governance; (2) pipeline visibility and procurement; (3) planning; (4) platform-based collaborative business models; and (5) people and skills. The geographical focus reflected the cases and interventions highlighted by the research data and it is acknowledged that further research could investigate sectoral developments in Scotland, Northern Ireland and further afield.

5. ADVANCES IN THE UK MMC RESIDENTIAL SECTOR: FOUR PHASES

Table 1 outlines four phases of development in the UK MMC residential sector emergent through documentary analysis and grouped (in different and overlapping temporal periods) according to their underlying rationale/logic. These phases are analysed against the five PE themes.

Table 1: Development of the modern methods of construction (MMC) residential sector in the UK, 2010–26.

	2010–16	2017–18	2018–22	2022–ONGOING
PHASE OF MMC DEVELOPMENT:	**1. INDUSTRY PILOTS, PROTOTYPES AND LOCALISED VENTURES**	**2. GOVERNMENT-BACKED PRODUCTIVITY DRIVE IN MODULAR HOUSING**	**3. COLLABORATIVE REFRAMING OF MMC PRINCIPLES, PROGRAMMES AND PRODUCTS**	**4. POLICY AND INDUSTRY ATTEMPTS TO TRANSFORM THE HOUSING SECTOR SYSTEMICALLY**
POLITICAL ECONOMY (PE) THEME				
1. Policy, regulation and governance	Farmer Review (Farmer 2016) acknowledges sectoral decline and recommends pre-manufactured solutions	Housing White Paper (DCLG 2017), Construction Sector Deal (HM Government 2018), investment in modular housing industry, launch of MMC definition framework	More coherent government strategy, Construction Innovation Hub (CIH) funded	£39 billion Social and Affordable Homes Programme, House of Lords critique of MMC strategy, first national standard for deployment of MMC
2. Pipeline visibility and procurement	Pipelines small, scattered and developer-led	Integration of MMC into Affordable Homes Programme, public procurement pipelines for MMC emerging	Government 'presumption in favour' of offsite construction in public procurement frameworks, supported by the Construction Playbook	Mandatory MMC targets relaxed in favour of outcome-focused delivery, emphasis on social value-based procurement outcomes

(Contd.)

	2010–16	2017–18	2018–22	2022–ONGOING
PHASE OF MMC DEVELOPMENT:	**1. INDUSTRY PILOTS, PROTOTYPES AND LOCALISED VENTURES**	**2. GOVERNMENT-BACKED PRODUCTIVITY DRIVE IN MODULAR HOUSING**	**3. COLLABORATIVE REFRAMING OF MMC PRINCIPLES, PROGRAMMES AND PRODUCTS**	**4. POLICY AND INDUSTRY ATTEMPTS TO TRANSFORM THE HOUSING SECTOR SYSTEMICALLY**
POLITICAL ECONOMY (PE) THEME				
3. Planning	MMC projects navigated through existing planning frameworks	Planning frameworks remained traditional, dialogue regarding planning for MMC for large pilots	Planning discourse recognises platform-based planning opportunities, formal planning category revisions remain under development	Planning systems increasingly accommodate MMC, robust statutory guidance remains evolving
4. Platform based, collaborative business models	Experiments in factory capabilities, not fully integrated platform design	Growth in platform-based approach supported by Homes England	The CIH's *Product Platform Rulebook* (CIH 2023) codifies platform-based construction formalising platform principles	Focus on scaling interoperable platforms and 'kits of parts' for housing across public and private markets
5. People and skills	Looming skills shortage for UK construction workforce and MMC discussed as part of future innovation	Skills discussions matured, recognition of MMC requiring new competencies and upskilling of workforce	The CIH emphasises knowledge exchange and training embedding digital design, platform thinking and factory workflows	National skills strategies increasingly include offsite, automation and data-driven competencies

5.1 PHASE 1: INDUSTRY PILOTS, PROTOTYPES AND LOCALISED VENTURES, 2010–16

The UK's recent interest in MMC residential possibilities (re)commenced following the 2008 global financial crisis, when housing output fell sharply, and the construction industry faced skills shortages, low productivity, and pressures on cost and delivery (Balakrishnan 2008). The government-commissioned Farmer review (Farmer 2016) identified a raft of challenges and delivered a stark warning that the sector needed to 'modernise or die'. This period saw pilots and prototypes emerge, including proof-of-concept volumetric 3D housing modules (*e.g.* Y-Cube; *ArchDaily* 2015) and local authority modular rooftop pilots (*e.g.* Populo Living n.d.). Except for timber-frame panelised systems, MMC remained an experimental adjunct to mainstream housebuilding.

