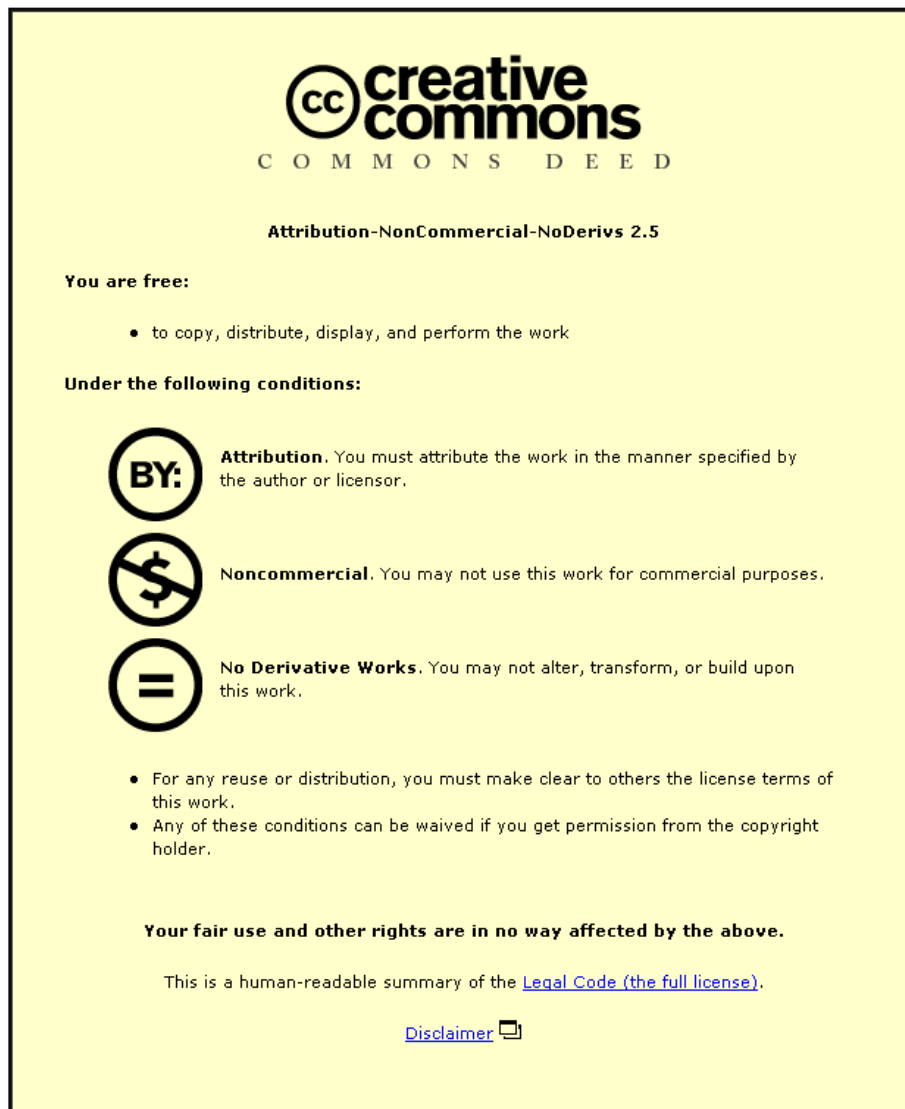


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Briefing: Future trends in UK housebuilding

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Homes have more influence on the way that people live and behave in society than anything else they spend their money on. A house usually represents an individual's largest ever single investment, and is expected to last for decades, if not indefinitely. In order to make the most appropriate investment today, however, people need to know how they will be living and working in the future, both individually and as a society. A Royal Institution of Chartered Surveyors (RICS) report *The Future of UK Housebuilding*, published in December 2010, investigates and debates this issue. This briefing discusses the implications of the report for municipal engineers and others. In particular, the issues of sustainability, zero carbon dioxide, offsite technologies, technology changes and community impact are discussed.

1. Homes for people: the future

Future housing requirements are qualitative and reflect changing aspirations, values and tastes. A critical uncertainty of the future is whether the UK's population – possibly in the future comprising a more diverse mix of cultures and backgrounds – will continue to follow this same pattern of attitude to housing, or whether society's attitudes will change, leading buyers, occupiers and hence suppliers to make different choices. Future patterns of development will be driven by demographic, economic, socio-cultural, political, technological and environmental factors. According to the *CLG Live Table 401*, the number of households in the UK has been projected to gradually increase, from the current 27 million to 33 million by 2031 (CLG, 2010). The population is projected to continue rising and the average household size is decreasing. The *Live Table 402* shows that one-person households accounted for 19% of overall households in 1971, but that share increased to 33% by 2010 (CLG, 2010). The vast majority of future housing stock in the next few decades is already in place now. The form and make-up of individual households will continue to change, modes of living, working and leisure time will continue to interweave, and consequently future housing will need to be more flexible and adaptable than it is today. Houses currently account for 82% of dwelling stock in England, while the split between houses and flats in new-build in recent years has presented a trend towards equilibrium, reaching 50/50 in 2008/2009 as indicated in the *Live Table 254* (CLG, 2010). Construction techniques and regulations (both local planning and national building regulations) will need to acknowledge and enable this increasing flexibility, while the suitability (and adaptability) of the existing housing stock will become an increasingly important factor.

