



UK COLLABORATIVE  
CENTRE FOR  
HOUSING EVIDENCE

# How does the land supply system affect the business of UK speculative housebuilding?

An evidence review

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# Executive summary

The supply of new housing presents a major challenge in the UK, aggravating the housing shortage. The lag between planning approvals and housing completions is often cited as one explanation for the slow speed of new private housing delivery. Yet, build out rates form only one part of a much more complex set of processes that determine the speed and mode of housing delivery. In this evidence review, we evaluate some of the key strategies of the speculative housebuilding sector, in relation to land, planning and development, drawing especially on 62 key publications dating from between 1997 and 2018.

The report is presented in four sections. Section 1 introduces the research aims, methods and report outline. In Section 2, we look at how the sector has been studied over the past two decades. We find that most of the literature on the housebuilding industry is atheoretical, multidisciplinary and tends to employ the same methods of research, or the same combinations of methods. These observations reveal key research challenges and important lessons for future research on the housebuilding sector in the UK and elsewhere. In Section 3, we present existing evidence on the following four key areas of enquiry: land acquisition methods and processes; the composition of land portfolios and questions of land 'banking'; product selection and the mode of housing delivery, including construction methods; and the speed of housing delivery, including build out rates. Section 4 concludes.

First, the evidence shows that UK housebuilders most commonly use options and conditional contracts to access and acquire land for residential development. They also rely more on networks and contacts than on markets to source land. However, conventional land acquisition strategies vary according to the type of site. The strategies and skills used for greenfield sites, for example, differ from those required for brownfield sites. The size and type of the firm can also have an influence on how housebuilders respond to policy initiatives designed to influence their business practices, including, but not exclusively, in relation to land acquisition. The evidence shows that smaller housebuilders tend to be disadvantaged by these processes.

Second, existing evidence shows that land 'banking' serves a number of functions but specific practices vary between firms and regions. There is some evidence to say that housebuilders' business models do not depend on profiting from land banks; instead, evidence suggests that land 'banking' is a response to planning uncertainties. However, land banks also help to control costs, increase margins, provide security against company debts and foster confidence among the firms' investors. The evidence shows considerable variation in the size of land banks (usually measured in terms of the number of years' supply). The distribution of strategic and short-term land held by housebuilders in their land portfolios also varies between firms. Those housebuilders with a higher proportion of their developments on brownfield sites tend to bank more land than firms with fewer brownfield developments, primarily due to the risks associated with brownfield development. There is some evidence, too, that developing on existing land banks can allow more time for design. However, overall, there are clear research and evidence gaps on land portfolios and land banking: most of the existing evidence is partial and much of the information on the function of land banks comes from now dated studies.

Third, we provide evidence of an embedded culture of standardisation in the mode of delivery of new housing which is resistant to significant public policy interventions. Greater levels of customisation are difficult to achieve given the issues that exist around funding and regulatory frameworks and capturing user needs. There is a reluctance among housebuilders to depart from standard house types. Moreover, the evidence suggests that design codes make the build process more demanding, and that 'smart parcelization' can increase the diversity of product. There are also practical difficulties around the efficacy of technological innovations associated with low and zero carbon housing which are difficult to resolve since they increase risk. Besides, housebuilders generally argue that there is no clear demand from their customers for greater customisation or energy efficient technologies.

Fourth, we found substantial recent evidence on the speed of delivery of new private housing. We provide

evidence to suggest that sales rates and site size are two key factors in determining build-out rates. However, the evidence also suggests that the relationship between site size and output is not proportionate, which can be explained partly by the number of different sales outlets on each site. There is conflicting evidence on whether greenfield or brownfield sites are built out more quickly; although sites with more affordable housing do tend to be developed faster. For large development sites to achieve faster build-out rates would probably require the site to be split up into two or three sales outlets. We also compare market-based explanations for slow build-out rates (housing demand, land supply, competition between firms) with those based on technical and other reasons (the nature of the production process and other specific constraints).

The report concludes by highlighting four points for reflection. First, much of the existing evidence is dated, except for that on the speed of delivery of new private housing. Second, the evidence has a tendency to homogenise the industry and favour the mainstream volume builders. Third is the tendency for research to be geographically benign and underplay the distinctions in policy and spatiality: there was very little, if any discussion of Welsh or Northern Irish housebuilding in the literature. Finally, the review has pointed to a key research challenge for future work on the housebuilding industry, which is that of developing a richer theoretical understanding of how the industry operates as a basis for stronger empirical investigation.

# 1. Introduction

The supply of new housing is one of the biggest political and societal challenges facing the UK. A recent housing White Paper setting out the UK government's plans to reform the housing market and boost supply in England stated that "The housing market in this country is broken, and the cause is very simple: for too long, we haven't built enough homes" (DCLG, 2017). Housing supply shortage is also a major concern in other parts of the UK. Bramley (2018) estimated that 4.75 million households across Great Britain are either homeless or living in precarious and unsuitable accommodation and that 380,000 new homes need to be built every year for the next 15 years. This figure includes the supply of new social housing, with specific provision of housing for shared ownership and immediate affordable rent. As Payne (2016: 7) noted "Britain's dominant speculative housebuilders alone will not be able to build out in sufficient volume to meet the country's housing supply needs". In England, at least, the growing lag between planning approvals and housing completions is given as one explanation for the sluggish speed of new housing delivery (Bentley, 2017), and is of increasing political and popular interest (Letwin, 2018). Letwin concluded that the homogeneity of housing products on large development sites combined with limits on the market absorption rate serves to slow down build out rates. Yet, build out rates form only one part of a much more complex set of processes that determine the speed and mode of speculative housing delivery. How housebuilders interact with land markets, make product selection choices and manage construction programmes are also likely to influence supply outcomes.

Our market-led housing system relies heavily on the private sector to deliver new homes. These private housebuilders, motivated primarily by profit and return on capital, are key delivery agents of new homes, producing anywhere between 70% and 80% of the total housing output in any given year.<sup>1</sup> To deliver new homes at an acceptable profit, housebuilders must make assumptions on the quantity, expected price and sales rate well before any homes are built in order to generate competitive land bids and secure their raw materials. Once planning permission is granted and land purchased, housebuilders must wait until the houses are constructed and sold, hopefully at the rate and price predicted beforehand, to achieve their desired profits. Any rise in underlying land prices between site purchase and eventual house sales can boost profits significantly.

This process of speculative housing provision requires risk taking and profit making by market actors, yet also is subject to intervention and regulation by the state. The ability of government policy to influence market behaviour, together with the impact of broader structural changes in the economic, demographic and political contexts of housing provision, mean that many diverse factors can shape supply outcomes. This may go some way to explaining why issues of housing supply remain so difficult to address. Yet, understanding these dynamic state-market relations is the very reason why we are interested in the behaviours and attitudes of speculative housebuilders. Indeed, without knowing how speculative housebuilders acquire, process and build out housing land, policy-makers cannot fully address the UK's housing supply problems.

<sup>1</sup> See Ministry of Housing, Communities and Local Government - Live Tables on House Building: New Dwellings Completed, available at <https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building>

## 1.1 Research aims

It is for these reasons that we have chosen to undertake a systematic review of existing evidence on the current operation and limitations of the speculative housing supply system. Our aim is to evaluate some of the key strategies of the speculative housebuilding sector, especially in relation to land, planning and development. To do this, we concentrate on the following four key areas of enquiry:

- Land acquisition methods and processes;
- The composition of land portfolios and questions of land 'banking';
- Product selection and the mode of housing delivery, including construction methods; and,
- The speed of housing delivery, including build-out rates.

By following these four lines of enquiry, this review, unlike many other studies, covers the full extent of the planning and delivery process from the acquisition of land through to the completion and delivery of new housing stock.

Although housebuilders may not be surprised by what we report, our target audience also includes planners and policymakers who are perhaps less familiar with the industry, and indeed anyone concerned with increasing housing supply but not directly employed by, or working with, a speculative housebuilder. In this context, Payne (2013: 59) called for "a greater understanding by policymakers and planners of the behavioural practices of speculative housebuilders and the institutional environment within which they operate". She cautioned that "policymakers seeking to challenge the dominant traditions of speculative housebuilders may reinforce institutional rigidity and undermine genuine and significant institutional change" and suggests that policymakers and planners need to "work closely with the grain of the industry to harness speculative housebuilders effectively in their desire to accelerate housebuilding in what might be a potentially risk-averse future" (Payne, 2013: 59).

Although some industry reports present an expert but somewhat uncritical view of the housebuilding industry (see, for example, Nathaniel Lichfield and Partners, 2016), others call for a greater understanding of the role of planners in ensuring adequate supply of housing land and better recognition of the social, environmental and economic constraints upon allocating land (MacDonald and Kilman, 2007). The role of planners falls outside the remit of this report, although we hope to examine the evidence in relation to planning processes in future work. Instead, our overarching aim is to generate a more rounded understanding of the UK speculative housebuilding industry among all those involved in, or working with the industry, including planners and policymakers.

## 1.2 Methods

We conducted a systematic review of literature on UK housebuilding published between 1997 and 2018. A guidance document was produced to establish the protocol to be implemented in the review process. This approach has been developed more generally by CaCHE in order to facilitate all its systematic evidence reviews undertaken by multidisciplinary research teams. The guidance document compiles key information about the review including the review scope (e.g. research aim, questions and objectives); the review steps; sources to be reviewed (e.g. academic indices, journals and publications by key institutions); keywords and queries to be run for reviewing sources; the inclusion-exclusion criteria to be applied for selecting the evidence; quality criteria for the appraisal of studies to be included in the review; and a work plan. Implementation of this guidance fosters transparency in the review processes while also facilitating a systematic interaction among the research team (see Appendix).

The research team collectively agreed the guidance for this project and took the key strategic decisions such as selecting academic indices and journals. Three bibliographic sources were selected, namely Scopus, Web of Science and SocINDEX. Scopus and Web of Science were selected according to the results of a CaCHE literature mapping exercise which identified that these two indices cover a substantial amount of published academic material (Serin, 2018a); while SocINDEX was chosen due to its subject relevance. Academic journals were selected from a list compiled for a more generic mapping report on housing supply literature (Serin, 2018b). Additional journals were identified by the research team based on their expertise and knowledge of the field (see Appendix). In addition, the research team piloted the review in order to identify keywords and test the data extraction categories before starting the review process. This piloting phase was conducted by selecting eight articles from a wider pool of academic publications on the housebuilding industry.

The review process entailed five key stages. First, the academic indices were reviewed by running keyword queries on title, abstract, and stated keywords of the articles. The first-phase inclusion-exclusion criteria were applied to the returns and a core database was created (see Appendix for the inclusion-exclusion criteria). Second, selected journals were identified by using the same keywords and the returns were reviewed according to the first-phase inclusion-exclusion criteria. Selected articles from journal reviews were then included in the core database.

Third, the grey literature was searched, beginning with newspaper reviews. Nexis, which is an online search tool for making systematic searches in the newspapers published in the UK, was used for this phase of the review. The research team initially aimed to explore newspaper investigations and reports. However, this search did not produce any substantive new sources material that could be added to our core database. The Nexis search did, however, point us to grey literature produced by other institutions referred to, or quoted in, the news content. We therefore traced the original sources of grey literature systematically and added these sources to the core database. The cut-off date for search media was June 2018.

Fourth, full-texts of the documents in the core database were reviewed according to the data extraction categories, quality appraisal checklist and second-phase inclusion-exclusion criteria (see Appendix for these criteria). As a result of this assessment, some publications were excluded from the core database (due to low quality or irrelevant content) and no data extraction applied on them. We were left with 62 primary sources (50 academic and 12 from the grey literature) and a list of 8 secondary sources. About 25% of the reference material comes from sources produced by the authors of this report or other CaCHE co-investigators, which reflects the capacity of CaCHE. It is worth noting however that all publications considered for this review were subject to strict inclusion-exclusion criteria and quality assessment, and, crucially, none of the authors was responsible for reviewing the quality of their own work. Also crucially in this phase of the review were two sense-check meetings, one in Edinburgh and one in London, undertaken with the participation of senior practitioners in the industry. The aim of these meetings was to find out what, if anything, we might have missed in our literature search and to gather feedback from industry experts before going forward to the next step of the review.

Fifth, based on the data extracted over the review, a synthesis of the identified evidence was

produced. Table 1.1 sets out for the number of returns in initial reviews and final number of publications reviewed, while the full list of publications reviewed can be found in the bibliography.

### 1.3 Report outline

The remainder of this report is structured as follows. Section 2 presents a brief account of how the UK housebuilding industry has been studied over the past two decades. In particular, we provide a useful summary of the theoretical and disciplinary perspectives evident in the literature. We also consider some of the methods most commonly used by those researching the housebuilding industry in the UK. Section 2 reveals some key challenges and lessons for future research in this field.

Section 3 comprises the main findings in relation to the four key areas of enquiry listed above. First, we provide evidence on housebuilders' land acquisition methods and processes. Here we draw primarily on three key publications, which, when taken together, reveal some of the strategies used by housebuilders to access and acquire land for residential development. Second, we examine the evidence on the composition of land portfolios and questions of land 'banking'. We include evidence on two key issues: the purpose and size of land banks, and their relationship to design outcomes and sector innovation. We then consider the main research and evidence gaps around land portfolios and land banking. Third, we provide evidence on product selection and the mode of housing delivery, including construction methods. And, fourth, we examine evidence on the speed of housing delivery, including build out rates, and consider some potential policy solutions.

In each section, we present only the evidence that we have been able to extract from the literature. We do not attempt to make any claims beyond this; instead, our goal is to provide an objective account of what is already known in relation to each of these four lines of enquiry.

The report concludes, in Section 4, with some reflections on the nature of the evidence and the limitations of the evidence base. We then summarise some key challenges for future research.

