UK COLLABORATIVE CENTRE FOR HOUSING EVIDENCE

Social Housing Policy Working Group

Promoting design value in public rented housing, an English perspective

Professor Flora Samuel, University of Reading

11 October 2018

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL
Arts & Humanities Research Council
JRF JOSEPH ROWNTREE FOUNDATION
housingevidence.ac.uk

About the author(s)

Professor Flora Samuel is Professor of Architecture in the Built Environment at the University of Reading, and RIBA Vice-President for Research. She leads the “Place” theme of the UK Collaborative Centre for Housing Evidence.

Acknowledgements

With thanks to all those who attended the May 2018 Social Housing Policy Working Group and in particular, Jonathan Rickard of Radian who was the paper’s discussant. I am grateful to the ESRC, AHRC and Joseph Rowntree Foundation for financial support through the UK Collaborative Centre for Housing Evidence.

Contents

Executive summary

“Bullied and undermined, planning authorities have been left castrated and toothless, stripped of the skills and power they need to regulate, and sapped of the spatial imagination to actually plan places.” (Wainwright, 2014).

In recent years the economic dimension of housing design has dominated housing discourse most notably through the activities of Volume House Builders, meaning that other types of long-term design value - social, sustainable and cultural – the hallmarks of quality have been neglected. This paper argues that the promotion of design value is closely linked to the status and power of its champions within the housing delivery team, most notably architects and planners. Architects, the most highly trained housing designers, are taught to work at multiple scales to develop spatial and material strategies, using boundary objects (drawings, models and so on) as the basis for negotiations with clients, ‘users’ and others, using professional judgment honed through practice to deliver housing that delivers on multiple dimensions of design value. The paper provides a brief historical account of the marginalisation of architects, planners (and design value) from housing delivery and research - covering key issues such as procurement, building contracts, fees, post occupancy evaluation and the dissolution of local authority housing departments - as a precursor to developing a series of policy recommendations for the promotion of design value in public rented housing going forward.

Introduction and background

Why is design value important for the production of social housing? Housing is a basic human right (UK Human Rights Act 1998) yet according to Shelter statistics there are over 1.8 million households in England waiting for a home (Shelter, 2018). Definitions of a 'decent' home, as a watertight and temperate unit are deeply inadequate (URBED, 2010). As Mariana Mazzucato has illustrated so well in her book *The Value of Everything* that bemoans the neglect of 'public value' and an important influence on this paper, economists have 'an intellectually impoverished idea of value' which is 'just taken as read' (2018, p.8). This is startling evident in discussions of housing in which the making of a 'decent' home is reduced to an environmentally temperate box (though even perceptions of thermal comfort relate to context). No weight is given to design – spatial layout, materials, community and placemaking. This seems odd given the growing recognition of the impact of design on health and wellbeing (Design Council, 2018). History has shown that housing 'units' built to minimum economic cost with minimum thought have a minimal lifespan and long-term costs. Like 'fast fashion' and 'fast food' they hide a range of unacceptable and deeply damaging impacts. Truly decent homes offer social value: choice, dignity and freedom. They provide a sense of place, reinforce identity, provide safety, give access to education, social opportunities, exercise, healthy food, daylight, green space and the 'eudaimonic wellbeing' that comes with an understanding of one's place in the world (Boyko et al., 2017). Decent homes save money long term through energy use, impact on the environment and through the promotion of positive behaviours. Decent homes are the product of design and planning that builds on lessons learnt about what works. Developers do not carry the long term cost of bad design but local authorities, health, education and police services do (CABE, 2006, p.12).

While the focus of this paper is on 'social' or 'public rented' housing produced by local authorities such is the current complexity of mix of tenures and housing providers that it is difficult to separate it out from other kinds of housing, particularly 'affordable' housing delivered by housing associations and providers (Shelter, 2015). Just what public social housing is or might be is a key question. It is well known that definitions of 'affordable' (Brownhill et al., 2015, p. 6) can be linked, particularly in London, to house prices and are not affordable in any real sense to people on an average income. 'In Sweden the term "social housing" is not used. The corresponding sector is called "allmännyttig", which literally means "public utility" or "for the benefit of everybody"'(Housing Europe, 2010). There are many European examples of successful and popular social housing from which we in the UK can readily learn. Research being developed by The URBED Trust for Shelter on *International Examples of Affordable*

Housing reveals a range of clear strategies that local authorities can use to lead sustainable and affordable development (URBED Trust, 2018). Here Vienna 'leads the way in keeping housing costs down through mixed rental housing' (for example Aspern Seestadt and Norbahnof).

The recent UK policy shift towards public rented housing opened up by the 2017 *Housing White Paper* and new emphasis on design in the revised National Planning Policy Framework (NPPF, 2018, pp. 38–39) offers a real opportunity to start from first principles to develop a body of knowledge on the development and promotion of design value, particularly in terms of place making and wellbeing (UK Gov, 2017). Place is focused on 'planning, design and upkeep of the built environment' not on its ongoing management, for example policing (Cabinet Office Strategy Unit, 2009) a distinction that is potentially unhelpful as design manifests value in the long term.

Whilst architectural claims to being the champions of design value in housing may be contested, there is no other group that has such a vested interest in this area. This paper argues that the marginalisation of architectural activities (architects and planners come together under this nomenclature in ONS SIC code 71.11) from the production of housing has contributed to the marginalisation of design value from debates around affordability and housing provision, yet affordability is so much more than just a question of finance. A growing body of evidence is starting to show the complex links between identity, sustainability, health and wellbeing (Grzeskowiak et al., 2006; Guite et al., 2006; Jones and Grigoriou, 2014; Watson, 2017). This is the concern of 'design value', a nascent area that brings together a complexity of value systems in the pursuit of defining 'what works'. Recent changes to the terminology of the *Treasury Green Book* - the basis of government decision making - from 'economic' value to 'socio-economic' value (UKGov, 2018) is a hopeful sign that the government is taking a more holistic approach to value.

This paper is built on the premise that 'design' is not just about making buildings. It is also about designing processes, experiences and indeed transformations (Samuel, 2018). According to the UK Department of Culture Media and Sport Architects are SOC 2431 with 'architectural activities' covered by Standard Industry Classification SIC 71.11 (DCMS, 2016). 'Architecture' includes 'Architects, Town Planning Officers, chartered architectural technologists and Architecture and Town Planning technicians (DCMS, 2015), each struggling to define its purpose and value in different ways (Tavistock Institute, 1966, p. 14). Lack of clarity about professional roles and their value (Samuel, 2018) has impacted on the marginalisation of 'architecture' professionals and 'design value' from housing production and

that great care must be taken in developing teams capable of delivering design value in public rented housing. The 2017 Grenfell tragedy provides vivid evidence of collective failure across the housing industry to deliver the barest essentials of health and safety, let alone quality. The marginalisation of the Royal Institute of British Architects from the Inquiry seems significant in this context (Braidwood, 2017). This paper provides a brief historical account of the marginalisation of architects (and design value) from housing delivery and research - covering key issues such as procurement, building contracts, fees, post occupancy evaluation and the dissolution of local authority housing departments - as a precursor to developing a series of policy recommendations for the promotion of design value in public rented housing going forward.