5.2 PHASE 2: GOVERNMENT-BACKED PRODUCTIVITY DRIVE IN MODULAR HOUSING, 2017–18

In 2017, the Conservative government published *Fixing Our Broken Housing Market*, which set out plans to boost the supply of new homes in England (DCLG 2017). It suggested MMC homes could be built up to 30% faster than traditional methods, with a potential 25% reduction in costs. It purported MMC homes were 'high quality, reliable, more productive and can be highly energy efficient' and could 'require few people on site, helping to mitigate the skills shortage' (p. 54). The white paper proposed an 'Accelerated construction' programme, the 'Home Building Fund', examination of how the planning system worked for MMC developments, and helping MMC firms access innovation support. Responding to the Farmer review's call for innovation (BEIS 2017), the Construction Sector Deal (HM Government 2018) set out three strategic areas of focus: digital techniques deployed at all phases of design; use of offsite manufacturing technologies; and whole-life asset performance measurement. The deal also included measures to improve R&D in the construction sector, workforce training for MMC and demand for MMC through public sector procurement—including £170 million for the Transforming Construction: Manufacturing Better Buildings programme (House of Commons 2018).

5.3 PHASE 3: COLLABORATIVE FRAMING OF MMC PRINCIPLES, PROGRAMMES AND PRODUCTS, 2018–22

A more coherent government framing of MMC residential characterised this period, including a 'presumption in favour' of offsite manufacture for public infrastructure delivery capital programmes (where cost-effective) (IPA & HM Treasury 2020). The government sought for:

> the UK [to become] the world leader in modular building within the next 10 years, with safety, quality and choice and precision at its heart.
>
> (McVey 2019)

This commitment was materially restated in 2020, when the minister championed Legal & General's (L&G) modular manufacturing factory in Leeds, which aimed to produce 3500 homes annually using advanced factory-built techniques (MHCLG 2020). The Construction Innovation Hub (CIH), established by UK Research and Innovation (UKRI) with £75 million public investment and industry match funding, brought together over 600 industry, government and academic representatives to accelerate a shift towards manufacturing and digital processes (CIH 2025). Key to this was *The Construction Playbook* (Cabinet Office 2022), a guidance framework intended to transform how public works are assessed, procured, and delivered through aggregated and standardised demand. The *Playbook* was operationalised through seven principles of the *Product Platform Rulebook* (CIH 2023) and the *Value Toolkit*, a suite of tools to enable value-based procurement decisions (CIH 2022). These three tools were to work as an integrated system.

5.4 PHASE 4: SYSTEMIC APPROACH TO SECTORAL TRANSFORMATION, 2022–ONGOING

Between 2022 and 2023, in part due to the global economic slowdown, Brexit-related cost inflation, high upfront capital costs and a heavily supply-led model in which factory capacity outpaced secured orders, multiple volumetric housing providers went into administration or left the residential market, tarnishing the industry's reputation and prompting a government inquiry (Weinfass 2025). The 2023 inquiry entitled 'Modern Methods of Construction: What's Gone Wrong?' found that government support had lacked a coherent strategy and measurable objectives, citing weak demand pipelines, risk averse insurers and warranty providers, regulatory uncertainty, and lack of data on MMC use (House of Lords 2024). Nevertheless, it concluded that 'modern methods of construction can have an important place in UK housebuilding' (p. 17), particularly Category 2 panelised systems, given the ageing workforce and inefficiency of traditional housebuilding methods (House of Lords 2024). The inquiry, whilst not leading to a complete political withdrawal from MMC, prompted a shift in government support, from actively creating an MMC market to supporting MMC as one option within a broader housing delivery strategy. It led to a shift from mandatory MMC targets to a more flexible approach, focused on housing delivery outcomes, rather than prescribing a particular construction method (House of Lords 2024; MHCLG 2025a).