Table 1.1

<b>Search media</b>	<b>Search fields</b>	<b>No. of returns reviewed</b>	<b>Notes</b>
Academic indices	Abstract, title, keywords	1715 (Scopus) 974 (Web of Science) 99 (SocINDEX)	While Scopus and Web of Science are inherently academic indices, SocINDEX covers some grey literature as well (e.g. the Economist).
Journals	Full-text	3487	In total, there were 3487 returns from all reviewed journals. Their abstracts were reviewed and first-phase exclusion criteria applied.
Newspapers	Full-text	262 (reports) 39 (investigations)	Newspapers reviewed using Nexis. The leading UK newspapers - The Times, The Daily Telegraph, The Guardian, The Independent, The Sunday Times, The Sunday Telegraph and The Observer - were selected for this investigation in addition to review keywords. Results were limited to 'reports' and 'investigations'.
Core database	Full-text	84	As a result of the review process, 84 publications were identified. This includes reviewing indices, journals, grey literature (including newspaper review), follow up references, a very recent new publication and an article which is outside the timeframe but critical to the review.
Primary Sources: Final Academic Database	Full-text	50	After second phase exclusion, 50 articles were identified as relevant and above quality threshold, and reviewed for evidence extraction.
Primary sources: Final grey literature database	Full-text	12	After second phase exclusion, 12 grey literature publications were identified as relevant, and reviewed for evidence extraction.
Secondary sources	Full-text	8	After second phase exclusion, 8 secondary sources were identified and reviewed. These publications have not provided substantial evidence, but are still relevant to the research.

## 2. How has the industry been studied?

In this section, we include a brief summary of the theoretical and disciplinary perspectives and methods that can be identified from the literature. We extracted this information from the literature following the same process as the evidence review itself. We also provide a brief note on significant policy interventions. This is followed, in Section 3, by a review of the evidence relating to each of the four key areas of enquiry.

### 2.1 Theoretical perspectives

Most of the literature on the housebuilding industry is remarkably atheoretical. As Figure 2.1 shows, we found that over 70% of the papers we analysed did not seek to apply or test any particular theoretical perspective. These papers were essentially practice or policy orientated in that they either explained what the authors had found out about the industry or offered a review or critique of policy towards it, but without setting this within any theoretical context, explicitly or even implicitly. Although these papers often provided helpful insight into the current operations of the industry at the time of their publication, they were less useful in identifying how key drivers change over time. This left less than 30% of papers where the authors had sought to apply or test a particular theoretical perspective, either explicitly or implicitly. As Figure 2.1 shows, within these papers, the most popular approach taken was that of grounding the paper within neoclassical economics, with institutional theories and environmental or urban design theories achieving slightly less attention. These categories will now each be considered in turn.

Research in the neoclassical tradition has concentrated on exploring what Golland and Boelhouwer (2002: 231) define as “the relationships between new build output, housing markets and the wider economy”. Here, there has been particular interest on how far new housing supply is responsive to demand, how this varies both within the UK and internationally, how it is affected by the structure and organisation of the housebuilding industry, and by the extent to which the industry can be considered competitive, locally, regionally and nationally. Connections are often made in these studies to institutional analysis, especially in evaluating how different forms of land use regulation impact on industry structure and company strategies and on the speed at which supply responds to changing demand. Some of the work in this tradition, such as that of Leishman (2001 and 2015) deploys econometric modelling to delve deeper into this issue.

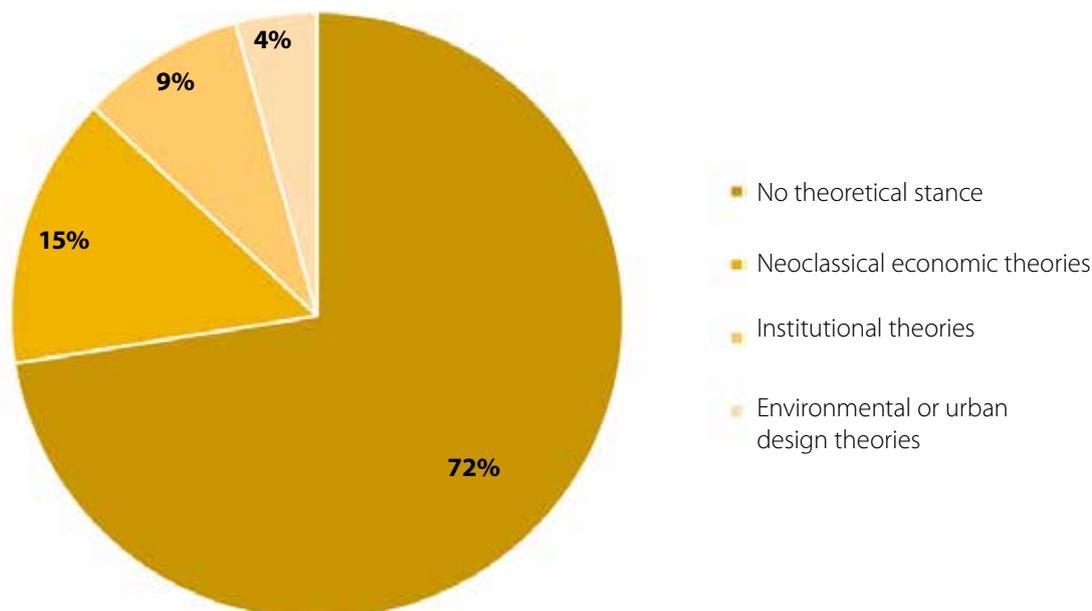


Figure 2.1: Theoretical stance taken in papers reviewed by percentage.

Those looking at the industry from an institutional perspective appear much more disparate in their conceptual frameworks. Among the papers reviewed here were those seeking to understand the industry from, for example, structure and agency approaches, different forms of network theory, and particular types of organisational or management theory. These papers often explored the social dynamics of housebuilding and provided social explanations of outcomes to reinforce or balance the economic explanations preferred in neoclassical analysis. But crucially, there seemed to be little connectivity between different institutional approaches. Certainly, no dominant institutional perspective emerged to challenge the more integrated nature of neoclassical analysis.

Although there was much comment in the literature on the environmental and urban design outcomes of the housebuilding industry, very little of this was connected to theoretical debates in these areas. One exception was the attempt by Tiesdell and Adams (2004) and Adams, Croudace and Tiesdell (2011) to apply and develop the concept of 'opportunity space theory' in urban design to explain the circumstances in which design quality was or was not prioritised by different housebuilders.

From this overview, a key research challenge emerges for future work on the housebuilding industry, which is that of developing a richer theoretical understanding of how the industry operates as a basis for stronger empirical investigation.

## 2.2 Disciplinary perspectives

As research into housebuilding is multidisciplinary by its very nature, those with backgrounds in business management, construction, economics, geography, planning, policy analysis, real estate, sustainability and urban design were all represented in the range of papers analysed. Some outputs were very clearly grounded in the particular authors' own discipline, as evident in the specialist work by economists on the market structure of the industry. Typically, however, papers on housebuilders and the housebuilding industry tended to draw on two or more disciplines. For example, we identified around 20 papers that explored how the planning system impacts on business organisation in housebuilding and another eight that looked at the relations between technical innovation in construction and business strategy.

In some cases, work involved teams of researchers from different disciplinary backgrounds. For example, the investigation of Hertin et al. (2003) into how the housebuilders might adapt to climate change brought together academics with expertise in business management, economics, environmental science, geography, political science, public policy and technological innovation. In other cases, there was evidence of cross-disciplinary movement, especially of those with backgrounds in geography or planning moving in to investigate corporate strategy. Hooper and Nicol's (1999 and 2000) work on standard house types provides an early instance of this, while Karadimitriou's (2005 and 2013) later investigations into the business strategies of 'brownfield builders' offer a more recent example. Perhaps the most important lesson from all this is that housebuilding, as a research focus, demands inter-disciplinary flexibility as well as cross-disciplinary collaboration. Although single disciplinary approaches may well yield particularly-focused insights, a more rounded understanding of the operations of the industry and their broader consequences appears to require a range of different disciplinary perspectives.

## 2.3 Methods

As well as a range of disciplinary perspectives, we found that studies used a number of different methods; but by far the most common were semi-structured interviews and survey questionnaires. Of the 62 primary sources we reviewed, more than one-third used some form of survey questionnaire. Postal surveys appear to be used more frequently in studies of this industry, followed by telephone and web-based surveys. Typically, housebuilders were

sampled on the basis of their size (usually measured by the number of units completed per year, according, for example, to Wellings' Private Housebuilding Annuals). Other sampling techniques include drawing samples from membership lists. Gibb, McGregor and Munro (1997), for example, conducted a telephone survey targeting 150 members of the Scottish House Builders Association. In a study on the selection by housebuilders of low and zero-carbon technologies, Lees and Sexton (2014) used National House Building Council mailing lists to invite members who had expressed an interest in sustainability, to complete a web-based survey. Henderson, Ganah and John (2016) started with a list of 143 housing developers from the Home Builders Federation database and surveyed every second case. Respondents tended to be senior managers and response rates ranged from 36% to 65%, with most tending to be about 40%. These are consistent with typical response rates for survey questionnaires in the social sciences. Some studies, which focused on new-build housing preferences, quality and choice, surveyed new-build consumers (Roy and Cochrane 1999; Barlow and Ozaki 2003; Leishman et al. 2004; Leishman and Warren 2006).

More than half of the 62 primary sources used semi-structured interviews with group directors and senior managers of housebuilding companies, and other key stakeholders including landowners, planning authorities, suppliers and/or industry representative bodies. Most of these studies deployed more than one method, with interviews, for example, commonly used in conjunction with survey questionnaires. Interviewees were often drawn from survey samples. Payne (2013), for example, first sought aggregate data at an industry level through a postal questionnaire targeting the largest 104 housebuilders in the UK; and, secondly, captured disaggregated data at the company level through detailed interviews with 11 companies operating in Greater Manchester and Central Scotland. A number of other publications adopt a similar stepwise approach (e.g. Gibb, McGregor and Munro, 1997; Gibb, 1999; Hooper and Nicol, 2000; Scottish Government, 2007; Osmani and O'Reilly, 2009; Smith, Ferrari and Jenkins, 2011). Sampling techniques included purposive sampling (e.g. Adams, Leishman and Watkins, 2012) and use of 'snowballing' (Lovell, 2005). Adams, Leishman and Watkins (2012: 706) described their approach as an "internal referral process", whereby interviewees were nominated by colleagues on the basis of their intimate knowledge of the strategic priorities and practices of firms.

Other methods included direct observations, analysis of published information and company reports, as well as focus groups and other methods of consultation (e.g. regional roundtables, seminars and meetings). As this shows, the effective study of such a highly differentiated industry as UK housebuilding appears to require a combination of methods and approaches, capable of generating quantitative and qualitative data at both industry and company level.

## 2.4 Significant policies

In the early 1980s, the state retreated from direct provision of new housing, when the then Conservative government cut public expenditure on housing. This effectively outsourced housing provision to the market and saw speculative housebuilders take on a primary delivery role. As a result, housing supply became more susceptible to market cyclicity, leading to historic lows in starts and completions. Successive governments have, with varying degrees of emphasis, sought to tackle this inherent cyclicity and volatility of provision.

Facilitative policies such as Help to Buy and the New Homes Bonus have encouraged new development by stimulating demand and encouraging political buy-in, whilst regulatory policies like brownfield and zero carbon targets have pushed housebuilders into new geographical and technological spheres. These policies have been met with varying degrees of success and elucidate the challenges policy makers face in their quest to deliver housing numbers, while also influencing the type and location of new homes.

The contradiction between policy reliance on the industry to deliver new homes and the frustration that it does not necessarily result in the quantity or quality of new homes that policy makers want to see is a reminder of the importance of regulation in housing markets. This is reflected in the series of official reviews undertaken by Barker (2004), Callcutt (2007) and Letwin (2018), which have examined the undersupply of new homes and recommended interventions to raise housing production.

## 3. The evidence

In Section 2, we provided a brief account of how others have studied the UK housebuilding industry. This revealed key research challenges and important lessons for future research in this field. In this section, we turn our attention to the evidence that we have gathered from the literature, focusing specifically on the following four key areas of enquiry: land acquisition methods and processes; the composition of land portfolios and questions of land 'banking'; product selection and the mode of delivery; and the speed of delivery of new housing supply, including build out rates. We take each of these areas of enquiry in turn and conclude each section with a short summary of the evidence

### 3.1 Land acquisition methods and processes

Our research revealed relatively few publications that focus specifically on the land acquisition methods and processes of speculative housebuilders in the UK. Some contributions which purport to cover the full extent of the planning and delivery process are remarkably silent on land acquisition (for example, Nathaniel Lichfield and Partners, 2016). There are, however, three key contributions, each adopting a relatively similar theoretical stance and methodological approach, which shed light on the strategies, methods and processes of land acquisition prevalent in the UK speculative housebuilding industry.

First, Adams, May and Pope (1992) specifically examined housebuilders' strategies for the acquisition of residential development land and their involvement in the land use planning process. While this work is now quite dated, it remains relevant as subsequent work corroborates its findings. The second paper, by Adams, Leishman and Watkins (2012), for example, revealed the importance to housebuilders of networks with other important actors in securing future land supplies. Third, Payne (2013) examined how housebuilders respond to increasing state intervention in their business practices, specifically in relation to the policy switch favouring brownfield development in the early 2000s and its impact on housebuilders' approaches to land acquisition and product design.

These three papers are now considered in turn, while also supplemented by other studies and government reviews which reflect and comment on land acquisition without adding much in the way of additional empirical material.

#### 3.1.1 Evidence on the use of options, conditional contracts and the land use planning process

Of all the publications we reviewed for this report, the three papers mentioned above focus explicitly on land acquisition methods and processes. Adams, May and Pope (1992) explored both the acquisition of land for residential development and housebuilders' increasingly sophisticated use of the planning process. The research was based on detailed case studies, drawing on local authority records and published information, along with interviews with landowners, developers and agents. The results showed that, from as early as the 1980s, opportunities to influence local planning were increasingly reflected in land acquisition strategies, which in turn were developed to allow for flexibility in negotiation with landowners and local planning authorities.