Historical account

Housing, like architecture, is a field with very little institutional memory, meaning it has failed to build on past innovations. A brief review of the historical context of UK housing production and design from an architectural point of view is offered to understand how the current neglect of design value has come about and how it might be averted in future. The focus in this section is on the communities of practice involved in housing research as these are critical to the delivery of design value. Research in this area is extremely scant, due to the dysfunctional and limited nature of architectural research (Coucill and Samuel, 2013; Samuel et al., 2013). The evidence below has been collected largely through action research undertaken via three Arts and Humanities Research Council funded projects: Home Improvements, Knowledge Exchange in the Creative Economy (2012-14); the Cultural Value of Architecture in Homes and Neighbourhoods (2015) and, lastly, Evidencing and Communicating the Value of Architects (2015-17).

A brief history of social housing

Social housing had its origins in the almshouses and tenant housing built by charitable institutions such as monasteries and churches as well as some landowners. This was also an area in which women had been instrumental, ‘social welfare’ and ‘housing management’ work having long been done on a voluntary basis by such women as Octavia Hill (Darling and Whitworth, 2007, p. 139), but this was made more difficult in the drive towards professionalization, prescription and legal redress.

Ebenezer Howard’s garden city concept *Tomorrow A Peaceful Path to Real reform* (1898) used at Welwyn Garden City and Bournville near Birmingham (Bailey and Bryson, 2006)

provides a model for affordable housing provision that is equally relevant today. In London the Peabody Trust was founded in 1862 with its first estate opening in Spitalfields in 1864. An early example, the Blackfriars Road Estate, was full of modern amenities with flats arranged around staircases, a resident superintendent and several porters as well as the introduction of a rubbish chute (Peabody, 2017). Such amenities, ensuring the successful upkeep of a community, have always been integral to the success of housing innovations.

A legislative framework put in place in the name of public health - building regulations - arrived on the scene in the latter part of the nineteenth century, contributing to a fall in urban death rates while adding considerable complication to the building processes, for example through the introduction of environmental services (Powell, 2004, p. 73) and a need for new kinds of expertise. The reluctance of certain architects to engage with new codes and standards during the Victorian era furnished new types of professionals such as surveyors with an opportunity to develop technical, financial and management expertise in the delivery of housing.

The rapid growth of urban populations meant that urban housing needed to become more dense if people were to have good access to limited transportation systems and work. The Post World War II reconstruction provided an opportunity to rethink mass housing using the models developed on the continent by architects such as Le Corbusier. However mass housing in the UK was very often done on the cheap missing out the social infrastructure that was so key to his vision and ignoring his key precept that the people who lived in such experiments needed to buy into the idea of the blocks (Samuel, 2004, pp. 149–152). While Atelier Le Corbusier's prototype social mass housing block the Unité in Marseilles - 337 well sound insulated units over 12 floors, each with its own 'vertical garden' (completed 1952) has had its ups and downs – largely due to the way it was run – it remains a positive exemplar of high density, low cost housing to this day

Local authority housing departments

In the post war years of reconstruction, the large majority of architects were 'salaried' in public service in organisations such as the London County Council (LCC) producing estates (for example Roehampton) on the Le Corbusier model (Lang, 2017). These architects were pressurized to build faster, taller and cheaper by their government paymasters with little consideration of the ongoing upkeep of the buildings in use. The large scale of government contracts at that time made it worthwhile for manufacturers of construction systems to tool up factories for the production of components such as the concrete panel systems that were subsequently used on 'council housing' across the UK. The 1968 Ronan Point disaster in

which a gas explosion caused one side of block to collapse provided vivid evidence of the need to give time for the adequate testing of such systems.

Use of these innovative technologies, as well as problematic layouts such as the Radburn plan (with access to front doors on foot via insecure green space), gave Council housing a distinctive look. The appearance of housing can have a major impact on inhabitants' wellbeing and sense of identity and can cause stigma (Cooper-Marcuse and Sarkissian, 1986). Jane Darke's remarkable 1980s study of the highly paternalistic way in which professionals made assumptions about the needs of inhabitants brought into relief the need for real and meaningful consultations with communities on the development of their homes (Darke, 1984a, 1984b, 1984c).

Oscar Newman's 1973 book *Defensible Space* sought to establish a relationship between built form and crime, one that has since been upheld (Armitage, 2013). The blame for failed estates such as Broadwater Farm in London, known for 1985 riot caused by the death of resident Cynthia Jarrett, at which PC Keith Blakelock was killed, is clearly shared. They were built too fast without the resources to provide the infrastructure and quality key to the success of mass housing. At Broadwater Farm cost cutting exercises meant that the shops, pub, launderette and doctors and dentists that were planned for its success were not provided (Dillon and Fanning, 2011, p. 1), contributing to its social breakdown. This happened at a time when resources for social housing were being cut radically with local government architecture and housing departments decimated as the aftermath of Margaret Thatcher's Right to Buy Policy. According to Chartered Institute of Housing's UK housing review, the government sold 1.34 million council homes across Britain between 1980 and 1990 and a major decrease in council housing completions. Overall housing completions fell from 251,820 in 1979 to 202,500 in 1990 (Duxbury, 2013). Whilst right to buy has been made easier for tenants in England it has been abolished in both Wales and Scotland (Welsh Gov, 2018). In some cases local authorities, whose 'limits on doing things for commercial purpose' are set out in the Localism Act (UK Gov, 2011), have set up spin out companies to escape from the strictures of Right to Buy (Stone, 2017).

The Greater London Council closed for business in 1986 bringing to an end 'the heroic period' of council housing (Hinchcliffe, 2016). During this period architect and planning departments across government and local authorities were slashed, meaning that they had to regroup themselves in the private sector. A mandatory scale in which architects fees were based on a percentage of the final project cost had been in place for Royal Institute of British Architect (RIBA) members up until 1982 (Dobson, 2013), a disincentive for architects to save money for

their clients or to have to demonstrate the value of what they did. The fee scale continued in a suggested form until 2003 when it was abolished by the EU competitions directive, on the basis that it encouraged collusion (Brindley, 2012) and unfair trading despite the fact that architects were consistently found to be paid less than other comparable professions (UK Gov, 2001). The problem was that the fees controls were taken away before the profession was able to articulate its services in an effective way. After the dismantling of the fee scale architects undercut each other on price, reducing their ability to lead the team in the process and finding themselves managed by others (Saxon, 2006, p. 1). A nadir was reached in the 2012 recession with the development of zero fees contracts (Rogers and Hopkirk, 2012). In the context of plummeting fees research on 'what works', including the development of post occupancy studies, in architectural practice, planning and urban design went to the back burner.

