



## HOUSEPROUD:

□ Practices and strategies of leading UK housebuilders on Offsite-MMC  
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Recent government-backed reports have suggested that Modern Methods of Construction (MMC) are crucial to the solution for addressing the under-supply of housing and wide concerns over the need to improve performance. The great bulk of MMC is actually offsite technologies. This article reports on the practices and strategies of the top 100 housebuilders regarding the use of Offsite-MMC. This survey revealed the top 100

firms' perspectives on barriers and opportunities affecting the likely future uptake of Offsite-MMC and investigated the current Offsite-MMC applications of the large housebuilders. The study combined face-to-face and telephone interviews with a postal questionnaire survey, which yielded an overall response rate of 36 per cent. The responding firms together contribute more than 30 per cent of the total UK housing-unit completions.

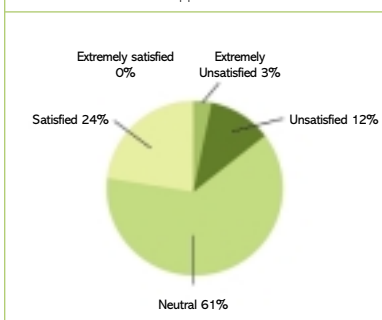
### HOUSEBUILDERS' ATTITUDES TO OFFSITE-MMC APPLICATIONS

Some would argue that housebuilders are hard to please and, anecdotally, evidence suggests that there is a significant general dissatisfaction with the time, cost and quality performance of the traditional-building sector. However, what was somewhat surprising from this survey was that only 24 per cent of the housebuilders surveyed

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were satisfied with their own Offsite-MMC applications, the majority (61 per cent) held a neutral attitude, and 15 per cent were unsatisfied (Figure 1). Furthermore, housebuilders showed less satisfaction with the related offsite applications in the industry. Results reveal that the larger the housebuilders were, the more satisfied they were with the Offsite-MMC applications. This finding shows that housebuilders are less satisfied with current offsite performance than is the rest of the construction sector (a recent BSRIA study showed around 72 per cent satisfaction with offsite).

Figure 1: The top 100 housebuilders' satisfaction with their Offsite-MMC applications



### THE NATURE AND EXTENT OF OFFSITE-MMC APPLICATIONS IN HOUSEBUILDING

In practice, there is less actual use of offsite-MMC in housebuilding than would be expected from the press coverage (Figure 2). Generally, the extent of using Offsite-MMC for flats/apartments is slightly higher than for individual houses. Some highly documented Offsite-MMC techniques are actually only applied to a very limited extent in housing. These include complete modular building, bathroom & toilet pods and flat pack, kitchen flat pack, offsite plant room and complete wall panels (both skins). This finding reflects a recent buildoffsite market value study which says that the value of the UK offsite market in 2004 accounts for 2.1 per cent only of the total value of the construction sector (all construction, including refurbishment) (Goodier & Gibb, 2005).

### THE TREND OF OFFSITE-MMC APPLICATIONS

Almost 60 per cent of housebuilders were planning to increase their use of Offsite-MMC in the next three years (Figure 3). The remaining firms (42 per cent) indicated that they planned to maintain their current levels. The larger housebuilders were more likely to increase the use of Offsite-MMC. The results show that the majority of housebuilders were actually open to the increased take-up of offsite technologies. However, comments made along with the results reveal that there is still a risk-averse attitude to the use of innovative techniques among a significant number of housebuilders.

The greatest potential growth for residential Offsite-MMC applications are kitchen and bathroom pods (44 per cent), external walls (41 per cent), timber frames (37 per cent) and roofs (33 per cent) (Figure 4). But housebuilders did not see great potential for complete modular buildings. The analysis of comments revealed that housebuilders assessed the potential for Offsite-MMC applications against a wide range of factors, including technical requirements, cost, time,

site integration, customers' choices, sales, mortgage issues and site specifics.