Most housebuilders in the study acquired land without planning permission through either options or conditional contracts in order to spread risk and uncertainty, enable gradual purchase of land in multiple ownership, and reduce initial capital outlay (Adams, May and Pope, 1992: 211-2). These advantages to the developer of using options and conditional contracts over freehold purchase are echoed in other more recent reviews and studies (Barker, 2004: 129; Callcutt, 2007: 37; Payne, 2013: 41). Crucially, however, Adams, May and Pope (1992: 212) noted that developers did not seek to tie up land indiscriminately through options and conditional contracts. Instead, they participated in the process of planning policy formulation, utilising the land use planning process to their advantage and targeting their options and conditional contracts on land likely to be released. It is unclear, from the literature, how far this specific practice continues, but subsequent work, which we refer to below, suggests that housebuilders continue to rely on

external development networks and partnerships. Adams, May and Pope (1992: 214) found that local development agents with considerable knowledge of local planning policy played a crucial role in land acquisition, acting on behalf of housebuilders in their negotiations with local authorities, but also in identifying sites for development, persuading landowners to release them and then finding appropriate developers and house purchasers.

It is worth noting that there is a cost to taking out an option. As the Callcutt Review (2007: 37) noted, “Landowners observe the escalating prices of new homes, and can and do demand both a premium payment for the option and a full share of development profits”. However, both Callcutt (2007) and Adams, May and Pope (1992: 224) observed that, where payment is made to the landowner for the option, it is still less costly than purchasing freehold (once planning consent is granted) and holding the site on the balance sheet at its full acquisition value. Reducing the initial capital outlay in this way means that developers can “direct their resources, not to expensive acquisition of freehold land, but rather to employing the best professional advice available to secure the release of land under option, through both planning appeals and involvement in the local planning process” (ibid). The results highlight the growth of planning consultancy, which the authors conclude “has been engendered, in large measure, by the changing acquisition strategies of residential developers” (ibid).

### 3.1.2 Evidence on the use of networks and contacts

Building on this earlier work, Adams, Leishman and Watkins (2012: 706) aimed to “recast theoretical conceptions of land markets away from the neo-classical model of competitive markets and towards a more institutionally grounded notion of socially embedded networks of relations”. This research was based on in-depth semi-structured interviews with senior representatives of 19 UK housebuilders (a stratified sample drawn from a population of 87 listed by Wellings (2006) as completing 100 or more new units in 2005). The authors adopted a purposive sampling approach to identify housebuilders broadly representative of the industry’s structure resulting in the selection of four volume builders (annual output of over 2000 units), seven medium-sized builders (501-2000 units), and eight smaller builders (101-500 units). This broad perspective was complemented by an interview with a representative of the UK’s largest land agent who had interacted with many builders of different types and sizes. The results showed that UK speculative housebuilders rely more on networks than markets to source land and that they structure those networks to enhance their own competitive positions.

The authors highlighted three main reasons why housebuilders rely more on networks than markets. First, not all residential development land is openly marketed. Land may be made available to closed tender (Adams, Leishman and Watkins, 2012: 711) or may be exchanged or “swapped” between builders (see Callcutt, 2007: 141). Second, “bullish bidding behaviour” by land buyers might not be authorised by senior management within the company; instead, “the stronger the influence of the internal hierarchy, the more local managers must rely on external networks for land acquisition, since to do otherwise might risk internal veto of the bullish land bids necessary to outbid all competitors” (Adams, Leishman and Watkins, 2012: 712). And third, the best way to buy current (or short term) land – that is land which has planning consent for residential development or has outline planning permission for that purpose – is through contacts (ibid). The authors argued that “it has become common practice for housebuilders to try to secure their land supplies at least two to three years in advance, often through options and contracts” and to do this “housebuilders’ land buyers hunt out land and develop extensive contacts with potential vendors and agents” (ibid: 706). Developers forge networks with other developers to share information, establish partnerships and exchange land (ibid: 712-14); and they use options and conditional contracts to develop relationships with landowners over a period of time (ibid: 714). This work resonated with that of Adams, May and Pope (1992), especially where developers express a preference for dealing with experienced landowners who understand the planning process.

Similarly, the crucial intermediary role of development agents and the potential benefits of building closer relationships with planners were again evident (Adams, Leishman and Watkins, 2012: 714-16). The authors cited the “clash of cultures” between the private and public sectors as both a source of frustration and an incentive to build closer relationships. Housebuilders have consistently complained about planning constraints over the past two to three decades (Gibb, McGregor and Munro, 1997; Gibb, 1999; Barker, 2004;

Ball, 2005; Callcutt, 2007; Goodier and Pan, 2010: 17; House of Lords, 2016). Adams, Leishman and Watkins (2012: 715-6) remarked that “We heard well-rehearsed complaints from housebuilders about the regulation of development through the planning system, emphasising planning delay, perceived inconsistent decision-making and political interference”; and they suggest that “the inability to articulate shared interests on both sides means that planners stand at the most distant point from housebuilder networks” (ibid: 716).

Taken together, these two papers show that housebuilders’ land acquisition methods will usually involve the use of options and conditional contracts to reduce risk, uncertainty and initial capital outlay; that they utilise the land use planning process to target options and contracts on land likely to be released; and that housebuilders rely more on networks than markets to source land for residential development. We now turn to the third key contribution.

### 3.1.3 Evidence on the behavioural practices of housebuilders in relation to brownfield and greenfield development sites

Payne (2013) specifically aimed to understand the behavioural practices of speculative housebuilders and to evaluate their response to state-led policy initiatives seeking to influence their business practices. More broadly, she sought to explain “why change may or may not occur” and “why some organisations respond to change through embedding new business practices, while others rely on only superficial modifications to their existing business practices” (ibid: 45). She focused on examining the policy switch favouring brownfield development, formally introduced in England in 2000 and adopted thereafter, albeit less formally, in Scotland and Wales, and on identifying its impact on housebuilders’ approaches to land acquisition and product design. The research was conducted in two stages. Stage one comprised quantitative methods in the form of aggregate data gathered via a postal questionnaire sent to 104 UK housebuilders (each with an annual output of over 100 units), which returned a 46% response rate. Responses were then categorised into typologies of brownfield development (see Payne, 2013: 47) from which a sample of 11 was drawn. In Stage two, in-depth semi-structured interviews were conducted with these 11 firms, based in Greater Manchester and Central Scotland.

Payne (2013: 44) found that conventional land acquisition strategies and skills used for greenfield sites differed from those required for brownfield sites. She revealed a clear distinction in the response of speculative housebuilders to the brownfield policy agenda. In short, “a small cohort of housebuilders... sought to embed increasing rates of brownfield development within their existing business strategies”, while the majority “responded to the policy switch with notable caution, seeking to accommodate brownfield development within their conventional business model rather than making any fundamental changes to suit the demands of the policy switch” (ibid: 56). The former were labelled ‘pioneers’ (15% of the sample), while the latter were considered ‘pragmatists’ (56%) and ‘sceptics’ (29%). In terms of land acquisition, the pioneers, who tended to be regeneration specialists, “generally sought out large, stand-alone sites in need of significant regeneration, often with significant ground problems and in areas of low market demand, leaving smaller and ‘easier’ brownfield sites for the rest of the industry” (ibid: 49). This group rarely bought land outright, but relied instead on development agreements with landowners, agreeing a profit split in advance. Here Payne’s evidence reflects that of Dixon (2006), who also explored housebuilders’ willingness to take on and tackle difficult brownfield sites. Notably, Payne’s pragmatists and sceptics “were forced [as greenfield land opportunities decreased] to consider brownfield land for acquisition to maintain their flow of suitable development land in the short term and secure continued housing production” (Payne, 2013: 53). We return to the composition of land portfolios and questions of land ‘banking’ in the next Section 3.2.

In constructing these typologies, Payne (2013) emphasised that housebuilders are not a homogenous group (see also Goodier and Pan, 2010: 11), although they are, by and large, risk averse. Their characteristic aversion to risk, while understandable, manifests in low levels of investment in brownfield development, which exacerbates market failures (i.e. externalities, co-ordination failures and information failures) typically associated with such developments (Barker, 2004: 56-7, 129). Payne (2013: 48-9) noted that the ‘pioneers’ tended to be small and to specialise in regeneration projects. The pragmatists tended to be volume and super builders, while the ‘sceptics’ were mostly small to

medium-sized builders. Several other publications also highlight how opportunities and strategies for acquiring land can differ depending not only on the type of housebuilder but also the size of the firm. The evidence tends to suggest that smaller firms are at a disadvantage when it comes to accessing finance and land for residential development (Ball, 1983; House of Lords, 2016: 19). Ball (2013: 200) argued that comparatively tighter regulation of residential development in the UK favours large firms - not because it enables them to control the land supply but rather because the high cost of compliance with planning regulations advantages firms that can raise more capital.

Finally, Payne (2013: 41) confirmed previous knowledge on land acquisition methods, noting that “Rather than purchasing the land outright, most housebuilders have conventionally sought to control land through the use of option agreements, permitting them to build up land banks comprised of land at different stages of development realisation. This strategy allows housebuilders to contain the costs and risks of land acquisition prior to planning approval, while responding to an uncertain housing land supply”. This work also adds to knowledge by showing that builders were using options on urban brownfield sites, even anticipating future factory closures, which was not well known beforehand. The study also echoed that of Adams, Leishman and Watkins (2012) by highlighting how a continuous and smooth supply of developable land is achieved via “extensive in-house site search strategies... and a strong external contacts base in the form of development networks” (Payne 2013: 40-1; emphasis added). In explaining the willingness of the “pioneers” to take on brownfield sites, Payne also emphasised their ability “to rely on institutional support during the land acquisition process, through development partnerships with landowners and good relationships with externally appointed specialist consultants, which allowed them to approach design and construction in bespoke and non-traditional ways, thereby creating more opportunity space (or strategic freedom to manoeuvre) for their designers” (ibid: 52; emphasis added). We return to questions of product design in Section 3.3.

### 3.1.4 Summary

In summary, this section has provided evidence around the following points:

- UK housebuilders most commonly use options and conditional contracts to access and acquire land for residential development (Barker, 2004; Callcutt, 2007; Payne, 2013) and they utilise the land use planning process to target options and contracts on land likely to be released (Adams, May and Pope, 1992).
- They also rely more on external networks and contacts than markets, to acquire land for residential development (Adams, Leishman and Watkins, 2012).
- Housebuilders have consistently complained about planning constraints over the past two to three decades (Gibb, McGregor and Munro, 1997; Gibb, 1999; Barker, 2004; Ball, 2005; Callcutt, 2007; Goodier and Pan, 2010; House of Lords, 2016).
- Conventional land acquisition strategies and skills used for greenfield sites differ from those required for brownfield sites (Payne, 2013).
- The size and type of the firm can also have an influence on how housebuilders respond to policy initiatives intended to influence their business practices, including, but not exclusively, in relation to land acquisition (Payne, 2013).
- Similarly, housebuilders enjoy different opportunities to acquire land for residential development, depending on their size, with smaller builders tending to be disadvantaged (Ball, 2010 and 2013; House of Lords, 2016).

## 3.2 The composition of land portfolios and questions of land ‘banking’

The land portfolios of housebuilders and land banking practices of the housebuilding industry have been a longstanding topic of interest in both academic and policy circles as well as in the press. These practices are closely related to the previous discussion of land acquisition.

In our review, only ten academic articles engage with aspects of land portfolios and banking. These are the studies by Gibb, McGregor and Munro (1997), Barlow (1999), Ball, Farshchi and Grilli (2000), Tiesdell and Adams (2004), Dixon, Pocock and Waters (2006), Adams and Payne (2011), Smith, Ferrari and Jenkins (2011), Adams, Tiesdell and White (2013), Ball (2013) and Karadimitriou (2013). However, in most cases, engagement was limited, and attention to land portfolios and banking central. There were five pieces of grey literature which were more engaged with land portfolio and banking practices. These were the studies by Callcutt (2007), the Scottish Government (2007), Office of Fair Trading (2008), Lyons (2014), and Nathaniel Lichfield and Partners (2016).

Although existing evidence on land portfolios and land banking in the literature is limited, what has been produced enables us to explore two key issues: the purpose and size of land banks, and their relationship to design outcomes and sector innovation. We then consider the main research and evidence gaps around land portfolios and land banking.

### 3.2.1 Evidence on the purpose and size of land banks

Our review of existing evidence suggests that the role of land banks in the speculative housebuilding practice varies according to their geographical distribution, locations and time span. This evidence is not conclusive due to the nature of reviewed studies which generally focused on particular aspects of housebuilding in the UK rather than on the whole process from land acquisition to handing over the new-built houses. Some location-specific research and evidence from individual cases also offered insight on land portfolios. Although these various sources of evidence could not easily be generalised, they were still valuable for understanding housebuilders’ practices. However, there is clearly a need for more comprehensive research on land portfolios and land banking that also investigates how the practice varies across the regions and nations of the UK.

Despite its limitations, the evidence indicated that, while UK housebuilders hold land banks as part of their practice, their business model does not depend upon profiting from land banking (see, for example, Ball, Farshchi and Grilli, 2000; Barker, 2004; Callcutt, 2007; Ball, 2013; Lyons, 2014). The Office of Fair Trading (2008) connected increased reliance on land banking to increasing planning uncertainties, while acknowledging there were exceptions to this. Lyons (2014) emphasised the importance of land portfolios in housebuilders’ practice, emphasising that land provides important security for housebuilders’ debt and is critical for their balance sheets. Both Callcutt (2007) and Lyons (2014) suggested that investors’ confidence in particular housebuilders is influenced by the size of their land banks, since a ready-to-use land supply demonstrates the ability to sustain commercial activity for a definite future time frame. However, Callcutt (2007) also drew attention to lack of transparency on the land holdings, while reporting RTPI data on particular companies’ land holdings with planning permission in terms of years’ supply. This data showed considerable differences in the years’ supply among the major housebuilders. While the average land bank was 2.8 years, the highest was 6.6 and the lowest 1.4. Although this information should be evaluated in the context of the whole development process, it suggests quite varied land banking practices.