Local government in the UK is made up of around 411 'local authorities', otherwise known as 'local councils'. Types of authority include city and county councils, and district or borough councils (Kenny and Coin, 2016, p. 4). Cuts to local authorities have been fiercer than in any other area of government (Kenny and Coin, 2016). Lack of spatial planning capacity in Local Authorities (RTPI, 2018) has impacted negatively on housing as joined up strategy is needed vis a vis land supply, the single most thorny question underpinning housing supply. Ways in which local authorities have tried to compensate for lack of in-house competence include partnering with housing providers and engagement with the new and growing organisation Public Practice which provides short term expertise as necessary, but these are quick fixes for strategic investment in local authority planning departments. Public Practice 'is placing a new generation of planners within local government to shape places for the public good' (Public Practice, 2-18) and is an important development as it shows that talented young people are growing increasingly interested in public sector but only, as Mariana Mazzucato puts it 'if they see that such choices are valuable and valued (Mazzucato, 2018, p. 277).

The relationship between architecture and the social sciences

The late 1960s and early 70s had been a heyday of collaborative research between architects and social scientists on the impact of new housing models. It was during this period that the positive wellbeing impact of involving people in the design of their own homes was proved fairly unequivocally (Halpern, 1995). Evidence Based Design developed in the early 1970s brought into clear relief the radically different conceptions of research rigour and what constitutes good enough knowledge in the social sciences and architecture (Morris and

Mogey, 1965, p. xiii; Canter, 1977, p. 38). In the 1970s architects and planners were hungry for data on the interface between people and buildings (Gutman and Gutman, 1972, p.179; Reizenstein, 1975, p. 28), but only it seemed if the results showed architects in a positive light (Broady, 1972, p. 179). It was at this time that architects were accused of 'determinism', for exaggerating their impact (Broady, 1968, pp. 7–14; Lipman, 1975, chapters 2-4; Malpass, 1968, pp. viii–ix, 1-33; Lee, 1971; Malpass, 1975; Mercer, 1975; Halpern, 1995, p. 226; Richards, 2012) - a claim that caused great damage to the research culture of the profession, stunting its emergent knowledge base on the relationship between people and the environment (Darke, 1983, pp. 7–9) (Macmillan, 2006, p. 258), in other words design value. During this period architects dropped the thread of environment-behaviour research leaving it largely to environmental psychologists and others to unravel (Gifford, 1997). At the same time social scientists took leadership of the field of housing research largely disengaging themselves from discussions of the fabric of building, however, as Halpern has observed, 'there is no reason why links between the environment and behavior should be seen as deterministic or exclusive of other influences' (Halpern, 1995, p. 114).

The rise of Volume House Building

As the infrastructure of public rental housing was dismantled responsibility for fulfilling demand was transferred to the private sector, more for political reasons than any growth in productivity or quality (Mazzucato, 2018). In 1960 the top ten housing firms had a share of 9% of the market. By 2015 this had increased to 47%. Over 10,000 small and medium (SME) housebuilders were building 57 per cent of all housing in 1980. 2,800 firms were delivering just 27 per cent of all output in 2014 (Archer and Cole, 2016, p. i). The Volume House Builders (VHBs) have developed a model of housing production that is largely driven by the need to generate shareholder value. This has many ramifications for design value - the form of the public realm in VHB developments is, for example, largely dictated by the turning circles of construction machinery, not by the needs of communities. The design of the homes themselves are also dictated by the systems that bring them into production and are pared down to the minimum that can be sold –garages are often more symbolic than functional as they are often too small to fit the average car (http://www.spacetopark.org/). VHBs are reluctant to change their models or to offer more choice as this would incur costs. They are by their very nature conservative and financially risk averse - selling what they know sells, very often in pseudo vernacular styles. An increasing body of research is showing that people do care about the design of homes and that they are not happy with current outputs (Airey et al., 2018, p.43). Risks associated with environmental damage, dysfunctional communities and

health (VHB developments are often built around a car culture on sites with limited public transportation) tend to be passed down the line, often back to the local authorities.

The *Building for Life* guidance has done much to push up the quality of VHBs while maintaining their buy in (Birkbeck and Kruczkowski, 2012), but could go a great deal further in fostering design value, particularly in terms of sustainability, its counterpart *Built for Life* 'designed to give the home buyer confidence that important design features have been checked during the planning process'. The VHBs were quick to shrug off the additional constraints of the Code for Sustainable Homes as soon as it was withdrawn (Department for Communities and Local Government, 2006), suggesting that they are unlikely to engage with sustainable design value unless compelled through regulation. Lack of interest in forms of design value other than financial may be linked to the status of design expertise within their organisations. Although there are no reliable statistics it seems that architects are associated with as little as 5% of new housing – a third of the largest housebuilders don't employ their own architects (Marrs, 2015).

Sustainability and standards

Standards and codes tend to focus on environmental conditions not on design quality, partly because, with a few notable exceptions, architects and designers have neglected their role in their creation (Imrie and Street, 2009).Whilst it has long been known that, for example, single aspect north facing homes can have a deleterious effect on health and wellbeing, they continue to be produced. Basic precepts such as the importance of cross ventilation are ignored resulting in artificially ventilated and lit double loaded corridors with no consideration of environment or community, condensation, asthma or mildew. 'Long life, loose fit, low energy' a phrase coined by RIBA president Alex Gordon (Gordon, 1972) is increasingly being realised as the way forward but such considerations, arguably the stuff of basic good construction practice, are routinely ignored. There are many reports on what constitutes good design for vulnerable communities, for example the Happi report on design for older people (HAPPI, 2012), (Porteus and Park, 2018) and *Non-Mainstream Housing Design Guidance* (HCA, 2012) , but their usage requires opt in from client bodies who understand the long term value of such considerations. That there is a 'hidden crisis' when it comes to the provision of inclusive homes has been underlined by a recent report by the Equality and Human Rights Commission (Equality and Human Rights Commission, 2018). There is however no robust evidence base of need and evaluation is needed to establish whether special provisions are being used, or how they might be improved (this comes back to the general issue of failure to do Post Occupancy Evaluation). This has made it difficult to push back against private sector

pressures.

One way to unpack the real cost of projects over a long period is life-cycle analysis (LCA) in terms of both energy and social value (UN Environment, 2017). This requires a systematic set of procedures for gathering and assessing the inputs and outputs of materials in terms of energy and the cost to society, together with the environmental impacts that are directly attributable to the material during the life cycle of building, including disposal. A rarely discussed aspect of housing is its design life. Existing and new houses will have to last for many hundreds of years given the current rate of supply (Meikle and Connaughton, 1994) but even the most sustainable of developments, for example BedZed are designed with a 150 year specification. BRE Environmental profiles are only based on a design life of 60 years (BRE, 2018) and most housing is built for a lifespan of half that period. Failure to consider the longevity of buildings is storing up problems for future generations. A lifespan requirement is needed.