### DRIVERS FOR AND BARRIERS TO THE USE OF OFFSITE-MMC

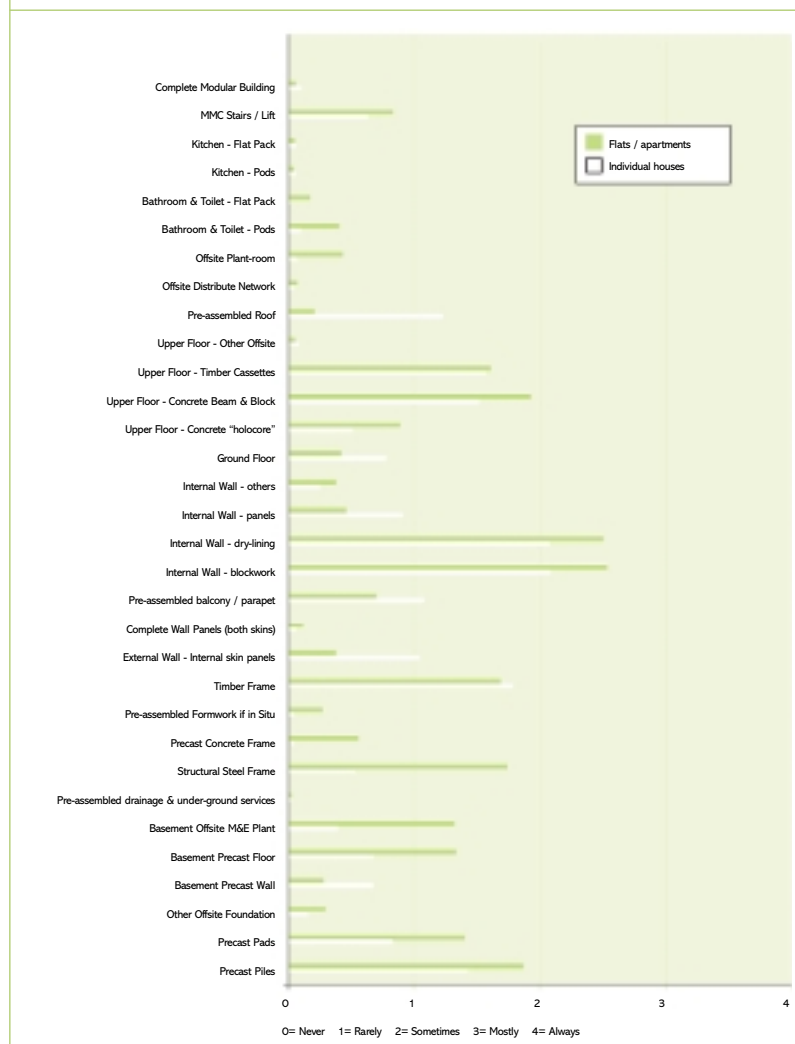
The survey also investigated the drivers for and barriers to the use of Offsite-MMC in housebuilding. The most important drivers were achieving high quality, then minimising on-site duration, then reducing health & safety risks, then addressing skills shortages and then ensuring cost certainty. The most significant barriers to the use of Offsite-MMC were higher capital cost, then complex interfacing between systems, then the inability to freeze design early on, then the nature of the UK planning system and then manufacturing capacity. The results support the findings of a number of recent studies, including the proSPa market survey by Loughborough University, the Housing Forum study by Imperial College and the BSRIA survey. Within the context of the Barker Recommendation 33, the MMC Cross Industry Group is

currently taking a strategic look at the barriers to and solutions for the greater use of MMC in UK housing. Loughborough is currently doing a full review of the recent and current industry and research initiatives on use of offsite technologies in housebuilding.

### PROCUREMENT AND INTEGRATION OF OFFSITE-MMC

Fixed-price/lump-sum and in-house management dominated the procurement methods (79 per cent together) of the top 100 housebuilders. Detailed analysis on procuring offsite elements show that more than half (57 per cent) of the respondents preferred to use a fixed-price/lump-sum method, rather than strategic partnering alliance, project partnering or design and build. However, results on integration indicate that 71 per cent of the respondents took Offsite-MMC into consideration from the basic house type design (Figure 5). The inconsistency between the results on procurement and integration suggests that most housebuilders were aware of the

Figure 2: The nature and extent of Offsite-MMC applications



- ▶ principle of integrating Offsite-MMC early on but, in practice, adhered to conventional procurement methods.

### STRATEGIES USED FOR OFFSITE-MMC APPLICATIONS

Strategies that the firms had developed mainly related to process, procurement, learning, benchmarking and training issues. Factors of market-focusing, people's preconceptions, planning and building regulations, plus finance were also identified, but less frequently. The majority of the top 100 housebuilders considered Offsite-MMC differently for individual houses and flats, regarding applicability, finance, speed, business model, people's preconception, volume and flexibility. The finding suggests that housebuilders had developed substantial strategies within their direct supply chain, eg: themselves, designers, manufacturers and suppliers, but neglected the great potential in the wider context of the public, mortgage lenders, insurers, planners and building regulation & controls for use of Offsite-MMC. An approach of mixing use of Offsite-MMC and on-site production has been taken by some housebuilders. This approach favours incremental, rather than radical, innovations. This is not unusual given the nature of private housebuilding business and the real and perceived barriers currently co-existing in the industry. A number of housebuilders have taken Offsite-MMC into their organisational strategic management, attempting to realise all the potential benefits from offsite production. Innovation leads to improved competitive advantage and greater profitability. However, innovation is risky, requires significant investments and is often resisted within the firm. This justifies the strategies developed by housebuilders on learning, benchmarking and training.