Lyons emphasised how land banking practices among major housebuilders had changed after the 2008 crash, suggesting that “the major house builders built out units and the land bank appears to have fallen in line with completion levels” (Lyons, 2014: 61). Lyons found the number of years’ supply for the six major housebuilders to be between 4 and 5 in the time of the publication. However, he acknowledged that strategic supplies were not normally owned by the housebuilder directly, but controlled by options and conditional contracts, as we

discuss above, meaning that the land was no longer available to other developers. In this context, the review highlighted “the activity of non-developers holding land under option or with planning permission but with no intention of building on it and who may be motivated by speculating on future land values” (ibid: 62).

Karadimitriou (2013) has argued that due to the high ratio of land acquisition cost to total development costs, strategic (or long-term) land banking can provide advantages for cost control and achieving reaching higher margins. This suggests that strategic land banking can be used to lower the ratio of land cost to total development cost, which may result in increasing profit margins for the developers. However, it should be emphasised that this requires long-term investment and is inherently different from acquisition costs for land to be developed in short-term. Lyons (2014) concluded that strategic land holdings are between five and ten years, but that the relative distribution of strategic and short-term land can change dramatically between housebuilders (see Figure 3.1). The Office of Fair Trading (2008) also investigated potential correlations between land banking practices and particular types of housebuilder, but identified no connections with companies of particular size or type of ownership. However, Gibb, McGregor and Munro (1997: 1747) identified geographical differences in land banking and found that “[s]maller firms tended to hold land in more rural locations, whereas larger concerns held urban (generally higher valued) land”. As this study is now somewhat dated, it highlights the need for further research on land banking in relation to different types of builder.

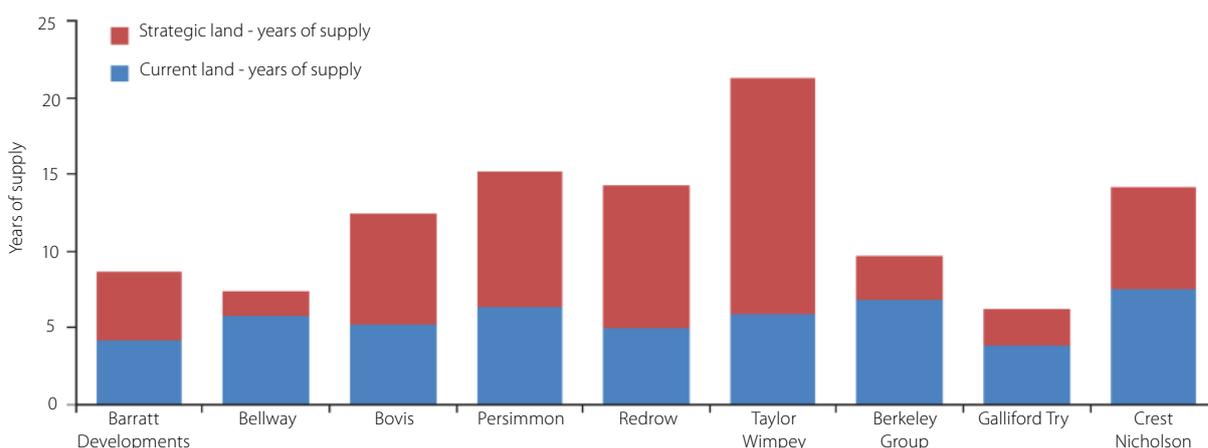


Figure 3.1: Strategic and short-term land banks of major housebuilders

Source: The Lyons Review (2014: 61).

Although the evidence shows some aspects of geographical and locational differences in land banking practice, here the literature is very limited. Nathaniel Lichfield and Partners (2016), found little evidence that land banking hinders the start of construction UK-wide, apart perhaps from in London. It quoted a 2014 report by the Mayor of London on ‘Barriers to Housing Delivery’, which “looked at sites of 20 dwellings or more and reported that only about half of the total number of dwellings granted planning permission every year are built... a lapse rate of circa 50% across London” (ibid: 12). Another study conducted by Dixon, Pocock and Waters (2006) investigated the distribution of brownfield and greenfield sites in land banks of housebuilders. The research discovered that across the research sample “70 per cent of plots with planning consent in land banks were brownfield sites” (ibid: 527-528). The Office of Fair Trading (2008: 134) concluded that housebuilders “with a high proportion of their developments on brownfield sites did tend to landbank more than firms with a lower proportion of their developments on brownfield sites”. According to the report, this may have been a result of associated risks with brownfield developments since they required more complex, risky and longer development processes.

### 3.2.2 Evidence on the impact of land portfolios and land banking on design outcomes and sector innovation

The role of land portfolios in the delivery and the design of new-built housing projects is also covered in the literature. The Scottish Government's (2007) report compared development quality on sites previously held in land banks with those recently acquired as a result of competitive bidding, and suggested that outcomes can be fundamentally different. While the former put less pressure on time and cost, the latter was "more likely to result in 'run of the mill' housing because of the need to maximise the value of the land bid" (ibid: 37). Although the report's claim was mainly related to housebuilders' profit margins and their effect in promoting standardised design, a related paper by Smith, Ferrari and Jenkins (2011) argued that developing on existing land banks can allow more time for design, taking account of the timescale of a development process and allocated time for different stages. However, the direct causal link between ready-to-use land and the time allocated for the design stage was not clear. Despite their limited evidence, these two studies suggest a positive link between the land portfolios of housebuilders and the design processes of housing projects. However, Barlow (1999: 25) argued that housebuilders focus on "optimising their land holdings and timing the sale of dwellings to benefit from house price inflation", which meant that "innovation has tended to be of secondary importance as a competitive strategy for the British speculative housebuilding industry". Barlow thus saw land banking and sales strategies as having a negative effect on innovation. In this sense, the industry is inherently conservative in adopting competitive strategies based around land portfolios and timing of sales rather than innovation in processes, practices and methods.

Evidence from Newhall in Essex also explored the design aspects of the new-built housing areas (including design quality, standardisation and place diversity) in relation to the land. The Newhall experience suggested that "the benefit to place diversity of a clear separation between master developer and parcel developer, with each role played by a different actor" (Adams, Tiesdell and White, 2013: 475), which is directly contrary to the normal land holding practices of housebuilders. The case study explored the concept of smart parcelization which "involves the sub-division of a large development area into different sized parcels to encourage a variety of developers and designers, with explicit linkage to coding requirements within sale or lease contracts to ensure a more focused emphasis on place diversity" (ibid: 470). Although this was a single case study, which the authors acknowledged as an exception rather than common practice, it provides useful evidence of the potential of separating master developer and parcel developer in delivery and design of the housing projects.

### 3.2.3 Research and evidence gaps around land portfolios and land banking

Our review identified clear research and evidence gaps on land portfolios and land banking practices of contemporary housebuilding industry. First, most of the existing evidence on these matters is partial and general reviews such as Callcutt or Barker are dated. The partial nature of the evidence (e.g. covering particular time period, development locations, geographical area) hinders a substantial analysis of the current situation of land portfolios and land banking behaviour of the industry. The Office of Fair Trading (2008) also identified the unavailability of statistical information on land banking as a problem and attributed this to a lack of shared format on reporting land portfolios. Second, a more nuanced approach is required to fully understand land portfolios and land banking practices of housebuilders. The evidence suggests geographical differences in land banks between UK regions and locational differences among land portfolios between greenfield and brownfield areas. However, further research is required to reveal the qualities of these differences. Third, much of the information on the function of land banks in the practice of housebuilders comes from now dated studies, which may not necessarily reflect contemporary practice. Although the recent Letwin (2018) Review does explore the role of land portfolios, its case studies mostly cluster in the South of England, which cannot provide a full picture of the UK-wide practices. Fourth, the distinction between the different types of the land banked by the housebuilders, such as short term and long term (or strategic), is not well discussed or defined in the reviewed studies, although it is touched by some of them. Further exploring the

differences between the land to be developed in short term and long term may potentially be important to reveal the true function of land banks in housebuilders practice and their role in the production of housing delivery and design.

### 3.2.4 Summary

In summary, this section has provided evidence around the following points:

- The role of land banks in the speculative housebuilding practice varies according to their geographical distribution, locations and time span; and there is a need for more research that investigates how these practices vary.
- UK housebuilders' business models do not depend upon profiting from land banking (Ball, Farshchi and Grilli, 2000; Barker, 2004; Callcutt, 2007; Ball, 2013; Lyons, 2014).
- Increased reliance on land banking has been linked to planning uncertainties (OFT, 2008), but land portfolios are also important for security against debt, are critical for balance sheets, and influence investors' confidence in particular housebuilders (Callcutt, 2007; Lyons, 2014).
- Land banking practices among major housebuilders have changed since the 2008 Global Financial Crash (Lyons, 2014).
- Strategic (or long-term) land banking can provide advantages for cost control and achieving reaching higher margins (Karadimitriou, 2013).
- There appears to be no connection between land banking practices and companies of particular size or type of ownership (OFT, 2008).
- Housebuilders with a high proportion of developments on brownfield sites tend to bank more land than firms with a lower proportion of developments on brownfield sites, which may be a result of associated risks with brownfield developments (OFT, 2008).
- Developing on existing land banks can allow more time for design (Scottish Government, 2007; Smith, Ferrari and Jenkins, 2011).
- There are clear research and evidence gaps on land portfolios and land banking: most of the existing evidence is partial and much of the information on the function of land banks in the practice of housebuilders comes from now dated studies.

## 3.3 Product selection

The existing evidence on the mode of delivery of new private housing is characterised by two dominant lines of enquiry. The first is the standardisation of product and process. A small handful of academic studies have added empirical evidence over the past two decades on the utilisation of standard house types and production templates by private housebuilders. These include seminal studies published by Nicol and Hooper (1999), Hooper and Nicol (2000), Leishman (2001), Leishman et al. (2004) and Leishman and Warren (2006). The second dominant line of enquiry relates to the customisation of product. This body of work has investigated the potential incorporation of consumer preferences and choice by private housebuilders to the design and development process. Notable studies include Roy and Cochrane (1999), Barlow and Ozaki (2003), Roy, Brown and Gaze (2003) and Leishman and Warren (2006).

Whilst this existing evidence on standardisation and customisation referenced above is now somewhat dated, a body of more recent work has examined the influencing effects of regulatory, technological, demographic and economic changes on the mode of delivery of private housing. This body of work brings a more contemporary perspective to the choices made by speculative householders towards product design. Notable examples include studies by Osmani and O'Reilly (2009), Lees and Sexton (2014) and Payne and Barker (2018) on low and zero carbon policy and technologies; Pan, Gibb and Dainty (2008) on modular building and modern methods of construction; Adams, Croudace and Tiesdell (2011) on design codes; and, Adams and Payne (2011) on brownfield development policy. In what follows, this evidence is unpacked and discussed in further detail.

### 3.3.1 Evidence on standardisation

#### 3.3.1.1 Use of standard house types

Nicol and Hooper's (1999) research examined the process of change and concentration within the private-sector housebuilding industry over the previous 15 years and assessed the implications for the production of new housing in terms of standard house types. Their study was based on 160 questionnaire responses from housebuilders of all size categories. It revealed that standard house types were widely utilised by both the largest housebuilders and a significant number of smaller housebuilders. As Table 3.1 shows, the use of standard house types became more widespread, the more units a company produced. Interestingly, all housebuilders had increased their use of standard house types since 1990. The study also demonstrated that housebuilding firms producing the most units had the largest number of design types, with one firm stating it was able to produce in excess of 2,000 units per annum while only employing between 11 - 15 design types.

Company size (unit completion per annum)	Utilised standard house types (%)	Increased use of standard house stypes since 1990 (%)	Employed 20+ standard house types (%)
Large (2,000+ units)	90	67	89
Medium (501-2,000 units)	69	75	75
Small (<500 units)	58	77	28

Table 3.1: Use of Standard House Types

Source: Nicol and Hooper (1999).

In a later publication stemming from the same study, Hooper and Nicol (2000) provided more detailed evidence on numbers. Of the 14 respondents they interviewed, three acknowledged utilising 20-29 house types, five listed 30-36 house types, five indicated the use of 50-61 house types and one company recorded over 100 national types, from which each regional office typically used 30-35 standard types. This latter evidence showed an important dimension of how standard house types are utilised in the industry - it revealed that the organisation of the company, and in particular the relationship between the national head office and the regional structure of a company, influenced the use of standard house types. As this suggests, some companies permit a high degree of regional decision-making in relation to questions of design and standardisation, whereas others seek a greater degree of control from the centre.

### 3.3.1.2 Characteristics of standard house types

Evidence on the detailed characteristics of product design was examined in a follow-up study by Hooper and Nicol (2000). Their second stage of research sought to investigate in detail the design practices of the largest housebuilding companies (producing in excess of 1,000 dwellings a year for each year since 1990) through in-depth interviews with senior personnel from 14 firms. In this study, all respondents identified the building 'footprint' as the most essential characteristic, defined as the precise configuration and imprint of the building shell upon the plot. In a majority of cases (10 respondents), this definition includes the internal layout of rooms and circulation space. For a minority of companies (3 respondents), the external design was as significant as the footprint in defining a standard house type, but most companies offered a range of external variations for each of their standard house-type footprints.

Each of the respondents in Hooper and Nicol's (2000) study indicated the employment of professional architectural staff in-house, usually in a separate department within the company, often with the head of the design or technical department serving as a director of the company, and hence having a presence on the management board. However, not all respondent companies had a separate in-house architect department. Forces towards standardisation from within the architects department, in particular the growing take-up of computer aided design (CAD), were also revealed.