Many of these issues are discussed in a report recently published by the Royal Institution of Chartered Surveyors

(RICS) (Goodier and Pan, 2010). This report discusses a number of UK housebuilding scenarios for the next 10–20 years, in order to provoke deliberation and encourage more strategic thinking within the industry and among policy makers and other stakeholders. The three scenarios discussed were 'The future of housing provision', 'Factors influencing the future of housing and supporting infrastructure' and 'Energy efficient homes'. The report highlights that the current demands on housebuilding are unlikely to change over the coming decades: if anything they will intensify. Climate change, demographic change and the demand for housing are all leading to a shift in the expectations placed on the supply of housing, with a need for increased quality, quantity, locality, affordability and environmental sustainability. There is an urgent need to think more strategically, in order to address the challenges, as summarised in the housing green paper (CLG, 2007), 'more homes to meet growing demand; well-designed and greener homes; more affordable homes to buy or rent'.

The pervasive and ubiquitous nature of technology in people's lives and homes over the last two decades has produced an 'anywhere, anyhow, anytime' attitude, especially among young people and in business. The past 20 years have seen exponential growth in the use of home PCs, mobiles and other electrical appliances in the home, to the extent that almost everyone has them. More recent technologies in the home such as plasma screens, wi-fi and smart metering are likely to follow a similar path over the coming decade or so. However, this technological advancement is not wanted, or kept up with, by everyone. There is therefore a possibility of a disenfranchised minority who may resent and increasingly resist this form of modern living, for example those who are too poor, insufficiently educated or unconnected (technologically or socially). It is

therefore possible that communities will emerge which are a sanctuary or haven from the 24/7 forever-connected world. A technological underclass is another possibility. Whether individuals choose fully to embrace information and communication technology (ICT), however, is unlikely to prevent the saturation of ICT into people's lives. In addition, as homes become ever more sophisticated, varied and high-tech, with smart meters, solar panels and advanced insulation and ventilation systems, more and more home owners will not be able to conduct their own house repairs, renovations and domestic 'odd jobs'. However, the increased demand for homes designed for adaptability will make it easier for the new generations of home owners to reconfigure their dwellings as and when required, or indeed, to order a new replacement. Housing design will have to evolve further to incorporate the different needs of differing stakeholders. The briefing, planning and design process will therefore need to include a broader range of stakeholders of the present and future, where the public acceptance of the design is critical, for example, community groups, schools, local businesses and the house-buyers of tomorrow, such as college and university students.

There is increased interest in self-sufficiency among many consumers, and the term 'self-sufficient communities' often appears in publicity for new developments, although currently can only truly be applied to communities that are more geographically isolated, like small island nations, regions or cities. Examples in the UK currently include islands such as the Shetlands, but also self-sufficient development communities such as the Hockerton housing project (www.hockertonhousingproject.org.uk). However, such communities and principles will become increasingly important in the future because of increased microgeneration and renewable energy, natural degradation, economic uncertainty and social instability (Rydin and Goodier, 2010).

2. The future of housebuilding

In spite of the complexity of these wide-ranging factors, issues and trends, the future of housebuilding is likely to be largely driven by the combination of government policy on sustainability, legacy of the economic downturn and the rapid evolution of innovative technologies in the short and medium term (Goodier and Pan, 2010). The current policy is markedly focused on the introduction and implementation of the code for sustainable homes and achieving zero-carbon dioxide new homes in a few years' time, which at the time of writing is still set for 2016. These innovative technologies are multi-faceted, encompassing offsite production, modern methods of construction (MMC), renewable energy and microgeneration, new materials and ICT (Lawson *et al.*, 2011). In the longer term, the future of UK housebuilding is likely to be driven by a more complicated profile of forces including demographic shifts, policy evolutions and climate change. Some

other issues, such as increased global competition (in particular the consequent foreign entries to the UK market), and aspects of sustainability other than energy, such as water, waste and ecology, are likely to become increasingly dominant.