Agreed standard measurements are needed, for example of density as this has a profound impact on design outcomes and also on financial models. It is surely desirable that all homes are designed to be fully inclusive over the lifetime of their owners, but this has major implications for space and cost (Imrie, 2005). It should be noted that the provision of spaces for equality is as much about management as it is about the building (Simpson, 2018). Standards need to apply not only to homes but also to the neighbourhoods which they sit in as a growing body of research is making the connection between housing, placemaking and health very clear (Design Council, 2018a). Most of all agreed targets for affordable housing need to be set and monitored.

London, where high real estate prices afford greater consideration of design, has benefitted from documents the London Housing Design Guide and a requirement for design codes in every authority and the implementation of design review panels, but design quality in the rest of the UK is patchy due to a lack of regulation.

Paragraph 118 of the National Planning Policy Framework stipulates that ‘When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity’ and offers a series of principles to be followed. However such laudable aims require personnel to make sure that they are enacted at a time when local authority sustainability officers are being laid off due to government cut backs.

Procurement

At a time when the idea of the ‘expert client’ had not yet come to the fore, the architect was seen as the primary source of advice (Green, 2011, p. 10). This was a situation that was to radically change as efficiency and monetary value were to become the dominant discourse as exemplified by the Egan Report of 1998. At the same time a move from ‘traditional’ building contracts in which the architect leads the team to ‘design and build’ contracts led by the contractor means that responsibility for delivering quality is passed from hand to hand. As clients became more demanding during the 1980s the uptake of ‘Design and Build’ contracts became more widespread. Indeed by 2012 50% of private contracts and 40% of public contracts were procured this way (RIBA and Colander, 2014). Here the architect is novated by the Employer to the Contractor –with the agreement of the Contractor and the Architect or responsibility for design is passed to often low status ‘design managers’ within the contractor team. The resultant ‘design errors are a symptom of dysfunctional organisational and managerial practices that prevail within the construction industry. They significantly contribute to cost and schedule growth, and rework’ (Love et al., 2011, p. 685). A high profile example of the costs caused by design errors in the private sector is Fitzroy Place in London, a project that resulted in £89m of losses for the contractor McAlpine attributed in part to “risk management during tendering and the management of our design responsibilities and changes” (Withers and Gardiner, 2015). Whether ‘design errors’ caused the Grenfell tragedy remains to be seen.

Most large clients including local authorities and housing associations have ‘frameworks’, typically reviewed every four years, which include a select corpus of practices vetted long in advance, ready to jump at the opportunity of a new project. The idea of frameworks is to save time and effort to both clients and service providers as the only competition is to get onto the framework, separate time consuming competitions are not needed for each project. It is however really important for an organization to have different frameworks for different scales of project, in this way offering opportunities to small and emerging businesses. Large frameworks can cause considerable damage as their requirements are generic - the bar is set high for any eventuality – meaning that they require practices to have unrealistic amounts of experience, finance and business capability in an area before they are able to bid for work (Menteth, 2015). Large scale frameworks exclude new and hungry practices, providing clients with very limited choice, squashing innovation and adding to the homogeneity of our environment (diversity impacts on wellbeing, Steemers and Steane, 2004). The London based developer Pocket Living rejects the use of frameworks (Edwards, 2016) as they know it makes

sense to call upon emerging practices to drive innovation. Pocket tries to ensure achieves its desired outcome by using a bespoke appointment contract with a highly detailed brief and a standard specification – something that is more easy to achieve if you are repeatedly delivering the same kinds of spaces (Edwards, 2017).

Perhaps the most serious victim of a short-termist profit driven view of design value has been organisational learning on what works. Although the need for Post Occupancy Evaluation (POE) and its sister Building Performance Evaluation, as generators of evidence on the performance of the built environment, was fully recognized in the early 1960s, as few as 3% of architects undertake regular POE despite the serious benefits that it can bring (Hay et al., 2017). However, because of the paucity of Post Occupancy Evaluation, very little is known about what design for wellbeing in the context of contemporary social housing might actually look like. The NPPF stresses the need to 'test' design quality against desired outcomes (NPPF, 2018, p. 38). Increasingly data will be needed for the improvement of services and the management of risk and for the development of performance based contracts that are currently being used by some of the most innovative global clients. Social Return on Investment (SROI), as championed by HACT and NEF, is becoming an increasingly important tool for evidencing design value and wellbeing. Feedback will in turn enhance the process of standardisation, important for driving down costs and driving up quality.

Design value

The 2014 AHRC Cultural Value of Architecture in Homes and Neighbourhoods made a comprehensive review of the literature of design value since 2000 most notably 'grey literature' including many of the documents produced by the Commission for Architecture and the Built Environment (CABE), subsequently the subject of a separate research project at University College London (Carmona and Natajaran, 2016). Despite there being a general consensus on the key role of design value in delivering wellbeing the review revealed a remarkable paucity of robust evidence in this area caused in part by a lack of agreed definitions and too great an emphasis on the finished product, not the process (Samuel et al., 2014). The CVoA project revealed three key overview documents which are particularly helpful for the demonstration of design value, but which are in urgent need of update. These are:

1. David Halpern's book Mental Health and the Built Environment (1995)
2. The Bibliography of Design Value (Carmona, 2001)

3. Morris Hargreaves McIntyre's Literature Review of the Economic, Environmental and Social Impact of Design commissioned by the Scottish Executive (Scottish Executive, 2006)

Sebastian MacMillan's review document 'Added Value of Good Design' also provides important context (Macmillan, 2006). Although not a literature review, *Good Foundations* prepared by the New Economics Foundation was found to be an extremely holistic and useful documents (NEF 2010). NEF believe that the underlying problem within this wealth of guidance is a lack of an overall organising framework or vision (NEF 2010 p.31) certainly in England. In Scotland design quality has remained high on the agenda (see for example Scotland, 2017; Scott and McGregor, 2012). It is worth reflecting on historic attempts at defining design value such as the Design Quality Indicators (Construction Industry Council, 1999; Gann et al., 2003). Rather than start again on creating new toolkits for demonstrating design value it would perhaps be better to repurpose on existing initiatives such as the DQI, capitalizing on existing learning in the process.