Other evidence of the drive towards standardisation from Hooper and Nicol's (2000) study included questions regarding manufacture, and specifically the structural stability of the dwelling, how cost effective it was to manufacture and how well it functioned in its intended role. All respondents agreed that the process of standardisation afforded significant economies in building materials and component purchase. Most respondents also affirmed advantages in terms of quality assurance, confirming that the typical industry approach is to develop continuous incremental improvement or evolutionary adaptation rather than to seek radical design or technological innovation. Several companies had developed 'themed' house type portfolios which included a 'premier' or 'deluxe' range, thus following a trend established in the motor industry. This aspect of 'branding' meant most companies had moved away from a design approach founded on building exactly the same house type 'from Land' s End to John O'Groats', instead introducing some local variation in the treatment of facades.

This evidence is also confirmed by Leishman (2001), who showed that housebuilders have some success in differentiating, or 'branding' their output. Leishman (2001: 132) defines product differentiation as "...a case in which competing firms produce similar but non-identical goods (brands). The goods are closely, though not perfectly, substitutable, which means that demanders of one brand may switch to another brand, particularly following a price rise specific to their brand of choice. An element of demand is 'brand-loyal' so a price increase for a particular brand will not completely remove the demand for it as it would if all firms produced identical non-differentiated goods". Leishman's (2001) study showed how housebuilders were able to differentiate their output not simply in spatial terms, or in terms of physical characteristics, but also in terms of quality, which Leishman interpreted as covering issues such as design, layout, quality of finishes, and quality of appliances etc., not physical characteristics. In a later study, Leishman et al. (2004) revealed that homogeneity, or repeated use of the same house type, was more noticeable at the lower end of the market.

With regard to the structural technology used in constructing the building envelope, Hooper and Nicol's (2000)

study showed an overwhelming dominance of traditional brick-and-block construction with cavity walls. Some social housing divisions of companies had adopted timber-frame construction as well as traditional brick-and-block, and the Scottish regions of several national housebuilding companies used timber-frame extensively. In England and Wales, only two respondents retained a significant timber-frame production at that time, though two others had previously used this method extensively. All respondents cited adverse media publicity that had affected the marketability of timber-frame construction during that particular period. No respondent company had made use of steel-framing, though most had investigated it and rejected it on the grounds of additional costs and potential marketing problems. No respondents at that time considered the concept of 'lifetime homes' to be relevant to the speculative market. Instead, they all provided a range of standard dwelling types and expected purchasers subsequently to move if they needed to adapt to lifecycle changes.

Only one respondent fully integrated the design of standard house types with residential layouts. This company retained a relatively large architectural office at its central headquarters, including landscape architects. Normally, the larger the company, the more house design became separated from layout design. Moreover, Hooper and Nicol (2000) showed that several companies had made determined efforts, at the national level, to reduce the number of standardised house types in the overall portfolio, a trend attributed to increasing concentration within the industry. This is supported by Leishman and Warren (2006), who studied 267 standard house types produced by six different housebuilders. They found even within a constrained building footprint, or relatively narrow area bands, volume house builders appeared to offer a wide range of internally differentiated standardised house types. However, the underlying variation between different house type was attributable to a relatively narrow set of factors, with the result that the wide range of standardised house types that appeared to be on offer collapsed to a small set of internally-differentiated types.

In more recent research undertaken by the Scottish Government (2007), the issue of design in new housebuilding was revisited. This study was based on a questionnaire emailed to 106 Scottish housebuilders, producing 27 returns from companies responsible for 37% of all Scottish private sector housing completions in 2005-06. A second phase involved interviews with a structured sample of 24 firms. A third phase analysed case studies of good practice. The research was undertaken in 2006-07. The study revealed that while internal layout and components, for example, had become more standardised, site layouts and to a lesser extent external 'jackets' had become less standardised. This was considered to reflect three main issues: the nature of land release, with brownfield land and masterplanned sites requiring more individual treatment; the demands of planning and other regulatory systems, with design being seen as a more important consideration; and the changing nature of the construction process, with a shortage of skills and cost benefits from off-site manufacturing of components. Scottish housebuilders tended to see themselves as offering a manufactured product more than a crafted product.

In a later publication, Smith, Ferrari and Jenkins (2011), who undertook the earlier research for the Scottish Government (2007), suggested that developers tend to see design much more in terms of interior design and estate layout than urban design. This meant that design was seen as closely linked to marketability and product branding. Their research also revealed that design quality was seen as more important for executive homes than mid-market or starter homes. However, Smith, Ferrari and Jenkins (2011) emphasised that interviewees found it difficult to define design clearly, referring instead to a wide range of factors, including firm reputation, customer perception, specifications and buildability. Housebuilders' see their products as conveying company 'brands' and 'lifestyle options' which help in marketing.

According to the Scottish Government (2007), individuality of design was generally seen by developers as raising costs, providing less certainty in sales and possibly resulting in a lower quality of product. This applied especially to the internal layout, which tended to be the most standardised feature. Site layouts were dictated by the aim of maximising the number of units on costly land within the narrow parameters of road regulations. Within this context, developers paid least attention to urban design as a design feature, due partly to the fragmented form of land delivery and partly to the general lack of site specific design guidance.

### 3.3.2 Evidence on customisation

How far do housebuilders accommodate consumer preferences and choice into housing design and development process? The evidence suggests that widespread standardisation restricts housebuilders' willingness to allow significant consumer input into housing designs. For example, Leishman et al. (2004) found that few housebuilders carry out research and analysis focused on customers' needs, preferences and satisfaction and concluded that housebuilders are not really customer focused.

Nicol and Hooper (1999) showed that consumer flexibility, where it did exist, was restricted to internal non-structural features rather external aspects of the dwelling, especially in constrained housing markets. Roy, Brown and Gaze (2003), found that market segmentation was wide (two to six bedrooms) but shallow, with customers only able to choose between different types of internal fitting. Subsequent work by Roy and Cochrane (2003) confirmed that speculative builders only offer a limited, fixed range of products, with customer choice usually restricted to superficial interior decoration.

According to Nicol and Hooper (1999), the failure to offer customers a more custom-built property was mainly the result of deliberate company policy, with building control regulations of secondary importance. Barlow and Ozaki (2003) revealed widespread interest among house buyers in greater customisation of house products. Housebuilders were reluctant to respond to this, mainly because of difficulties in capturing consumer requirements, concerns about the acceptability of customisation under regulatory and funding frameworks, and lack of robust supply chains able to cope with the flexibility inherent in mass customised approaches. However, Karadimitriou (2013) found that the forward selling of urban apartments by one housebuilder allowed client preferences to be incorporated into product design, including in relation to layout.

Leishman and Warren (2006) showed how a form of house type customisation could be achieved through the use of house type substitution. Specifically, their results show that broadening the range of internal configuration options, within a given footprint "...increases consumers' share of preference and the demand for an (externally defined) standardized house type" (ibid: 157). In later work, Adams, Tiesdell and White (2013) found that 'smart parcelization' - design-sensitive subdivision reflected in conditions attached to plot sales or leases - could increase diversity of the product.

### 3.3.3 Evidence on the influencing effects of regulatory and technological changes on the mode of delivery

Although the above evidence on standardisation and customisation is now somewhat dated, more recent work investigates how regulatory and technological changes have influenced the mode of delivery of private housing. This provides more contemporary evidence on to the choices made by speculative housebuilders about product design. Collectively, these recent studies reaffirm housebuilders' deep-seated preference for standard products and processes rather than meeting individual customer choice.

#### **3.3.3.1 Regulatory change - energy efficiency and sustainability**

Several studies demonstrate how regulatory changes governing energy efficiency and carbon production have influenced the delivery of speculative housing. Earlier work by Barlow and Bhatti (1997) showed that less than 10% of housebuilders were developing new designs or trying out new technologies in response to changing energy efficiency legislation. Indeed, 76% of housebuilders they surveyed did not think purchasers would more for energy efficient homes. Later work by Dair and Williams (2006) corroborated this, showing that most developers were not convinced there was a demand for sustainable buildings, which they believed cost more. Lovell (2005) confirmed that new products like low energy housing were more costly and had higher risks because they did not fit easily within the existing socio-technical system.

According to Hertin et al. (2003), housebuilders thought climate change could present a major threat to aspects of their business but that well-understood technological measures could reduce this. Later work by Lees and Sexton (2014), Henderson, Ganah and John (2016) and Payne and Barker (2018) all demonstrated that housebuilders were beginning to adapt to tightening regulations around energy efficiency and sustainability. Lees and Sexton (2014) showed how housebuilders were selecting a narrow range of low and zero carbon (LZC) technologies to achieve policy compliance, which was driven by a desire to pursue incremental innovation to minimise modifications. A number of motivating factors for working towards higher than mandatory levels of Code for Sustainable Homes (CSH) were identified by Henderson, Ganah and John (2016), but key among them were planning requirements, internal sustainability policies and the desire to differentiate the company from the competition. Osmani and O'Reilly (2009) showed how lack of innovation within the supply chain was a major barrier to achieving the higher levels of CSH. Since then, policy changes mean that CSH is no longer mandatory.

Payne and Barker (2018) found that whilst some housebuilders were experimenting with a range of innovative renewable technologies to address tightening carbon regulation, most focused on a strategy of minimal adjustment to their existing portfolio of standardised house types in place of technical innovations or entirely new design responses. The reasons for this included a lack of market signals for zero carbon homes; consumer unwillingness to pay a premium for a more energy-efficient home or consider energy efficiency as a significant purchasing decision; the fact that further technical innovations offered no strategic advantage over competitors; cost and technological constraints; and a reluctance to take up innovative renewable technologies to any significant extent because of long-term technical and performance efficacy, supply chain capacity, consumer utility or ongoing maintenance and servicing needs. Payne and Barker's (2018) study confirms the deep resistance by housebuilders to unproven forms of innovation and an unwillingness to challenge their own conventional standardised approach to product design and mass production.

These studies sit somewhat in contrast to the NextGeneration Initiative<sup>2</sup>, an annual sustainability benchmark of the 25 largest UK housebuilders. Under the initiative, companies report against a range of criteria which has developed in collaboration with industry over the past 10 years. Reporting is now in its 11th year. The most recent rankings indicate a wide range of performance in the housebuilding industry's approach to addressing sustainability and to communicating their approach to sustainability.

### **3.3.3.2 Regulatory change - brownfield development & design codes**

The response of speculative housebuilders to policy shifts from the mid-1990s favouring brownfield development is the focus of a small handful of studies. Tiesdell and Adams (2004) argued that the testing design requirements of brownfield development makes successful brownfield developers yield opportunity space in their business strategies to designers. This made investment in better design a necessity rather than a choice on brownfield sites. Later work by Dixon (2007) found that planning requirements for relatively high densities on brownfield land had been a key driver in determining the type of product offered by developers. The increasing importance of apartment building as a result of the brownfield first policy was also evidenced by OFT (2008). In this context, Adams and Payne (2011) investigated the continued importance of construction efficiency in brownfield development and the adaptation of product standardisation to those locations. This usually involved the development of standard apartment types that could be positioned in many brownfield locations, with relatively minor façade changes, rather than any transfer of standard greenfield house types to brownfield locations. Payne (2013) provided more detailed evidence on how housebuilders had successfully applied product standardisation to the brownfield development process through utilising standard structural footprints, mainly for high-density flats and townhouses.

The evidence on how design codes affect the mode of delivery is more limited. One study, by Adams, Croudace and Tiesdell (2011: 301) showed how design codes demanded higher and more specialist skill levels than those currently existing and that more bespoke forms of construction resulted in "a very, very slow build and a very complex build", requiring developers to spend more on marketing.

<sup>2</sup> <https://nextgeneration-initiative.co.uk/>

### 3.3.3.3 Technological change

The evidence on technological change focuses largely on modern methods of construction (MMC). Goodier and Pan (2010) found that the take-up of offsite technologies within the sector was inhibited by limited sharing of knowledge and good practice. Pan, Gibb and Dainty (2008) found that the usage of offsite-MMC among large housebuilders was low and less than publicly perceived. They also revealed that most housebuilders saw only limited potential for complete modular buildings. MMC was rarely integrated into long-term company strategies, with offsite technologies more usually deployed on an ad hoc basis for particular projects. Roberts and Sims (2008) found the most favoured microgeneration technology amongst developers was solar thermal, as it was perceived to be the most established microgeneration technology. This work also identified the main barriers toward the adoption of microgeneration technology by developers. These were the initial cost to both developers and occupiers, long payback periods, and the current market immaturity, reliability and liability of microgeneration products.

## 3.3.4 Summary

In summary, this section has provided evidence around the following points:

- There is an embedded culture of standardisation (Hooper and Nicol, 2000) which is resistant to significant public policy switches (Adams and Payne, 2011; Payne, 2013).
- Greater levels of customisation are difficult given issues around funding and regulatory frameworks and capturing user needs. There is a reluctance to depart from standard house types but a form of house type customisation could be achieved through the use of house type substitution (Leishman and Warren, 2006)
- Design codes can make the build process more demanding (Adams, Croudace and Tiesdell, 2011) but 'smart parcelization' can increase diversity of product (Adams, Tiesdell and White, 2013)
- There are practical difficulties around the efficacy of technological innovations associated with low and zero carbon housing which are difficult to resolve since they increase risk (Payne and Barker, 2018)
- Most housebuilders still need to be convinced of the strength of the demand for greater customisation and energy efficiency homes.