6. DEVELOPING GOOD PRACTICE FOR THE SOCIAL HOUSING MMC SYSTEM

Building on the longitudinal analysis of developments in the UK MMC housing sector, this section analyses progress in relation to deployment of MMC for social housing during Phase 4 (2022–26 and ongoing), highlighting examples of good practice (Table 2). The five themes are interconnected; pipeline visibility depends on policy commitment and funding stability, which in turn shape confidence to invest in MMC factories and reskills the workforce. Exemplars were selected where they address a structural constraint rather than a single project, are operational or formally adopted, involve public or not-for-profit actors serving social housing, and have documented outputs. 'Good practice' therefore denotes promising practice against these criteria; outcome evidence is still limited and is indicated in Table 2.

6.1 POLICY, REGULATION AND GOVERNANCE

The central political-economic challenge to MMC deployment for social housing in the UK (and beyond) is that the housing and construction system often operates and makes decisions in ways that are fragmented and short-term. Manufacturers cannot invest without demand; landlords cannot commit without mature supply chains; insurers and warranty providers need clear evidence; and public procurement struggles to value benefits beyond initial cost. Government leadership, regulatory certainty and long-term funding cycles are therefore essential to MMC-led housing

POLITICAL ECONOMY (PE) THEME	EXEMPLAR CASE STUDY	WHY THE EXEMPLAR REPRESENTS GOOD PRACTICE
1. Policy, regulation and governance	The Welsh Government MMC strategy for social housing recognises the potential for MMC to scale, speed up, and improve the quality of social and affordable housing delivery, while meeting its decarbonisation targets (Welsh Government 2020). It made MMC an important component in the Welsh Development Quality Requirements (Welsh Government 2021), which are used to assess design suitability during the Social Housing Grant application process	The Welsh Government has embedded MMC within a broader strategy of social housing delivery, industrial policy, decarbonisation and social value, meaning that the state plays an interventionist role in shaping both housing production and construction markets. Evidence: *e.g.* homes delivered through the Innovative Housing Programme
2. Pipeline visibility and procurement	Building Better, backed by the National Housing Federation, is an alliance of 32 housing associations and local authorities working together to increase the use of MMC in the social housing sector. It offers a social value-led MMC framework and Dynamic Purchasing System (DPS) that can support demand aggregation and enable organisations to share knowledge and expertise	Alliances such as Building Better offer well-governed procurement-compliant routes to market for social housing registered providers and local authorities and enable early engagement with MMC manufacturers through long-term partnerships. Survey evidence: 30,591 MMC homes planned (2023/04–2027/08) through Building Better and Procurement for Housing £800 million MMC Frameworks (NHF & Building Better 2024)
3. Planning	The Small Sites Aggregator is a government-backed initiative designed to unlock complex, disused and fragmented parcels of public land by 'bundling' them into viable portfolios (MHCLG 2025c). Developed in collaboration with Bristol City Council, and trialled in Bristol, the London Borough of Lewisham and Sheffield, the model seeks to optimise land use through multidisciplinary articulation of risk and potential value, and strategic aggregation of sites to unlock investment. Building on the Lloyds Banking Group's Social Housing Initiative, the scheme has a blended funding model attracting pension fund capital—whereby sites are leased, not sold, to investors for 40–60 years and then returned to public ownership. The initiative is now expanding nationally to deliver 10,000 social rent homes a year (Funk 2026)	The model seeks to tackle commercial and planning barriers by unlocking the additive power of sites deemed too small or complex for conventional delivery and suited to MMC methods. It demonstrates a novel funding strategy intended to ensure that long-term public value is retained locally. Evidence: pilot stage; the national target is untested
4. Platform-based collaborative business models	PAS 8700:2025 Modern Methods of Construction in Housing was created by the British Standards Institution (BSI) to support the procurement, design, manufacture, construction, and use of safe, resilient and repairable residential buildings that use MMC (BSI 2025)	Developed through industry collaboration, the standard provides a practical, structured framework to offer clarity and consistency across the supply chain, and to encourage alignment with good practice. Evidence: published in 2025; voluntary and untested at scale
5. People and skills	Future Occupational Profiles and proposed Skills Alliance (Offsite Alliance 2025). With input from over 150 stakeholders from across industry, education and training, the Offsite Alliance defines 19 occupational profiles critical to a future-proofed workforce capable of competently delivering MMC construction and infrastructure projects. The MMC Skills Alliance is proposed as a coalition that works in partnership with government bodies to deliver workforce foresight, training reform and national coordination. This has developed into an emerging collaborative infrastructure for a common future-skills agenda	Whilst not incorporated into a coordinated national skills response, to develop a competent future-proofed construction industry workforce, Offsite Alliance has created a practical network, developed occupational profiles, mapped training provision, engaged further education colleges, trained educators, delivered bootcamps and developed new educational material (Offsite Alliance 2026). Evidence: profiles and recommendations were shaped by a representative group of industry stakeholders and now need to be tested and validated more widely