The AHRC funded Evidencing and Communicating the Value of Architects project built on the framework offered by the CVoA project (loosely social, cultural and economic value) to develop a literature review of design value across a series of refereed journals (Samuel, 2018). The findings suggest that there is a growing body of tangential but related evidence, for example on the relationship between people and the natural environment, that could be drawn upon for the evidencing of design value (Samuel, 2018). A further literature review of design value is currently underway within CACHE, this time looking at it from an interdisciplinary perspective. This process would be so much more fruitful if only POE was the industry norm (Hay et al., 2017).

Innovation

At the same time housing innovation plays a key role in the push for construction innovation (UK Gov, 2013), particularly digital construction (UK Gov, 2015). Advances in Cross Laminated Timber (CLT) and modular construction and the delivery of intelligent homes that respond to user needs, sometimes even replacing the traditional delivery of care services, are of particular relevance to the housing sector and will require new funding models. Modular housing is reducing in price and cheaper volumetric off site construction modules from China (see for example WeLink, 2018) seem set to make the substantial construction sector trade deficit (ONS, 2017) even worse. Leadership is needed in developing standardized modules as housing providers are nervous about building schemes around modules that are only

available from one company, in case that company folds leaving the provider exposed (Rickard, 2018). Providers such as Swan Housing association are setting up their own factories (Swan Housing, 2018) as are new entrants to the market such as the insurance company Legal and General (Legal & General, 2018). It is hard to see how joined up long term thinking will be achieved in these overlapping areas without the retooling of 21st century local authority housing departments. Investment is required at least in the short term.

The development of housing is of course key to wider planning strategy and to wider research agenda. As Local Authority planning departments have suffered cutbacks universities and other research institutions have become increasingly involved in the developing government agendas around SMART and sustainable cities (UK Gov, 2015), as well as the place related aspects of health (UKGov, 2016), the creative industries and innovation (UKGov, 2017) distributed ways of working which mean that old divisions of home and work are being eroded (Holliss, 2015). These are all interdisciplinary areas set to be the focus of research funding opportunities in the near future and are core to UK Industrial Strategy and the £4.7 billion of Industrial Strategy Challenge Funding due to be released over the next four years (UKGov, 2017).

Financial models

Section 106 agreements, a mechanism for mitigating the effect of development proposals, came in with the 1990 Town and Country Planning Act (UK Gov, 1990). They allow developers to enter into an 'obligation' about the way that land might be used, often in the form of a requirement for affordable homes. Yet 'The system has spawned a whole industry of S106 avoidance' writes Oliver Wainwright in the *Guardian* (Wainwright, 2014) in which powerful developers with strong technical and legal skills dominate. Indeed there are examples of hedge funds acquiring and driving up the prices of Section 106 (Barratt, 2017). The introduction of the Community Infrastructure Levy has the potential to 'restrict supply through S106 further' (Brownhill et al., 2015). The National Planning Policy Framework in 2012 and the 2011 Localism Act give greater local flexibility.

In response to the lack of social housing there has been growth in the Private Rental Sector (PRS) whose offerings are widely recognized as inadequate both in terms of quality and tenure (Hill-Dixon and Jamieson, 2017) (Hills, 2007) and health (Barton and Kenny, 2018). There has been a proliferation of types of tenure and home ownership in response to the need for affordable homes. Local authorities have the option to be design the forms of tenure that they chose to offer. In the case of Hafer Road in London designed by Peter Barber Architects,

social housing is fully integrated into an existing neighbourhood of private and rental properties (Heathcote, 2018). 'Shared Ownership Staircasing' is becoming increasingly common (Peabody, 2018). Renting and buying has a very different flavour in the context of a Community Land Trust that controls tenure and value. In some case Self Build is an affordable option, building on the Dutch model of plot passports that encourage customization but contain development, Croydon and Lewisham councils are exploring ways of facilitating self-build, often with the help of new kinds of professionals such as 'process advisers', 'buyer coaches' and 'building coaches', many of them architects by another name (Brown, 2018). Co-living with shared communal facilities is another model (The Collective, 2018) as is co-housing (Chatterton, 2013). Either way there is increased recognition that untying the housing knot is a design problem with which architects should be engaged (Graham, 2017)

Policy options

Morphet and Clifford's research shows just how creative Local Authorities can be if they are given the chance. Positive change is possible even in the extremely constrained UK context, but a major scaling up of activity is needed even to keep up with the growth in current demand. The vision and the political will to bring about unified action are urgently needed. Mazzucato questions rightly why 'public-sector activities are ignored in GDP accounting' and 'the public sector is always described as slow, boring, bureaucratic and unproductive'(Mazzucato, 2018, p. 18). The public sector 'can, and does, step in where private finance fears to tread' (p.193), no more so than in social housing.

Currently very large amounts of time, energy and money are spent on compensating for poorly designed buildings and their impact on health, wellbeing and the environment. The recently published report *Building a Safer Future* (Hackitt, 2018) recommends thinking of buildings as systems and to focus on outcomes (not rules) and improved skills for delivery. These are equally important for the delivery of social housing which needs to be considered as part of the wider provision for health and education. On 25 April 2018 Homes England and the Design Council signed a MoU committing both parties 'to promote quality placemaking and to contribute to the evidence that high-quality design in housing developments creates long-term benefits for society and the economy' (Design Council, 2018b). This event was accompanied by a high profile event hosted by the newly formed Ministry of Homes, Communities and Local Government (MHCLG) *Design Conference: Achieving Well Designed Places* in London (apparently to be rolled out in other parts of the UK). Speeches by the Minister for Housing

and Secretary of State for Planning confirm that design is firmly on the government agenda. How this will unfold remains to be seen.

A series of policy recommendations are therefore offered based on this brief examination of the place of design value and its champions in the history of housing delivery in the UK:

Foster design and delivery innovation in Local Authority housing teams

Local authorities are well positioned to lead on the development of public rented housing. They have traditionally been left to provide housing that is not viable within the private sector, using it to achieve other kinds of strategic aims. A recent comprehensive review of the way in which local authorities currently provide housing by Morphet and Clifford shows that local authorities have adopted a wide variety of mechanisms in order to keep delivering these homes and note the sense of 'pride' amongst local authorities for their proactive creativity in a period of austerity. A large scale questionnaire survey of local authorities conducted in summer 2017 found that '65% of authorities reported being directly engaged in housing delivery themselves' (including 'house building through housing companies and those still building using the Housing Revenue Account (HRA))and only 9% reporting no activity at all (Morphet and Clifford, 2017, p. 4). The authors point to a growing momentum with 30 local housing companies being created in 2017 alone. Croydon Council in London has, for example, set up its own housing development company, Brick by Brick, and other local authorities are thinking more creatively about how best to use public funds to address the desperate shortage of affordable and appropriate housing in the UK. Firm targets need to be set for the provision of affordable and inclusive housing (Equality and Human Rights Commission, 2018). This requires building up new teams with a skillset in delivering design value building on the lessons described above.