## 3.4 The speed of delivery of new private housing

There is substantive recent evidence about the speed of delivery of new private housing, commonly termed ‘build-out rates’. This comes from three main studies published over the past decade. Two of these were commissioned by the UK Government: the Adams, Leishman and Moore (2009) study, undertaken for the Department for Communities and Local Government prior to the Global Financial Crisis, and the recent Letwin Review (2018) commissioned directly by the Chancellor of the Exchequer and the Secretary of State for Housing, Communities and Local Government. The origin of the third study, undertaken by Nathaniel Lichfield and Partners (NLP) (2016), is less clear, but it may well have been undertaken to highlight the consultancy’s expertise in the field among its housebuilding clients. Although the three studies adopt different methodological approaches, there are important common themes in their conclusions. Several other publications from the last two decades, to which we also refer, reflect and comment on these themes without adding additional empirical research.

The next part of this section summarises the key empirical findings from each of the three main studies about the pace at which new private housing is delivered. The section then moves on to assess the reasons behind that pace. The dominant explanation, explored first, revolves around the concept of market ‘capacity’ or ‘absorption’. Alternative, but subsidiary explanations, considered thereafter, concern a variety of potential production impediments, such as shortages of land, labour or building materials. Having evaluated these different explanations, the section concludes with a review of the potential policy solutions which authors have proposed to speed up build-out rates.

### 3.4.1 Factual evidence on build-out rates

The three main studies mentioned above explore build-out rates from different perspectives. The focus of Adams, Leishman and Moore (2009) is on the individual sales outlets at which builders operate at the local level, while recognising, of course, that large development sites are often split up into separate outlets operated by different builders. The research data came from a survey of all housebuilders in England producing 250 or more homes a year, of which there were 45 companies at the time of the research. The 18 companies responding to the survey were responsible for building almost a third of new dwellings completed in England at that time. Respondents were asked to state the optimal average sales rates for typical 200-unit developments at greenfield and brownfield locations. The mean results were 59 units sold per annum for greenfield houses and 67 for brownfield apartments. Crucially, sales rates were seen by respondents as the prime determinant of build-out rates, with the pace of development dependent on how fast newly-built homes could be sold, rather than on how fast construction technology might allow them to be produced. Despite their higher figures, Adams, Leishman and Moore (2009) echoed the perception of the earlier Government-commissioned Callcutt Review (2007: 41) which had reported that “It is almost an article of faith, universally held by housebuilders, that there is a limit of 35-50 homes which can be sold from one outlet in a single year; to achieve more rapid build-out requires prices to be reduced.”

The NLP (2016) study focused not on sales outlets but on development sites. It investigated 70 large sites across England, each intended to produce between 500 and 15,000 dwellings, along with 83 smaller sites due to produce between 50 and 499 dwellings. The report made an important distinction between three stages in the delivery of strategic housing sites, namely securing an allocation, securing a planning permission and on-site completions. The final stage was subdivided between ‘opening-up’ or infrastructure works, and the build period from the very first housing completion to the completion of the entire development. To an extent, annual build-out rates were found to reflect site size, so for example sites of less than 100 units produced on average 27 new dwellings per annum, while the comparative figure for those of 2000 units or more was 161 per annum. Crucially, however, the relationship between size and output was not proportionate, so that average annual build-out rates for sites of 2000 or more units was no more than 2.5 times that of sites of between 100 and 499 units, despite being at least four times larger.

Significantly, the number of different sales outlets on each site was seen as the key to explaining this since “it will not always be possible to increase the number of outlets in direct proportion to the size of site – for example due to physical obstacles (such as site access arrangements) to doing so; and overall market absorption

rates means the number of outlets is unlikely to be a fixed multiplier in terms of number of homes delivered" (NLP, 2016: 14). The study also found that greenfield sites were built out approximately 50% quicker than brownfield ones, and that sites with at least 30% affordable housing also tend to be developed faster.

The Letwin Review was again focused on development sites, rather than directly on sales outlets. Its attention was concentrated on areas of very high housing demand in England in which it analysed 15 large sites, each with an intended output of between 1,000 and 15,000 units and together due to produce 70,000 new dwellings. The median build-out period for the 15 sites was found to be 15.5 years with the implication that on average roughly 6.5% of each site was developed each year. Significantly, however, "the larger the site, the more likely it is to have a low build out rate" (Letwin 2018b: 10). Although it is hard to make direct comparison between the Letwin Review and the NLP study, both indicate that a large development site with an intended output of 2,000 units might build out at a rate of around 130 per annum. But reflecting Adams, Leishman and Moore (2009), to achieve even this rate would require the site to be split up into two or possibly three different sales outlets.

The essential question to which we now turn, as raised by all three studies but neatly summarised by Letwin (2018a: 1), is that of discovering "why, once major house-builders have obtained outline planning permission to build large numbers of homes on large sites, they take as long as they do to build those homes".

### 3.4.2 Market-based explanations of build-out rates.

The most common explanation for the pace at which new private housing is developed was well summarised by Lyons (2014: 66): "The speed at which sites are built out is dictated by market demand for the finished houses". As this suggests, local housing markets are considered to have only limited capacity to absorb new homes if prevailing price levels in the second-hand market are to be maintained. Housebuilders will thus explain their production rates by reference to the linked concepts of market capacity and market absorption. These concepts might seem a simple and obvious explanation of build-out rates, but they can be interpreted critically or uncritically.

A good example of the uncritical acceptance of these concepts can be found in the Office of Fair Trading (OFT) (2008: 55) market study, which stated that "the homebuilder will build at a rate which will satisfy the demand in the local market at or above the existing price levels." According to the OFT, it would be unprofitable for builders to sell new homes below these price levels as any benefit gained from faster sales and lower interest costs would be more than offset by price reductions. A slightly more critical view was taken by the Letwin Review (2018b: 14) which recognised that the term 'absorption rate' is a relative concept that refers to "the rate at which new homes can be absorbed without reducing the price of the homes below the price assumed for the purposes of the land valuation" rather than an "absolute absorption rate in the sense of the rate at which the market will absorb the homes at any price." Crucially, then, absorption rates are intricately connected to, and indeed derive from, financial appraisals undertaken by housebuilders at the time of land purchase. They are certainly not some magical concept delivered from on high by distant market forces. Yet, in his final report, Sir Oliver Letwin (2018c: 8-9) stated that "it would not be sensible to attempt to solve the problem of market absorption rates by forcing the major house builders to reduce the prices at which they sell their current, relatively homogenous products. This would, in my view, create very serious problems not only for the major house builders but also, potentially, for prices and financing in the housing market, and hence for the economy as a whole."

Adams, Leishman and Moore (2009: 298) offered a more critical take on absorption rates by arguing that "the concept of market capacity needs to be viewed essentially as a commercial construct, contingent on a set of relationships between the state and the market which delineate the present structure of speculative house-building provision. The failure to recognise this helps to ensure that this construct is embedded within the culture of the industry and then transmitted into, and reinforced by, the decision-making processes of a planning system that sees supply in quantitative terms, but not does readily connect quantity to price."

They suggested that intense competition between builders wishing to gain control of limited supplies of land in

areas of high demand encouraged them to take the most optimistic view possible of future sale prices in order to generate the bullish financial appraisals needed to outbid their competitors. Adams, Leishman and Moore (2009) argued that housebuilders could then manage the production of new homes at a rate intended to secure predicted sale prices precisely because the planning system limited the supply of land and thus restricted the potential for undercutting by competitors at other locations. These findings chime with the Gibb's (1999) earlier view that production rates are influenced by what housebuilders perceive as their competitors' likely strategies. More recently, Leishman (2015) found that the probability that development will commence on a site that already has the benefit of planning permission will actually decline as more competing developments come on stream.

Recent parliamentary reports have been as critical of this system of production. The House of Lords Select Committee of Economic Affairs (2016: 56) contended that "The pace of building by private building companies is constrained by their business model which is to maximise the profit made from a site and not the speed of delivery." More recently, the House of Commons Communities and Local Government Committee (2017) argued that, as well as building more slowly, housebuilders reduce affordable housing provision and increase densities as a result of paying inflated prices for land. The Committee concluded that, while it was rational commercial behaviour for housebuilders to build out slowly in order to avoid saturating local housing markets, what might appear a "sound business model" to the industry was "not one that is in the country's best interests" (ibid, 2017: 7). Having explored these market-based explanations, we now move on to consider alternative, but subsidiary explanations of the pace at which private housing is developed.

### 3.4.3 Alternative explanations of build-out rates

In contrast to market-based explanations, which focus on the demand side, alternative explanations of slow build-out rates concentrate on the supply side, exploring either the nature of the production process or specific constraints that might slow production. The traditional way in which most new houses are produced has already been highlighted in this report. This means that, with some notable exceptions, the reluctance of most UK housebuilders' to innovate (Barlow, 1999), adopt supply chain strategies and demonstrate supply chain awareness (Barker and Naim, 2008) or move over at any scale to modern and offsite methods of construction (Goodier and Pan, 2010) limits their ability to speed up production even if they wished to do so. However, all these arguments beg the question of whether current modes of housing construction determine the speed of production or whether they simply reflect the speed at which housebuilders, for very different reasons, choose to produce. Here, Adams, Leishman and Moore (2009: 305) argued strongly that "the speed at which sites are developed is determined by target sales, not production efficiency." They found that the most common reaction by housebuilders to higher than expected demand was to raise prices rather than increase production, even when there were few logistical constraints to increased production. This chimes with Callcutt's (2007: 31) conclusion that: "Housebuilders also need to manage the pace of build-out to maximise profits from a site ... sheer speed may be relatively less important."

Letwin (2018b) investigated seven potential supply-side constraints that he thought might slow down build-out rates, namely lack of transport infrastructure, difficulties of land remediation, delayed installations by utility companies, constrained site logistics, limited availability of capital, limited supplies of building materials, and limited availability of skilled labour. Somewhat to his surprise and with one exception, he found no evidence that any of these factors accounted for slow build-out rates. The exception was a serious lack of skilled bricklayers, which he considered would "create a significant biting constraint" (ibid: 25) on policy attempts to increase build-out rates on large development sites. Otherwise, constraints such as lack of infrastructure or contamination were normally resolved before his 'build-out clock' began ticking and were thus excluded from this analysis. He also considered that any potential capital constraints were not "biting at present" (ibid: 21), that those involving shortage of materials were only short-term, and that in relation to logistics, "if a faster rate of build out were thought to be feasible for other reasons, developers and major house builders would have all the capabilities required to organise entry to (and working on) different parts of large sites simultaneously in a way that is compatible both with efficient construction and with making life tolerable for early inhabitants" (ibid).

The essence of Letwin's analysis is that housebuilders face no long-run production barriers to increasing build-out rates, should they wish to do so. This conclusion neither conflicts with, nor is it challenged by, any earlier research in the field. Indeed, as we next explore, the principal emphasis on potential solutions emerging from the literature to slow build-out rates concern the linkage between planning policy, land supply and market demand, rather than making housing construction smoother or more efficient.

### 3.4.4 Potential solutions

The earlier Barker (2004) and Callcutt (2007) Reviews explored whether government should seek to control build-out rates directly. Barker (2004) considered whether developers should be charged for every uncompleted house on a permissioned site, but concluded that negative side effects, included reduced cash flow, may actually cause development to fall as marginal sites became unviable. Callcutt (2007) examined the potential for local authorities to set minimum build-out rates as a planning condition, but felt this would create administrative cost and delay, increase risk and impede the commercial discretion of housebuilders.

Callcutt further argued that because housing development land is often in short supply, housebuilder are cautious that they might otherwise be in using up their existing land supplies too rapidly. Taking this further, one medium-sized builder interviewed by Adams, Leishman and Moore (2009: 309) expressed a commonly-held view in the industry on how to speed up build-out rates: "Do something about the planning regime. That is the only thing! The house-building industry is incredibly skilful at doing things differently and faster and well, but there is just not enough land coming from the planning system. If the government wants to meet its targets, it's got to release enough land for that to happen, simple as that." Surprisingly, however, very few of the housebuilders interviewed for the research thought that significant increases in land supply would result in significant increases in actual production, with most predicting any impact would be marginal or non-existent. This suggests a more complex relationship between planning constraints and build-out rates than often thought.

More recent attention has focused on whether government can speed up build-out rates by insisting on more diverse range of producers and indeed products at any large development site. By drawing in customers who might not otherwise prefer, or be able to afford, newly-built, this broadens the market appeal of new developments and thus works with the grain of market-based explanations for slow build-out rates. There is strong evidence that such an approach can work where land is originally owned by the public sector. For example, according to IPPR (2011: 43), the then Homes and Communities Agency's Public Land Initiative "used a joint venture model to capture a percentage of land value gains for the public sector while setting out strict criteria for lower profit margins and fast build-out rates to spur investment activity". Interesting, this mainly attracted domestic and foreign construction companies willing to accept lower margins for lower risk, rather than the traditional UK housebuilders.

The core recommendation of the recent Letwin Review (2018c: 6) is to embed the principle of diversification in the planning system by adopting "a new set of planning rules specifically designed to apply to all future large sites (initially those over 1,500 units) in areas of high housing demand, requiring those developing such sites to provide a diversity of offerings, in line with diversification principles in a new planning policy document." This would indeed be a radical departure from market-led planning and, if enthusiastically taken up by central and local government, could have profound implications for future structure and organisation of UK housebuilding.

### 3.4.5 Summary

In summary, this section has provided evidence around the following points:

- The pace of development appears to depend more on how fast newly-built homes can be sold, rather than on how fast they can be produced (Adams, Leishman and Moore, 2009).
- Annual build-out rates may reflect site size; however, the relationship between size and output appears not to be proportionate, and the number of different sales outlets on a site may be key to explaining this (NLP, 2016).
- There is evidence to suggest that larger sites have lower build out rates (Letwin, 2018b).
- There is conflicting evidence on whether greenfield or brownfield sites appear to be built out more quickly (Adams, Leishman and Moore, 2009; NLP, 2016) However, sites with more affordable housing do tend to be developed faster (NLP, 2016).
- The most common explanation for the pace at which new private housing is developed revolves around the concept of market 'capacity' or 'absorption' (OFT, 2008; Lyons, 2014; Letwin, 2018b).
- Alternative explanations include the reluctance of most UK housebuilders' to innovate (Barlow, 1999), adopt supply chain strategies and demonstrate supply chain awareness (Barker and Naim, 2008) or move over at any scale to modern and offsite methods of construction (Goodier and Pan, 2010).
- Letwin (2018b) investigated seven potential supply-side constraints that he thought might slow down build-out rates, and found only one – a serious lack of skilled bricklayers – accounted for slow build-out rates.