Table 2: Good practice in modern methods of construction (MMC) for social housing (selection criteria in Section 6).

construction at scale. Rather than mandating a particular form of construction, the question is whether government can use its role as funder, regulator, procurer, landowner and economic strategist to create more stable conditions in which improved forms of housing construction can develop and compete, as seen with public sector delivery for other sectors (NHS England 2025; MoD 2025; DfE 2021).

For social housing, a long-term public programme can provide the demand stability needed to support innovation, while public interest justifies benefits, including quality, carbon-reduction, skills, regional development and social value, that the market alone may underprovide. Here the

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Welsh Government provides a valuable model because it has progressively treated MMC as part of a broader public strategy encompassing social housing delivery, quality standards, decarbonisation, skills development, local supply chains, industrial development and social value (Welsh Government 2020, 2021) (Table 2). To what extent can Wales's social democratic policy approach be replicated across the UK particularly given the new Prime Minister's focus on council house building and regional devolution (UK Public General Acts 2026)? The analysis suggests its principles are more transferable than its form. The Welsh model rests on one devolved government aligning grant, quality standards and industrial policy for a relatively small social housing sector. In England, comparable alignment is more plausible at combined authority level than nationally, provided grant conditions, design standards and procurement are coordinated over a multi-year horizon.

6.2 PIPELINE VISIBILITY AND PROCUREMENT

As opposed to discrete traditional construction projects, MMC requires investment in factory capacity, digital systems, certification, workforce and supply-chain relationships before committing to a contract. For MMC housing, procurement therefore forms part of the industrial strategy and crucially depends on a sufficiently visible and assured flow of work. For social housing, the strategic opportunity is that local authorities and registered providers of social housing can create the anchor demand required to break this cycle. *The Construction Playbook* (Cabinet Office 2022) advocates relevant, if non-mandatory, principles: aggregating and standardising demand, outcome-based specification, early market engagement, and whole-life value.

There are pockets where these recommendations have been adopted, *e.g.* the Great Places Housing Group has established the Innovation Chain North (ICN) framework for construction designed to support the delivery of new homes across the North of England (ICN 2026). The framework seeks to create pipeline visibility, trusted supplier partnerships and wider social value. However, the social housing sector remains fragmented (Akerlof 2024). Building Better (2026) (Table 2) addresses the pipeline challenge through a sector-led aggregation model which pools demand from 32 social housing providers, collectively managing more than 215,000 homes, by pre-qualifying the market. This gives providers a compliant, lower risk route to suppliers, while giving MMC manufacturers a larger, visible pipeline of work. As opposed to treating every MMC scheme as a one-off demonstration project, this sector-led procurement body is pooling data, experience and knowledge across the sector to build market confidence, though this member alliance still excludes the majority of England's more than 1500 housing associations. The question remains as to whether Building Better's demand aggregation addresses the underlying volatility of public capital funding cycles, or can only attempt to improve procurement efficiency within an unchanged system? The evidence points to the latter. Aggregation lowers transaction costs and supplier risk, but it cannot create demand that grant funding does not support, and members' pipelines remain exposed to short grant cycles and competing calls on their finances (House of Commons 2025). Aggregation is necessary but not sufficient; it would become transformative if linked to the 10-year Social and Affordable Homes Programme, converting grant certainty into multi-year factory order books.