Local authority teams need the technical knowledge to be able to push back against developer teams who claim that projects will cease to be viable if onerous Section 106 provisions are demanded. A 2014 Joseph Rowntree report has shown the positive impact of having 'specialised viability officers or teams' in planning departments as well as the importance of providing training in this area to officers (Brownhill et al., 2015, p. 5). Good density can be achieved through airspace development, the sensitive introduction of new buildings in underutilised space but these requires expertise and negotiation (HTA, 2016). Integration of governance of transport and spatial planning can have major positive impact on growth and wellbeing (OECD, 2015, p. 11). There is scope for gaining greater value from Section 106

agreements and for using procurement much more strategically for the generation of social value. Social Value outcomes frameworks rarely attend to the wellbeing potential of design (see for example Croydon, 2016). Local authorities need to fight back with sophisticated models of Value Capture that can project change over time (for example when considering whether to put a motorway in a tunnel in order to utilize space overhead for housing) and take account many different types of value. For this to happen leadership is needed within local authorities (RTPI, 2018).

Post Occupancy Evaluation

Make POE a requirement of all publicly procured buildings. The 2012 Social Value Act requires the demonstration of social value but its level of implementation during the procurement process is extremely variable (Cabinet Office, 2015; Croydon, 2016). The demonstration of social value should be a requirement of every housing project, contributing to a wider corpus of knowledge on what works. Guidance is needed on the demonstration of social value - Social Return on Investment has much to offer in this area (Watson and Whitley, 2016). Strategy is needed to develop the financial proxies to make the monetizing of impact more meaningful and accurate. In order to promoted the value of good design it is necessary to develop methodologies for the measurement of things that are not easily evaluated (Trowers & Hamlins, 2017).

Sustainability

Work on social value needs to be developed hand in hand with the drive for sustainability. Clear guidance is needed on the development of sustainable housing, perhaps through the reintroduction of the Code for Sustainable Homes, well received by experts in the field (McManus et al., 2010) and was very much about saving money in the long term. Local authorities are in urgent need of legislation that enables them to push back against planning applications for poor quality housing. Home Performance Labelling is an option in the private sector, but it is arguable that all publicly procured homes should not only be designed to reduce running costs (and therefore fuel poverty) but also in anticipation of climate change. Climate change projections are now readily available. If Local Authorities fail to consider temperature projections in the design of new homes, they are at risk of accusations of neglect.

Public participation

The positive impact of public participation in the development of housing and neighbourhoods is now well known. Digital technology and locative media (mobile phones) offer much

opportunity to develop feedback loops with building users that need to be built into the user experience of housing before and during construction as well as in use. Investment is needed in the digital social infrastructure of housing as well real world infrastructure (Tierney, 2013). State regeneration programmes have been dogged by accusations of social cleansing.

Off-site construction and related research and development programme

The development and standardisation of off-site construction of housing needs to be a policy priority (Construction Industry Council, 2013). It allows housing to be built faster, cheaper and to a higher standard, but requires large contracts to make the tooling up of facilities and the development of prototypes more worthwhile. This cannot happen in isolation but needs to be part of an integrated approach to delivery and research and development.

Procurement for innovation

Existing procurement systems, frameworks and contracts need to be reviewed in the light of their impact on the diversity of the built environment, innovation, organisational learning and long-term design value. Consideration should be given to the development of performance related procurement and forms of contract that allow for the development of team learning over time, in which the delivery of design value in its fullest sense is prioritised

References

Airey, J., Scruton, R., Wales, R., 2018. Building More Building Beautiful. Policy Exchange.

Archer, T., Cole, I., 2016. Profits before Volume? Major housebuilders and the crisis of housing supply. Sheffield Hallam University Centre for Regional Economic and Social Research.

Armitage, R., 2013. Crime Prevention Through housing Design: Policy and Practice. Palgrave Macmillan, Basingstoke.

Bailey, A.R., Bryson, J.R., 2006. Stories of suburbia (Bournville, UK): from planning to people tales. Social and Cultural Geography 7, 179–198.

Barratt, L., n.d. Giant equity investory to “compete head on” with associations for Section 106. Inside Housing.

Barton, C., Kenny, C., 2018. Health in Private-Rented Housing.

Birkbeck, D., Kruczkowski, 2012. Building for Life 12: The Signs of a Good Place to Live.

Boyko, C.T., Couton, C., Sabbagh Gomez, A., Cooper, R., 2017. The Little Book of WELLBEING. Lancaster University, Imagination.

Braidwood, E., n.d. Analysis: Grenfell tragedy highlights architects’ marginalisation [WWW Document]. Architects Journal. URL https://www.architectsjournal.co.uk/news/analysis-grenfell-tragedy-highlights-architects-marginalisation/10022066.article (accessed 8.1.17).

BRE, 2018. Environmental profiles [WWW Document]. URL https://www.bre.co.uk/Environmental_Profiles.html

Brindley, R., 2012. Why doesn’t the RIBA provide fee scales? [WWW Document]. URL http://www.bdonline.co.uk/why-doesn%E2%80%99t-the-riba-provide-fee-scales?/5041284.article

Broady, M., 1972. Social Theory in architectural design, in: Gutman, R. (Ed.), People and Buildings. Basic Books, New York, p. 179.

Broady, M., 1968. Planning for People. National Council for Social Service, 26 Bedford Square, London WC1.

Brown, S., 2018. Self Build.

Brownhill, S., Cho, Y., Keivani, R., Nase, I., Downing, L., Valler, D., Whitehouse, N., Bernstock, P., 2015. Rethinking Planning Obligations: Balancing Housing Numbers and Affordability. Joseph Rowntree Foundation.

CABE, 2006. The Cost of Bad Design.

Cabinet Office, 2015. Social Value Act Review.

Cabinet Office Strategy Unit, 2009. Quality of Place: Improving the Planning and Design of the Built Environment.

Canter, D., 1977. Priorities in building evaluation: some methodological considerations. Journal of Architectural Research 6, 38–40.

Carmona, M., 2001. Bibliography of Design Value. CABE.

Carmona, M., Natajaran, L., 2016. Design Governance: The CABE Experiment. Routledge, London.

Chatterton, P., n.d. Towards an Agenda for Post Carbon Cities: Lessons from Lilac, the UK's first Ecological, Affordable, Cohousing Community. International Journal of Urban and Regional Research 37, 1654–74.

Construction Industry Council, 2013. Off Site Housing Report.

Construction Industry Council, 1999. Design Quality Indicotor.

Cooper-Marcuse, C., Sarkissian, W., 1986. Housing as if people mattered. University of California Press, Berkeley.

Coucill, L., Samuel, F., 2013. Home Improvements Housing Research in Practice: Methodology and Data.

Croydon, 2016. Inspiring and Creating Social Value in Corydon: A Social Value Toolkit for Commissioners.