## 4. Conclusion

This study set out to evaluate some of the key strategies of the UK speculative housebuilding sector in relation to land, planning and development from sources published between 1997 and 2018. We structured our systematic review of previous knowledge around four lines of enquiry: land acquisition methods and processes; the composition of land portfolios and questions of land 'banking'; product selection and the mode of housing delivery; and the speed of housing delivery, including build-out rates. We reviewed 62 primary sources from the academic and grey literature and undertook two roundtables with industry representatives to sense check our findings.

Whilst the systematic review has brought together a substantive amount of research, it has also highlighted four fundamental points worthy of reflection. The first is the dated nature of the evidence. This was particularly evident in Section 3.3, on product selection and mode of delivery, where the deep-seated tendencies of housebuilders toward standardisation of product and process and the minimal inclusion of customer choice and preference has not been substantially revisited since the early 2000s. This is also true of land acquisition methods and processes, although to a lesser extent. In contrast, there is substantive recent evidence about the speed of delivery of new private housing both from academic and grey literature.

Second, researchers have can tend to homogenise the industry and focus their investigations on mainstream volume housebuilders. Whilst industry concentration is an endemic feature of UK speculative housebuilding and is often used to justify methodological approaches, housing providers such as retirement, regeneration and sustainability specialists are overlooked. Furthermore, whereas some work has sought to emphasise the heterogeneity of business strategies among housebuilders, the majority of the evidence appears to homogenise them. This is also true of the balance between studies examining the national / head office businesses, of which there are more, and those focusing on the more geographically dispersed divisional businesses, of which there are less. This risks minimising the impact of spatial and political idiosyncrasies at the divisional level and underplaying the relationship between head office and divisions as a means of explaining business decision making. A more nuanced approach to studying the industry would address this challenge.

Third is the tendency for research to be geographically benign and underplay the distinctions in policy and spatiality. A significant amount of the evidence purported to be UK or British based but there was very little, if any discussion of Welsh or Northern Irish housebuilding. In contrast, Scottish housebuilding was reasonably well represented in the research.

Finally, the review has pointed to a key research challenge for future work on the housebuilding industry, which is that of developing a richer theoretical understanding of how the industry operates as a basis for stronger empirical investigation. Much of the published work is atheoretical and that which is not tends to be led by neoclassical economists. Moreover, whilst the single disciplinary approaches dominating the evidence have yielded focused insights, a more rounded understanding of the operations of the industry and their broader consequences appears to require a range of different disciplinary perspectives.

# Bibliography

NB: This bibliography includes a list of all relevant sources, whether cited in the main text or not. Items marked (\*\*) indicate the 62 primary publications reviewed for the report. Items marked (\*) indicate secondary sources.

- ADAMS, D., CROUDACE, R. & TIESDELL, S. 2011. Design codes, opportunity space, and the marketability of new housing. *Environment and Planning B: Planning and Design*, 38 (2), 289-306.\*\*
- ADAMS, D., LEISHMAN, C. & MOORE, C. 2009. Why not build faster? Explaining the speed at which British house-builders develop new homes for owner-occupation. *Town Planning Review*, 80 (3), 291-314.\*\*
- ADAMS, D., LEISHMAN, C. & WATKINS, C. 2012. Housebuilder networks and residential land markets. *Urban Studies*, 49 (4), 705-720.\*\*
- ADAMS, D., MAY, H. & POPE, T. 1992. Changing strategies for the acquisition of residential development land. *Journal of Property Research*, 9 (3), 209-226.\*\*
- ADAMS, D. & PAYNE, S. 2011. 'Business as Usual?' Exploring the design response of UK speculative housebuilders to the brownfield development challenge', in Tiesdell, S. and Adams, D. (eds.), *Urban Design in the Real Estate Development Process*. Oxford: Blackwell, 199-218.\*\*
- ADAMS, D., PAYNE, S. & WATKINS, C. 2008. 'Corporate social responsibility and the UK housebuilding industry', in Murray, M. and Dainty, A. (eds) *Corporate Social Responsibility in the Construction Industry*. Routledge: Oxon, 235-258.\*\*
- ADAMS, D., TIESDELL, S. & WHITE, J. T. 2013. Smart parcelization and place diversity: reconciling real estate and Urban design priorities. *Journal of Urban Design*, 18 (4), 459-477.\*\*
- ARCHER, T. & COLE, I. 2014. Still not plannable? Housing supply and the changing structure of the housebuilding industry in the UK in 'austere' times. *People, Place and Policy*, 8 (2), 97-112.\*\*
- ARCHER, T. & COLE, I. 2016. Profits before volume? Major housebuilders and the crisis of housing supply. Centre for Regional Economic and Social Research: Sheffield Hallam University, Sheffield.\*\*
- AUBREY, T. 2015. *The Challenge of Accelerating UK Housebuilding: A Predistribution Approach*. Policy Network: London.\*
- BAICHE, B., WALLIMAN, N. & OGDEN, R. 2006. Compliance with building regulations in England and Wales. *Structural Survey*, 24 (4), 279-299.\*\*
- BALL, M. 1983. *Housing Policy and Economic Power: The Political Economy of Owner Occupation*. Methuen: London.
- BALL, M. 2005. *The labour needs of extra housing output: can the housebuilding industry cope?* Home Builders Federation and Construction Industry Training Board: London.\*\*
- BALL, M. 2010. *The housebuilding industry: promoting recovery in housing supply*. Department for Communities and Local Government: London.\*\*
- BALL, M. 2013. Spatial regulation and international differences in the housebuilding industries. *Journal of Property Research*, 30 (3), 189-204.\*\*
- BALL, M., FARSHCHI, M. & GRILLI, M. 2000. Competition and the persistence of profits in the UK construction industry. *Construction Management and Economics*, 18 (7), 733-745.\*\*
- BARKER, K. 2004. *Review of Housing Supply: Delivering Stability: Steering our Future Housing Needs—Final Report: Recommendations*. Office of the Deputy Prime Minister: London.\*\*
- BARKER, R. & NAIM, M. M. 2008. Is supply chain thinking permeating the UK housebuilding industry? Findings from a survey of UK housebuilders. *International Journal of Logistics-Research and Applications*, 11 (1), 67-80.\*\*
- BARLOW, J. 1999. From craft production to mass customisation. Innovation requirements for the UK housebuilding industry. *Housing Studies*, 14 (1), 23-42.\*\*

- BARLOW, J. & BHATTI, M. 1997. Environmental performance as a competitive strategy? British speculative house builders in the 1990s. *Planning Practice and Research*, 12 (1), 33-44.\*\*
- BARLOW, J., CHILDHOUSE, P., GANN, D., HONG-MINH, S., NAIM, M. & OZAKI, R. 2003. Choice and delivery in housebuilding: Lessons from Japan for UK housebuilders. *Building Research and Information*, 31 (2), 134-145.\*
- BARLOW, J. & OZAKI, R. 2003. Achieving 'customer focus' in private housebuilding: Current practice and lessons from other industries. *Housing Studies*, 18 (1), 87-101.\*\*
- BARTLETT, K., POTTER, M., MEIKLE, J., DUFFY, F., OZAKI, R., HAKES, J., YOUNG, R., & HOOPER, A. 2002. *Consumer Choice in Housing: The Beginnings of a House Buyer Revolt*. Joseph Rowntree Foundation: York.\*
- BENTLEY, D. 2017. *Building homes faster? A commentary on the government's plans for increasing the pace of delivery*. Civitas: London.
- BRAMLEY, G. 2018. *Housing supply requirements across Great Britain: for low-income households and homeless people*. Crisis and National Housing Federation: London
- BURNS, N. 2004. Negotiating difference: Disabled people's experiences of housebuilders. *Housing Studies*. 19 (5), 765-780.\*
- CALLCUTT, J. 2007. *The Callcut Review of Housebuilding Delivery*. Department for Communities and Local Government: London.\*\*
- DAIR, C. M. & WILLIAMS, K. 2006. Sustainable land reuse: The influence of different stakeholders in achieving sustainable brownfield developments in England. *Environment and Planning A: Economy and Space*, 38 (7), 1345-1366.\*\*
- DCLG. 2017. *Fixing our broken housing market*. Department for Communities and Local Government: London.
- DIXON, T. 2006. Integrating sustainability into brownfield regeneration: rhetoric or reality? - An analysis of the UK development industry. *Journal of Property Research*, 23 (3), 237-267.\*\*
- DIXON, T. 2007. The property development industry and sustainable urban brownfield regeneration in England: an analysis of case studies in Thames Gateway and Greater Manchester. *Urban Studies*, 44 (12), 2379-2400.\*\*
- DIXON, T., POCOCK, Y. & WATERS, M. 2006. An analysis of the UK development industry's role in brownfield regeneration. *Journal of Property Investment and Finance*, 24 (6), 521-541.\*\*
- GIBB, K. 1999. Regional differentiation and the Scottish private housebuilding sector. *Housing Studies*, 14 (1), 43-56.\*\*
- GIBB, K., MCGREGOR, A. & MUNRO, M. 1997. Housebuilding in a recession: a regional case study. *Environment and Planning A*, 29, 1739-1758.\*\*
- GILLEN, M. & FISHER, P. 2002. Residential developer behaviour in land price determination. *Journal of Property Research*, 19 (1), 39-59.\*\*
- GLENDINNING, M. & WATTERS, D. 2015. *Home Builders - Mactaggart & Mickel and the Scottish Housebuilding Industry* (2nd edition). RCAHMS: Edinburgh.\*
- GOLLAND, A. & BOELHOUWER, P. 2002. Speculative housing supply, land and housing markets: a comparison. *Journal of Property Research*, 19 (3), 231-251.\*\*
- GOODIER, C. & PAN, W. 2010. *The future of UK housebuilding*. RICS research report. RICS: London.\*\*
- HBF & the National House-Building Council. 2018. *National New Home Customer Satisfaction Survey*. Home Builders Federation: London.\*
- HENDERSON, C., GANAHA, A. & JOHN, G. A. 2016. Achieving sustainable homes by 2016 in the UK: the current status. *Environment, Development and Sustainability*, 18 (2), 547-560.\*\*
- HERTIN, J., BERKHOUT, F., GANN, D. M. & BARLOW, J. 2003. Climate change and the UK house building sector: perceptions, impacts and adaptive capacity. *Building Research and Information*, 31 (3-4), 278-290.\*\*
- HOOPER, A. & NICOL, C. 1999. The design and planning of residential development: standard house types in the 1990s speculative housebuilding industry. *Environment and Planning B: Planning and Design*, 26 (6), 793-805.\*\*

- HOOPER, A. & NICOL, C. 2000. Design practice and volume production in speculative housebuilding. *Construction Management and Economics*, 18 (3), 295-310.\*\*
- HOUSE OF COMMONS Communities and Local Government Committee. 2017. Capacity in the Homebuilding Industry, Tenth Report of Session 2016-17. House of Commons: London.
- HOUSE OF LORDS 2016. Building More Homes. Select Committee on Economic Affairs 1st Report of Session 2016-17. House of Lords: London.\*\*
- IPPR. 2011. We Must Fix It: Delivering Reform of the Building Sector to Meet the UK's Housing and Economic Challenges. Institute for Public Policy Research: London.
- KARADIMITRIOU, N. 2005. Changing the way UK cities are built: the shifting urban policy and the adaptation of London's housebuilders. *Journal of Housing and the Built Environment*, 20 (3), 271-286.\*\*
- KARADIMITRIOU, N. 2013. Planning policy, sustainability and housebuilder practices: the move into (and out of?) the redevelopment of previously developed land. *Progress in Planning*, 82, 1-41.\*\*
- LEES, T. & SEXTON, M. 2014. An evolutionary innovation perspective on the selection of low and zero-carbon technologies in new housing. *Building Research and Information*, 42 (3), 276-287.\*\*
- LEISHMAN, C. 2001. House building and product differentiation: an hedonic price approach. *Journal of Housing and the Built Environment*, 16 (2), 131-152.\*\*
- LEISHMAN, C. 2015. Housing supply and suppliers: are the microeconomics of housing developers important? *Housing Studies*, 30 (4), 580-600.\*\*
- LEISHMAN, C., ASPINALL, P. MUNRO, M. & WARREN, F. 2004. Preferences, quality and choice in new-build housing. Joseph Rowntree Foundation: York.\*\*
- LEISHMAN, C., JONES, C. & FRASER, W. 2000. The influence of uncertainty on house builder behaviour and residential land values. *Journal of Property Research*, 17 (2), 147-168.\*\*
- LEISHMAN, C. & WARREN, F. 2006. Private housing design customization through house type substitution. *Construction Management and Economics*, 24 (2), 149-158.\*\*
- LETWIN, O. 2018a. Independent Review of Build Out: Preliminary Update. Ministry of Housing, Communities and Local Government: London.
- LETWIN, O. 2018b. Independent Review of Build Out: Draft Analysis. Ministry of Housing, Communities and Local Government: London.
- LETWIN, O. 2018c. Independent Review of Build Out: Final Report. Ministry of Housing, Communities and Local Government: London.
- LOVELL, H. 2005. Supply and demand for low energy housing in the UK: insights from a science and technology studies approach. *Housing Studies*, 20 (5), 815-829.\*\*
- LYONS, M. 2014. The Lyons Housing Review. Mobilising across the nation to build the homes our children need. Report commission by, and reporting to, the Leader of the Labour Party. Digital Creative Services: London.\*\*
- MACDONALD, K. & KILMAN, A. 2007. Opening up the debate: exploring housing land supply myths. A report based on evidence presented by the Royal Town Planning Institute (RTPI) to the Callcutt Review of House Building Delivery. RTPI: London.\*
- NATHANIEL LICHFIELD & PARTNERS 2015. The economic footprint of UK house building. Home Builders Federation and NLP: London.\*\*
- NATHANIEL LICHFIELD & PARTNERS 2016. Start to finish: how quickly do large-scale housing sites deliver? NLP: London.\*\*
- NICOL, C. & HOOPER, A. 1999. Contemporary change and the housebuilding industry: Concentration and standardisation in production. *Housing Studies*, 14 (1), 57-76.\*\*
- OFT. 2008. Homebuilding in the UK: a market study. Office of Fair Trading: London.\*\*