### STRATEGIES RECOMMENDED FOR INCREASING THE TAKE-UP OF OFFSITE-MMC IN THE INDUSTRY

The survey also identified large housebuilders' recommendations for increasing the take-up of Offsite-MMC in the industry. The main points include:

- 1 People's perceptions should be challenged;
- 2 Improved procurement is the key to achieving long-term success;
- 3 Better cost data and more competitive costing are required;
- 4 Planning needs to be more flexible and changing building regulations must be acknowledged;
- 5 Political levers will encourage the use of Offsite-MMC;
- 6 Guidance on the decision-making process and practical applications should help increase the take-up of Offsite-MMC.

The strategies developed and recommended were based on housebuilders' specific experience and knowledge within the context of their companies and projects. They should be treated more like analytical strategies than quantitative formula for the use of Offsite-MMC.

To sum up, the current take-up of Offsite-MMC is relatively low amongst leading UK housebuilders, despite significant press and media coverage. This situation is likely to improve, however, growth in Offsite-MMC may be limited in the foreseeable future unless additional 'external' measures are taken to help address a combination of perceived and real barriers. Leading housebuilding firms have accordingly developed strategies mainly on aspects of process, procurement, learning, benchmarking and training. However, it is clear that the wide spectrum of housebuilding stakeholders need to gather together in



Figure 3: The trend of using Offsite-MMC in the top 100 housebuilders

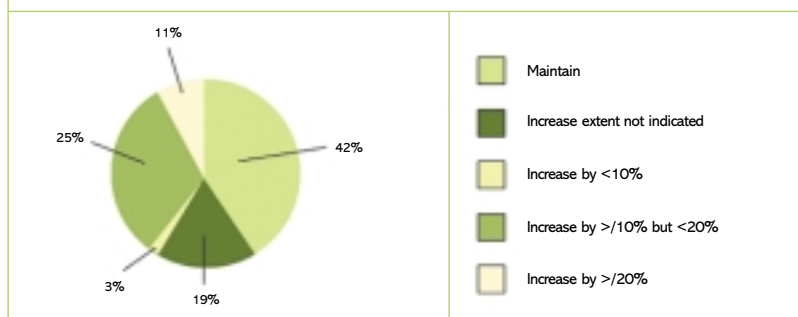
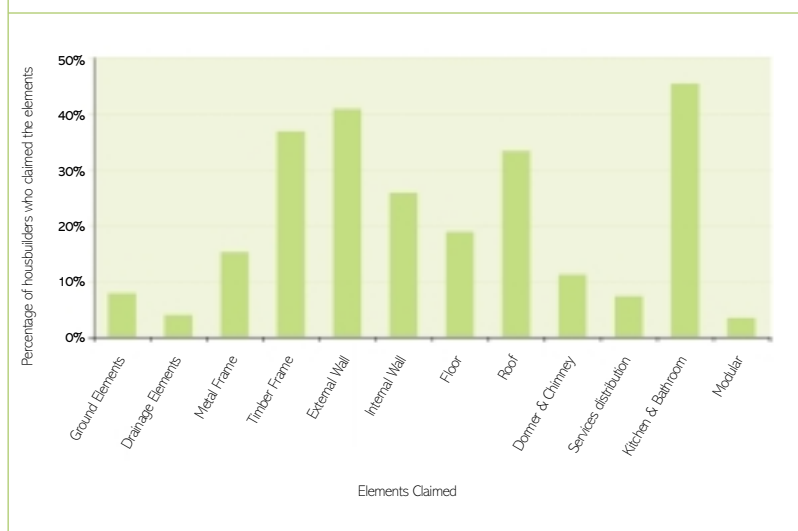


Figure 4: Elements which offer greatest potential for Offsite-MMC – the top100's view



order to deliver a step improvement of housing supply in both quantity and quality. More investigation into the decision-making process and project-performance measurement should facilitate the wider take-up of Offsite-MMC in housing construction □

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Figure 5: Stages in which Offsite-MMC is taken into consideration – the top 100 housebuilders' practice