6.3 PLANNING

Government-supported volumetric modular housing failed in part because the planning system acted as a systemic constraint that amplified weaknesses of capital-intensive, factory-based business models and insufficient market demand. MMC factories require a predictable, high-throughput pipeline, but the UK planning system often produces uncertain, fragmented demand. The PE lens highlights the importance of building a credible, aggregated and planning-ready housing pipeline which is then aligned with manufacturing capacity, procurement and a skilled workforce. The PE framework also points to land speculation and the need for land reform, whereby the state plays a more active role in land assembly and value capture (Wallace *et al.* 2025).

The Small Sites Aggregator pilot (Table 2) provides an example of good practice as a model whereby the public sector can begin to overcome fragmentation of the land market and planning constraints by acting as a coordinator and portfolio builder for MMC social housing development.

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The aim of the national roll-out of this government supported initiative (a partnership between the Lloyds Banking Group and Ministry of Housing, Communities and Local Government—MHCLG) is that local and combined authorities identify a portfolio of fragmented parcels of brownfield public land for development of 10,000 social rent homes per year (MHCLG 2025c; Funk 2026). Unlocking plots overlooked by large developers aggregates demand and offers a more attractive proposition for blended public and private investment (Housing Festival 2024). Such an approach could help de-risk the land, planning, procurement and manufacturing system. It is important to ask, however, whether this pension-fund leaseback model represents a new form of financialisation of public land and investor dependency, rather than presenting an alternative to it? The answer depends on its terms. Because land is leased rather than sold and returns to public ownership, the freehold and long-term land value stay public, distinguishing it from disposal. However, investor returns are secured through long-term revenue claims over 40–60 years. The model is better understood as managed financialisation, whose public value depends on rent-setting, risk allocation and whether public bodies retain capacity to borrow and build directly.

6.4 PLATFORM-BASED COLLABORATIVE BUSINESS MODELS

The failure of volumetric modular housing companies exposed the risks of proprietary, vertically integrated delivery systems. Where projects depended heavily on a particular manufacturer's design, components, production processes and technical specifications, insolvency could disrupt or delay completion and create difficulties in transferring the project to another supplier. Concurrently, the concentration of specialist knowledge within proprietary factory systems created risks for workforce mobility. This highlights the need to avoid developing MMC as isolated corporate ecosystems. It underlines the requirement for common standards, documented interfaces, transferable digital information and industry-wide competency frameworks so that neither buildings nor workers are dependent on the survival of a single proprietary platform.

The key contribution of the PAS 8700 standard (Table 2) is that it encourages (social) housing projects and programmes to be organised around systems, assemblies, components and interfaces, with flexibility for how this is achieved. Such a common standard makes it easier for procurement to be based on capability and performance, rather than risk buying an opaque proprietary product. PAS 8700 can also help create a portable project record that can travel with the building enabling continuity, which is important as housing associations need to consider the whole asset life, and not simply construction completion. Crucially, however, the PAS 8700 remains a voluntary standard and untested at scale.

6.5 PEOPLE AND SKILLS

Research has highlighted that MMC requires less onsite labour than traditional brick and block construction methods, potentially easing labour shortages faced by the sector (CITB 2019). Instead, for MMC to contribute to meeting (social) housing delivery targets, labour demand needs to shift from traditional roles on construction sites to developing a range of new competencies and professional roles from across design, advanced manufacturing, logistics, digital coordination, assembly, building performance and quality assurance (Akerlof 2024). There is currently a lack of sufficiently trained workforce for MMC housing, and tailored training required for the sector is commonly developed in-house given the lack of available national training programmes and apprenticeships. Additionally, skills challenges arise at the point when MMC techniques interface with traditional construction skills onsite, such as groundworks, introducing risk for developers (House of Lords 2024).

The Offsite Alliance has set out 19 future occupational profiles for the MMC industry, alongside a national MMC Skills Alliance supported by government and connecting industry and education (Table 2). However, the UK skills landscape remains highly fragmented across multiple institutional bodies, qualifications and modes of learning, awarding and accreditation bodies and institutional reform is needed to ensure competency and future-proof the formal construction skills system (Killip *et al.* 2025). A coordinated national training strategy is required, organised around the whole production system, factory-site interface competences and bridging pathways from existing

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construction roles. Investments in workforce training would benefit from local and regional procurement frameworks and pipeline visibility to create assurance of secure, quality local and regional employment. Critically MMC raises questions of workforce deskilling versus reskilling, labour precarity from agency staffing, and a shift from site-based trades to employment by venture capital-funded manufacturing companies.