- OSMANI, M. & O'REILLY, A. 2009. Feasibility of zero carbon homes in England by 2016: A house builder's perspective. *Building and Environment*, 44, 1917-1924.\*\*
- OZAKI, R. 2003. Customer-focused approaches to innovation in housebuilding. *Construction Management and Economics*, 21 (6), 557-564.\*
- PAN, W. 2010. Strategies for managing innovation in UK housebuilding. *Engineering, Construction and Architectural Management*, 17 (1), 78-88.\*\*
- PAN, W., DAINTY, A.R.J. & GIBB, A.G.F. 2012. Establishing and weighting decision criteria for building system selection in housing construction. *Journal of Construction Engineering and Management*, 138 (11), 1239-1250.\*\*
- PAN, W., GIBB, A.G.F. & DAINTY, A.R.J. 2007. Perspective of UK housebuilders on the use of offsite modern methods of construction. *Construction Management and Economics*, 25 (2), 183-194.\*\*
- PAN, W., GIBB, A.G.F. & DAINTY, A.R.J. 2008. Leading UK housebuilders' utilization of offsite construction methods. *Building Research and Information*, 36 (1), 56-67.\*\*
- PAYNE, S. 2013. Pioneers, pragmatists and sceptics: speculative housebuilders and brownfield development in the early twenty-first century. *Town Planning Review*, 84 (1), 37-62.\*\*
- PAYNE, S. 2015. Exploring the impact of the recession on British volume housebuilders: a behavioural analysis. *Built Environment*, 41 (2), 271-288.\*\*
- PAYNE, S. 2016. Examining housebuilder behaviour in a recovering housing market. Recommendations for improving Britain's housing supply. Report: University of Sheffield.
- PAYNE, S. & BARKER, A. 2018. Carbon regulation and pathways for institutional transition in market-led housing systems: a case study of English housebuilders and zero carbon housing policy. *Environment and Planning E: Nature and Space*, 1 (4), 470-493.\*\*
- ROBERTS, C. & SIMS, S. 2008. Cashing in on the green machine: are developers in the UK missing out? *International Journal of Housing Markets and Analysis*, 1 (4), 362-378.\*\*
- ROY, R., BROWN, J. & GAZE, C. 2003. Re-engineering the construction process in the speculative housebuilding sector. *Construction Management and Economics*, 21 (2), 137-146.\*\*
- ROY, R. & COCHRANE, S. P. 1999. Development of a customer focused strategy in speculative house building. *Construction Management and Economics*, 17 (6), 777-787.\*\*
- SCOTTISH GOVERNMENT 2007. Design at the Heart of House-building. Scottish Government: Scottish Government.\*\*
- SERIN, B. 2018a. Cross Disciplinary Review of Placemaking Literature. CaCHE Working Paper: University of Glasgow, Glasgow.
- SERIN, B. 2018b. Review of Housing Supply Literature. CaCHE Working Paper: University of Glasgow, Glasgow.
- SMITH, H., FERRARI, S. G. & JENKINS, P. 2011. The role of planning in housing design: design implications of land-use management. *Environment and Planning C: Government and Policy*, 29, 502-519.\*\*
- TIESDELL, S. & ADAMS, D. 2004. Design matters: major house builders and the design challenge of brownfield development contexts. *Journal of Urban Design*, 9 (1), 23-45.\*\*
- WELLINGS, F. 2006. Private Housebuilding Annual. The Building Group: London.

## Appendix: CaCHE Evidence Review Guidance

### Defining the Review (Step 1)

Review's aim/purpose:

The aim of the project is to evaluate how far the speculative development sector is meeting demand and need in the housing market. To achieve this aim, we will undertake a systematic review of previous knowledge on the following 4 key areas of enquiry:

1. Land acquisition methods and processes;
2. The composition of land portfolios and questions of land 'banking';
3. Product selection and the mode of housing delivery, including construction methods; and,
4. The speed of new private housing delivery, including build out rates.

### Research objectives:

1. Establish a comprehensive knowledge and evidence base of how speculative housebuilders acquire, process and build out housing land to determine how they supply system currently works;
2. Consider the current limitations in its operation;
3. Evaluate whether, and to what extent, the industry is able to address new demands in the supply side of the housing market; and,
4. Reflect on how policy solutions brought forward to address housing supply problems have been effective or otherwise.

### Piloting (Step 1 continues)

#### Piloting for identifying the keywords and data extraction categories:

Completed in the second week of March 2018. Each project team member reviewed 6 papers from a pool of 8 papers and extracted data according to draft data extraction categories. The results were used to identify keywords and queries, and to update data extraction categories.

#### Identifying Keywords and Queries (Step 1 continues)

Subject Keywords and Queries- The subject keywords will be combined with specific keywords to create the queries

**Query 1:** "house building" OR housebuilding OR "residential developer" OR "house builder" OR housebuilder OR "speculative housebuilder" OR "speculative house builder" OR "volume house builder" OR "volume housebuilder" OR "new homes" OR "residential construction" OR "private house builder" OR "private housebuilder"

**Query 2:** ("land development" OR "land market" OR "land supply" OR "land bank" OR "land banking" OR "housing land" OR "built out rate" OR completion OR "Help to Buy") AND (house OR housing OR home OR "new homes" OR residential OR dwelling OR "housing supply")

**Query 3:** ("residential design" OR "housing design" OR "green housing" OR "sustainable home" OR "sustainable housing") AND (house OR housing OR home OR "new homes" OR residential OR dwelling OR "housing supply")

<b>Agreeing on the Search Strategy (Step 2)</b>
<p>Conduct a scan to “get a feel of the literature”</p> <p>Criteria/approach: General review. Justification: For familiarising the research team with the recent literature.</p>
<p><b>Search Medium - Where to look</b></p> <ul style="list-style-type: none"> <li>● First phase: broad index search. Scopus and Web of Science. Justification: For reaching evidence beyond the circles of the research group.</li> <li>● Second phase: focused search. Key journals, key institutions and key papers (To be identified by CaCHE team. Justification: To make sure exhaustive review of the evidence published by the known sources. To cover both academic and grey literature.</li> <li>● Third phase: follow-up/snowballing references on the reviewed sources. For reaching the primary sources and possible further evidence.</li> </ul>
<p><b>Type of the Sources - What to review</b></p> <ul style="list-style-type: none"> <li>● Peer reviewed journal articles:</li> <li>● Building Research and Information</li> <li>● Construction Management and Economics</li> <li>● Environment and Planning A</li> <li>● Environment and Planning B</li> <li>● Housing Studies</li> <li>● Housing Theory and Society</li> <li>● International Journal of Housing Markets and Analysis</li> <li>● Journal of Housing and the Built Environment</li> <li>● Journal of Property Research</li> <li>● Progress in Planning</li> <li>● Town Planning Review</li> <li>● Urban Studies</li> </ul> <p>Book chapters Grey literature</p>

### **Newspapers:**

Newspapers are reviewed via Nexis of which access is provided by the University of Glasgow library. The review is limited with the following newspapers:

- The Times
- The Daily Telegraph
- The Guardian
- The Independent
- The Sunday Times
- The Sunday Telegraph
- The Observer

The news articles with substantial content will be included and short daily news pieces will be excluded. Nexis review for news articles limited to “report” and “investigation” (exported as word document) – reports used as news sources are identified.

**Criteria/approach:** Inclusive

**Justification:** To produce an exhaustive but focused evidence review (by including both academic and grey literature).

### **Excluded sources - What NOT to review**

Books (Note: We include some seminal books)  
PhD theses and dissertations  
Conference papers

### **Creating a Main Database (Step 3)**

**In this phase, the sources compiled by the search queries put together and a main database is created before the review is started.**

**Tool/Software:** Endnote

#### **The two-phase-method:**

**Phase 1** - Downloading and recording the sources with their abstracts and keywords, merging the query results into a main database compiled by using Endnote, and eliminating overlapping results.

**Phase 2** – Reviewing the titles (firstly) and abstracts (secondly) of the sources in the database in order to exclude unrelated sources according to the first-round inclusion exclusion criteria (below).

**Criteria/approach:** Focused, but comprehensive

**Justification:** The aim of this phase is narrowing down to the related sources and creating a comprehensive but focused database for the following step.

#### Reviewing the Evidence (Step 4)

**In this phase, the full-texts of the sources in the database are reviewed in order to exclude unrelated sources according to the second-round inclusion exclusion criteria (below).**

The full-texts are downloaded and imported to Endnote to manage the database. The papers are then uploaded to GoogleDrive to share within the team.

**Tool/Software:** Endnote, Word.

**Criteria/approach:** Systematic and informed.

**Justification:** The aim of this phase is to review existing evidence according to the agreed inclusion-exclusion terms.

#### Data extraction (Step 5)

##### What to code / extract in full text review

- Research aims
- What methods are used (and how rigorously are these deployed)?
- What theoretical standpoint is taken by the authors, implicitly or explicitly?
- Whose views does the paper reflect, again implicitly or explicitly?
- What are the key findings and research results regarding:
  - Land and acquisition methods and processes;
  - The composition of and portfolios and questions of land 'banking';
  - Product selection and mode of delivery, including construction methods; and
  - The speed of new private housing delivery, including build out rates.
- What previous knowledge does the paper confirm or refute, and what new knowledge does it provide?
- What policy recommendation does the paper suggest?
- What further areas of research does the paper suggest / what research gaps are identified and to what extent have these been addressed by later / other evidence?
- Limitations of the reviewed research
- Significant quotes
- References to follow up

**Criteria/approach:** Systematic and informed.

**Justification:** The aim of this phase is to extract existing evidence according to the agreed inclusion-exclusion terms systematically.

### Synthesising the Evidence (Step 6)

Revisiting the aim, research questions and the scope of review

Revising accordingly

Synthesising the evidence

#### Synthesise evidence (thematic analysis), e.g.:

- Review, compare and contrast data
- Examine data on relevant outcomes, as well as supporting and contradictory evidence
- Evidence of original program theories
- Use evidence to modify and refine previously developed program mechanisms and theories
- Identify gaps, disputes, discussion points, major criticism areas and consensus (if any)

### Inclusion-Exclusion Criteria

To be applied on the initial database which is compiled by title/abstract/keyword queries on the search mediums (indexes, journals, etc).

Publication date range: 1997 - 2018

- Language: English
- Country / geographical focus: UK

**Criteria/approach:** Focused, but comprehensive

**Justification:** The aim of this phase is narrowing down to the related sources and creating a comprehensive but focused database for the following step.

<p><b>Thematic fit/relevance:</b></p> <p>Sources directly engaging with:</p> <ul style="list-style-type: none"> <li>● Housing supply and build out rates provided by private housebuilders/ speculative housing production/ volume house builders;</li> <li>● Land acquisition methods and processes;</li> <li>● The composition of land portfolios and land 'banking' issues;</li> <li>● The product selection of the builders;</li> <li>● The issues regarding product types;</li> <li>● The issues regarding construction / realisation processes in housing construction; and,</li> <li>● The speed and mode of housing delivery including construction methods and build out rates.</li> </ul>
<p><b>Second round inclusion/exclusion criteria</b></p> <p>To be applied on the full-texts of the sources in the main database.</p> <p><b>Criteria/approach:</b> Systematic and informed.</p> <p><b>Justification:</b> The aim of this phase is to review existing evidence according to the agreed inclusion-exclusion terms.</p>
<p>Publication date range: Same as in the first round  Country / geographical focus: Same as in the first round  Thematic fit/relevance: Same as in the first round</p>
<p>Participants characteristics: Not Applicable</p> <p>(no exclusion based on participant characteristics)</p>
<p>Research setting: Not Applicable</p> <p>(no exclusion based on research setting)</p>
<p>Methods: Not Applicable</p> <p>(no exclusion based on research methods)</p>

<b>Quality Appraisal Framework</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>Poor / to exclude</b>
<b>Quality Appraisal Stage 1 – Research Quality in General</b>				
<b>1.1 Transparency</b>				
Clear statement of aims and objectives				
Clear statement rationale for why study was undertaken				
Clear and adequate description of the context				
Transparent methodology: Explicit about methods used, including benefits and limitations and sampling including sample size and sample selection				
<b>1.2 Rigour</b>				
Thorough and appropriate approach applied to key research methods				
Appropriate research design given aims/objectives (including questions, data collection methods and data analysis methods)				
Appropriate sample selection and sampling methods				
Findings clearly linked to purpose of study				
<b>Quality Appraisal Stage 2 – Research Quality according to methodology</b>				
<b>2.1 Quantitative</b>				
Validity: The research measures what it says it measures				
Reliability: Measures of concepts are consistent				
<b>2.2 Qualitative</b>				
Validity: The research observes or identifies what it says it does				
Reliability: The research appears to be dependable				
<b>2.3 Mixed Methods</b>				
Quantitative analysis has been applied adequately				
Qualitative analysis has been applied adequately				
The quantitative and qualitative parts are well integrated				
<b>Quality Appraisal Stage 3 – Overall rating</b>				
High /Medium / Low / Poor (If it is poor, write a couple of sentence on your assessment and exclude)				