Darke, J., 1984a. Architects and user requirements in public-sector housing: 1. Architects' assumptions about the users'. Environment and Planning B: Planning and Design 11, 398–404.

Darke, J., 1984b. “Architects and user requirements in public-sector housing: 2. The sources for architects” assumptions, Environment and Planning B: Planning and Design. Environment and Planning B 11, 405–16.

Darke, J., 1984c. Architects and user requirements in public-sector housing: 3 Towards an adequate understanding of user requirements in housing. Environment and Planning B: Planning and Design 11, 417–33.

Darke, J., 1983. The Design of Public Housing: Architects’ Intentions and Users’ Reaction. University of Sheffield.

Darling, E., Whitworth, L., 2007. Women and the Making of Built Space in England, 1870-1950. Ashgate Publishing, Ltd.

DCMS, 2015a. Creative Industries Economic Estimates.

DCMS, 2015b. Creative Industries Economic Estimates.

Department for Communities and Local Government, 2006. Code for Sustainable Homes: Guidance [WWW Document]. Planning Portal. URL http://www.planningportal.gov.uk/buildingregulations/greenerbuildings/sustainablehomes/technicalguide (accessed 2.10.14).

Design Council, 2018a. Healthy Placemaking. Design Council/Social Change UK, London.

Design Council, 2018b.

Dillon, D., Fanning, B., 2011. Lessons for the Big Society: Planning, Regeneration adn the Politics of Community Participation. Ashgate, Farnham.

Dobson, A., 2013. RIBA Fee Caluculation, Nogotiation and Management for Architects. RIBA, London.

Edwards, R., 2017. Pocket Living 8 February.

Edwards, R., 2016. West Green Place Community Centre [WWW Document]. Pocket Living. URL https://www.pocketliving.com/competitions/competition/id/west-green-place

Equality and Human Rights Commission, 2018. Housing and disabled people: Britain’s hidden crisis. Equality and Human Rights Commission, London.

Gann, D., Salter, A., Whyte, J., 2003. Design Quality Indicator as a tool for thinking. Building Research & Information 31, 318–333. https://doi.org/10.1080/0961321032000107564

Gifford, R., 1997. Environmental psychology: principles and practice. Allyn & Bacon, Boston.

Gordon, A., 1972. Designing for survival: the President introduces his long life/loose fit/low energy study. RIBA Journal 79, 374–376.

Graham, P., 2017. Home's for people! It's possible. RIBA Journal.

Green, S.D., 2011. Making Sense of Construction Improvement: A Critical Review, 1 edition. ed. Wiley-Blackwell, Chichester, West Sussex, UK ; Ames, Iowa.

Grzeskowiak, S., Sirgy, M.J., Lee, D.-J., Claiborne, C.B., 2006. Housing Well-Being: Developing and Validating a Measure. Soc Indic Res 79, 503–541. https://doi.org/10.1007/s11205-005-5667-4

Guite, H.F., Clark, C., Ackrill, G., 2006. The impact of the physical and urban environment on mental well-being. Public Health 120, 1117–1126. https://doi.org/10.1016/j.puhe.2006.10.005

Gutman, R., Gutman, R., 1972. The questions architects ask, in: People and Buildings. Basic Books, New York, p. 179.

Hackitt, J., 2018. Building a Safer Future: Independent Review of Building Regulations and Fire Safety Final Report. UK Gov.

Halpern, D., 1995. Mental health and the built environment: more than bricks and mortar? Taylor & Francis, London; Bristol, PA.

HAPPI, 2012. HAPPI 2 - Housing our Ageing Population: Plan for Implementation.

Hay, R., Bradbury, S., Dixon, D., Martindale, K., Samuel, F., Tait, A., 2017. Building Knowledg: Pathways to POE. RIBA/University of Reading.

HCA, 2012. Non-mainstream housing design guidance.

Heathcote, E., 2018. Lessons from social housing in London's Hafer Road. Financial Times.

Hill-Dixon, A., Jamieson, W., 2017. A Reviewof the Private Rented Sector in England: Vulnerability and Innovation. Young Foundation.

Hills, J., 2007. Ends and Means: The future roles of social housing in England. Centre for Analysis of Social Exclusion.

Hinchcliffe, T., 2016. Pandora's Box: Forty Years of Housing History. The London Journal 41, 1–16. https://doi.org/10.1080/03058034.2015.1130472

Holliss, F., 2015. Beyond Live/Work: The Architecture of Home-based Work. Routledge, London.

Housing Europe, 2010. Social Housing in Europe [WWW Document]. URL http://www.housingeurope.eu/resource-125/social-housing-in-europe

HTA, 2016. Supurbia: A study of urban intensification in outer London. London.

Imrie, R., 2005. Accessible Housing: Quality, Disability and Design: Disability, Design and the Home Environment, New Ed edition. ed. Routledge, London ; New York.

Imrie, R., Street, E., 2009. Risk, Regulations and the Practices of Architecture. Urban Studies 46, 2555–2576.

Jones, S., Grigoriou, E., 2014. Wellbeing Matters: Assessing views on the impact of the built environment on wellbeing. Feeling Good Foundation, London.

Kenny, T., Coin, I., 2016. Making Public Land Work: How social enterprises can help local authorities make the most out of their land. Shared Assets.

Lee, T., 1971. Psychology and architectural determinism. Architect's Journal 4 August, 253–262.

Legal & General, 2018. Modular Homes [WWW Document]. URL https://www.legalandgeneral.com/modular/

Lipman, A., 1975. Aspects of the Professional Ideology of Architects: Social Engineering and Design Theory. Welsh School of Architecture, Cardiff.

Love, P.E.D., Lopez, R., Edwards, D.J., 2011. Reviewing the past to learn in the future: making sense of design errrors and failures in construction. Structure and Infrastructure Engineering 9, 675–688.

Macmillan, S., 2006. Added value of good design. Building Research & Information 34, 257–271. https://doi.org/10.1080/09613210600590074

Malpass, P., 1975. Professionalism and the role of architects in local authority housing. RIBA Journal 6–29.

Malpass, P., 1968. People and Plans: Essays on Urban Problems and Solutions. Basic Books, New York.

Marrs, C., 2015. Third of biggest housebuilders don't employ own architects 26 January.

Mazzucato, M., 2018. The Value of Everything: Making and Taking in the Global Economy. Allen Lane, London.

McManus, A., Gaterall, M.R., Coates, L.E., 2010. The potential of the Code for Sustainable Homes to deliver genuine "sustainable energy" in the UK social housing sector. Energy Policy 38, 2013–2019.

Meikle, J., Connaughton, J., 1994. How long should housing last? Some implications of the age and probable life of housing in England. Building Research & Information 12, 315–321.

Menteth, W., 2015. Procurement, in: Dye, A., Samuel, F. (Eds.), Demystifying Architectural Research. RIBA Enterprises, London, pp. 139–144.