7. DISCUSSION

What, then, are the prospects for MMC to help close the social housing deficit? Based on recent completion rates it is likely that MMC remains a modest share of new social homes: just over 5250 MMC social homes were completed in 2022–23 against a need for 90,000 social rent homes per year, and the conditions identified above are only beginning to be put in place. Over the longer term, MMC could contribute substantially if the 10-year Social and Affordable Homes Programme provides multi-year demand certainty, public land is assembled through mechanisms such as the Small Sites Aggregator, and procurement aggregation and common standards reduce dependence on single proprietary suppliers. Its contribution remains conditional on the overall volume of public investment: MMC changes how homes are built, not how many are funded.

International experience supports this reading. Where industrialised housing is mainstream, as in Sweden and Japan, it rests on long-term demand from municipal housing companies or large integrated builders, consistent land supply and sustained co-investment in production capability (Teh 2019; Yuill 2022; van Veelen & Knuth 2023). These are political economic rather than technological achievements. In the UK market sector, where output is governed by sales rates, MMC's prospects are weaker; social housing, with its potential for patient, aggregated public demand, may therefore be the segment through which a viable UK MMC industry is built.

8. CONCLUSIONS

The UK housing construction sector stands at a transformative moment in its modern history. Demand for social housing is more pressing than ever. Industry approaches, technologies and business models have moved on considerably since the postwar prefabrication era and the widespread failure of volumetric modular construction in the late 2010s/early 2020s. These failures stemmed from a mix of business decisions, supply chain pressures and macroeconomic conditions, and provide important lessons.

The prospects for to address the social housing deficit were explored across five interconnected political economy (PE) themes: policy, procurement, planning, platforms, and people and skills. Progress against these themes is uneven. Modern methods of construction's (MMC) contribution to closing the deficit is likely to be modest in the short term and, in the longer term, conditional on stable public commitment and demand, land assembly and long-term public funding rather than on technology. Tackling the systemic shortcomings of social housing policy in an increasingly financialised housing market remains fundamental to ensuring access to decent, future-fit homes and reducing waiting lists. MMC housing delivery needs to be reframed as a strategic component of social housing and industrial policy, not an end in itself.

The critical PE lens applied here reveals an urgent policy, industry and research agenda: understanding and coordinating the enabling conditions for MMC delivery alongside its structural tensions. MMC in social housing needs to be treated as a holistic change programme tied to regional decarbonisation, industrial innovation, opportunities for fair and secure work, and thriving local communities, not a standalone technological fix. Future research would benefit from reviewing these pilot projects and sectoral developments in-depth using a broad PE lens, and expanding this review to internationally comparative contexts.

NOTES

1 Innovaré Offsite, Coventry, UK, 25 February 2025; Explore Manufacturing (Laing O'Rourke), Worksop, UK, 17 June 2025; Melius Homes, Nottingham, UK, 18 June 2025.

2 (1) 'The Housing Forum: Delivering Homes for the Future' conference (October 2024); (2) Housing Festival 'New Homes in New Ways Summit' (February 2025); (3) ARCOM and Loughborough University, 'Modern Methods of Construction: Confidence Amidst Collapse' (February 2025); and (4) Offsite Expo (September 2025).

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AI DECLARATION

Generative AI (Claude, Anthropic) was used to check the formatting of the references against APA style and to highlight typographical and citation inconsistencies for the author's independent review. No AI tool was used to generate, draft or edit the substantive text, arguments or analysis of this manuscript.

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The author confirms sole responsibility for the research conception and design, data collection, analysis and interpretation of the results, and manuscript preparation.

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The author has no competing interests to declare. The author is the invited guest co-editor of this special issue and was recused from all review and editorial decisions concerning this paper.

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The documents analysed are publicly available and listed in Appendix 1 in the supplemental data online. Fieldwork notes are not shared to protect participants' confidentiality.

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