The structure of the industry is likely to become more diverse, with more specialist firms working with sustainability, zero carbon dioxide and innovative technologies (for both construction and renewable energies). The sector is very likely to see the coupling and de-coupling of housebuilding and manufacturing, as has appeared previously in its history. The benefits of the increased industrialisation of the housebuilding process will become more recognised and accepted by consumers, builders, regulators, lenders and policy-makers. Land use planning, unless with dramatic changes, will, however, continue acting as a determinant force, driving housebuilding organisations in relation to their house type designs, innovation and technology take-up, hence influencing and driving significantly the relationship between housebuilding and manufacturing (Pan and Goodier, 2011).

The future nature and form of UK housebuilding will no doubt remain heavily reliant on land use planning, the national (and as has recently been seen, the global) economy and the variability of the housing market. However, consumer preference, technology and wider sustainability issues will play increasingly important and dominant roles. Nevertheless, the debates regarding the future discussed here highlight the uncertainties associated with the future, together with the potential impacts of the decisions that are made today (Goodier *et al.*, 2010).

3. Global drivers

There is doubtless increasing demand for more new-build housing, while the nature of future housing, for example its size and type, may also be driven by other factors. Demographic and economic drivers could have a profound impact on consumer behaviour. Migration, for instance, will import new social attitudes (particularly towards borrowing, owning a home and forming a household), while the current economic crisis may reduce confidence in financial institutions and create a new aversion to risk. Attitudes towards the countryside and 'rural lifestyles', for example, have shaped the planning system and resulted in an intolerance to development in rural areas. 'Urban renaissance' of central locations and the glut of apartment development in the late 1990s and into the 2000s are also examples. Attitudes in the twenty-first century may diverge from those of the twentieth century, especially if migration transforms the country's socio-economic profile, introducing a new mix of attitudes and aspirations. Examples may include more high-rise city-centre living and increased family- and community-orientated urban living, which are more popular in parts of Europe and the wider world than in the UK.

The way homes are purchased in the future could also change. Prefabricated offsite houses might never be actually repaired or renovated on site, but instead form part of a disposable sealed unit that is removed and replaced as a stock item, and designed for a predetermined life span (e.g. Figure 1). This would have implications not only for housebuilding, but also on the provision and connection to local services such as gas and electricity, as well as street access. Customers in the future are likely to be able to order their modular homes on-line, as well as to design their homes themselves using a 'kit of parts' on interactive design websites. Toyota Homes (see www.toyota-home.co.jp) in Japan have adopted this approach for several years. In the UK, Rapyd Rooms (see www.rapyd.co.uk), by Buildings for the Future Ltd, and Ecospace's 'configurator' (see www.ecospacestudios.com) allow potential buyers to specify their design on-line, add on extras such as decking, shower room and sky lights, and then the buyer is presented with a guideline price. This will have subsequent follow-on implications for many trades and small businesses, which currently rely heavily on ongoing home maintenance requirements for employment. Factory-produced homes are also likely to be increasingly imported and exported in accordance with international standards.

4. A long-term perspective

Beneficiaries of a move towards a longer-term perspective would not only be clients, society and the public (where it is a 'no-brainer' in terms of sustainable development) but also the housebuilding sector itself, which needs to prepare better for its own future, through the creation of a more informed and forward-thinking industry, accumulating and capturing the knowledge of its diverse participants, in order to stimulate innovative and creative thinking. While looking ahead

systematically, housebuilding stakeholders, including government and consumers, need to be sufficiently adaptable, responsive and flexible to keep up with, if not capitalise on and take advantage of, the rapidly forming futures that lie ahead.

REFERENCES

- CLG (Communities and Local Government) (2007) *Homes for the Future: More Affordable, More Sustainable*. CLG, London, UK.
- CLG (2010) *CLG Live Tables: 254, 401 and 402*. CLG, London, UK.
- Goodier CI and Pan W (2010) *The Future of UK Housebuilding*. London, UK.
- Goodier CI and Rydin Y (2010) Editorial: Sustainable energy and sustainable cities. *Proceedings of the Institution of Civil Engineers – Urban Design and Planning*. **163**(4): 147–148, <http://dx.doi.org/10.1680/udap.2010.163.4.147>.
- Goodier CI, Austin SA, Soetanto R and Dainty ARJ (2010) Causal mapping and scenario building with multiple organisations. *Futures* **42**(3): 219–229, <http://dx.doi.org/10.1016/j.futures.2009.11.007>.
- Lawson M, Ogden R and Goodier CI (2011) *Design for Modular Construction*. Taylor and Francis, UK.
- Pan W and Goodier CI (2011) Housebuilding business models and offsite construction take-up. *ASCE Journal of Architectural Engineering*. See [http://dx.doi.org/10.1061/\(ASCE\)AE.1943-5568.0000058](http://dx.doi.org/10.1061/(ASCE)AE.1943-5568.0000058) (accessed 25/04/2012).



Figure 1. A two-storey containerised housing system by Eco Modular Living Ltd

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