Mercer, C., 1975. Living in Cities. Penguin, Harmondsworth.

Morphet, J., Clifford, B., 2017. Local authority direct provision of housing. National Planning Forum/RTPI/UCL, London.

Morris, R.N., Mogey, J., 1965. The Sociology of Housing. Routledge Kegan Paul, London.

NPPF, 2018. National Planning Policy Framework.

OECD, 2015. Governing the City.

ONS, 2017. Construction statistics. Office for National Statistics.

Peabody, 2018. Staircasing FAQ [WWW Document]. URL https://www.peabodysales.co.uk/shared-ownership/buying-shares-in-your-shared-ownership-home/

Porteus, J., Park, J., 2018. Age-friendly Housing: Future design for older people. RIBA Publishing, London.

Powell, C., 2004. The British Building Industry Since 1800. Spon, London.

Public Practice, 2-18. Public Practice [WWW Document]. URL http://www.publicpractice.org.uk/

Reizenstein, J.E., 1975. Linking social research and design. Journal of Architectural Research 4, 26–38.

RIBA, Colander, 2014. RIBA Business Benchmarking Report 2013/14. RIBA, London.

Richards, S., 2012. Architect Knows Best. Ashgate, Farnham Surrey, England ; Burlington, VT.

Rickard, J., 2018. Affordable Housing Provision.

Rogers, D., Hopkirk, E., 2012. RIBA says boycott “zero-fees” clients. Building Design 23 Nov.

RTPI, 2018. Chief Planning Officers: The corporate and strategic influence of planning in local authorities.

Samuel, F., 2018. Why Architects Matter: Evidencing and Communicating the Value of Architects. Routledge, London.

Samuel, F., 2004. Le Corbusier: Architect and Feminist. Wiley Academy, London.

Samuel, F., Awan, N., Handler, S., Lintonbon, J., 2014. Cultural Value of Architects in Homes and Neighbourhoods. University of Sheffield/AHRC.

Samuel, F., Coucill, L., Tait, A., Dye, A., 2013. RIBA Home Improvements: Report on Research in Housing Practice. RIBA.

Saxon, R., 2006. The Future of the Architectural Profession: A Question of Values.

Scotland, N.H., 2017. The Place Standard tool [WWW Document]. URL http://www.healthscotland.scot/tools-and-resources/the-place-standard-tool (accessed 10.31.17).

Scott, J., McGregor, T., 2012. Policy Statement on Architecture and Placemaking: Analysis of Consultation Responses.

Scottish Executive, M., 2006. A Literature Review of the Social, Economic and Environmental Impact of Design. Scottish Executive.

Shelter, 2018. Improving social housing [WWW Document]. URL http://england.shelter.org.uk/campaigns_/why_we_campaign/Improving_social_housing

Shelter, 2015. Housing Supply [WWW Document]. URL http://england.shelter.org.uk/campaigns_/why_we_campaign/housing_facts_and_figures/subsection?section=housing_supply#hf_4

Steemers, K., Steane, M.A., 2004. Environmental Diversity in Architecture. Spon, London.

Stone, J., 2017. New Government plan to extend Right to Buy “to hit affordable housebuilding.” Independent.

Swan Housing, 2018. Swan Delivers The First Of Their Modular Homes To Site In Basildon [WWW Document]. URL http://www.swan.org.uk/home/news/swan-delivers-the-first-of-their-modular-homes-to-site-in-basildon.aspx

Tavistock Institute, 1966. Interdependence and Uncertainty (Digest of a report from the Tavistock Institute to the Building Industry Communication Resarch Project). Tavistock Institution, London.

The Collective, n.d. Co-Living [WWW Document]. URL https://www.thecollective.com/co-living/old-oak/

Tierney, T., 2013. The Public Space of Social Media: Connected Cultures of Network Society. Routledge, New York.

Trowers & Hamlins, 2017. The Real Value Report. Oxford Brookes University.

UK Gov, 2017. Housing white paper [WWW Document]. URL https://www.gov.uk/government/collections/housing-white-paper (accessed 10.12.17).

UK Gov, 2015. Digital Built Britain.

UK Gov, 2013. Construction 2025.

UK Gov, 2001. Competitions in Professions. Office of Fair Trading.

UK Gov, 1990. Town and Country Planning Act.

UK Gov, n.d. Localism Act 2011.

UK Gov, n.d. UK set to lead the way for smart cities - GOV.UK [WWW Document]. URL https://www.gov.uk/government/news/uk-set-to-lead-the-way-for-smart-cities (accessed 10.12.17b).

UKGov, 2018. The Green Book. London.

UKGov, 2017. Industrial Strategy: Building a Britain fit for the future.

UKGov, 2016. Future of health and healthcare provision in cities. Government Office for Science.

UN Environment, 2017. Life Cycle Initiative [WWW Document]. URL http://www.lifecycleinitiative.org/starting-life-cycle-thinking/life-cycle-approaches/social-lca/

URBED, 2010. Beyond Decent Homes.

Wainwright, O., 2014. The truth about property developers: how they are exploiting planning authorities and ruining our cities. The Guardian.

Watson, K.J., 2017. Developing wellbeing valuation practices in the built environment, in: Professional Practices in the Built Environment. University of Reading, p. 120.

Watson, K.J., Whitley, T., 2016. Applying Social Return on Investment (SROI) to the built environment. Building Research & Information 0, 1–17. https://doi.org/10.1080/09613218.2016.1223486

WeLink, 2018. WElink launches its first UK low carbon modular pilot house during MIPIM UK [WWW Document]. URL http://www.welink-group.com/welink-launches-first-uk-low-carbon-modular-pilot-house-mipim-uk/

Welsh Gov, 2018. Abolition of the Right to Buy and Associated Rights (Wales) Act 2018 [WWW Document]. URL https://gov.wales/topics/housing-and-regeneration/legislation/abolition-of-right-to-buy-and-associated-rights/?lang=en

Withers, I., Gardiner, J., 2015. Sir Robert McAlpine singles out Fitzroy Place after £89 m loss. Building.

housingevidence.ac.uk
Twitter: @housingevidence

University of Glasgow
3rd Floor, Olympia, 2-16 Orr Street, Bridgeton Cross, Glasgow, G40 2QH

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL
Arts & Humanities Research Council
JRF JOSEPH ROWNTREE FOUNDATION

The UK Collaborative Centre for Housing Evidence is a consortium of eleven universities and three non-academic institutions, as follows: University of Glasgow, University of Sheffield, University of Reading, Cardiff University, Heriot-Watt University, University of Bristol, Ulster University, University of Adelaide, Sheffield Hallam University, University of Stirling, University of Liverpool, Chartered Institute of Housing, Royal Institution of Chartered Surveyors, Royal Town Planning Institute.