



THE ROLE OF LAND PIPELINES IN THE UK HOUSEBUILDING PROCESS



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ChamberlainWalker



BARRATT
DEVELOPMENTS PLC

THE REPORT IN FIGURES

262k

Number of homes granted planning permission in England, 2016

142k

Number of homes underway in England, 2016

55.5%

of all planning permissions are held by non-builders

10 – 20%

DCLG estimate of number of planning permissions which never materialise into a start⁶

39%

of all planning permissions and on sites of +250 units

30 – 40%

DCLG estimate of planning permissions which lapse

100 units per year

estimated housing delivery on a site with permission for 1000 units

4 years

new estimate of time from detailed planning permission to site completion

55%

Barratt Homes volume growth in last 5 years

1.7 – 3.2 years

Previous estimates of time from planning permission to site completion

5.7 years

required permissioned land bank assuming 4 years' pipeline, 5% annual growth in completions and 20% contingency

84.1%

of unstarted permissions are progressing to a start

1.25 million

planning consents required to build 250,000 homes a year

15.9%

of unstarted permissions are stalled. Most are in process of being sold

86.6%

outline permissions held by non-builders

0.5%

of builders' detailed permissions have lapsed

93.8%

of builders' permissions are detailed with 59.8% already started

<3%

of builders' detailed permissions are lapsed or stalled

EXECUTIVE SUMMARY

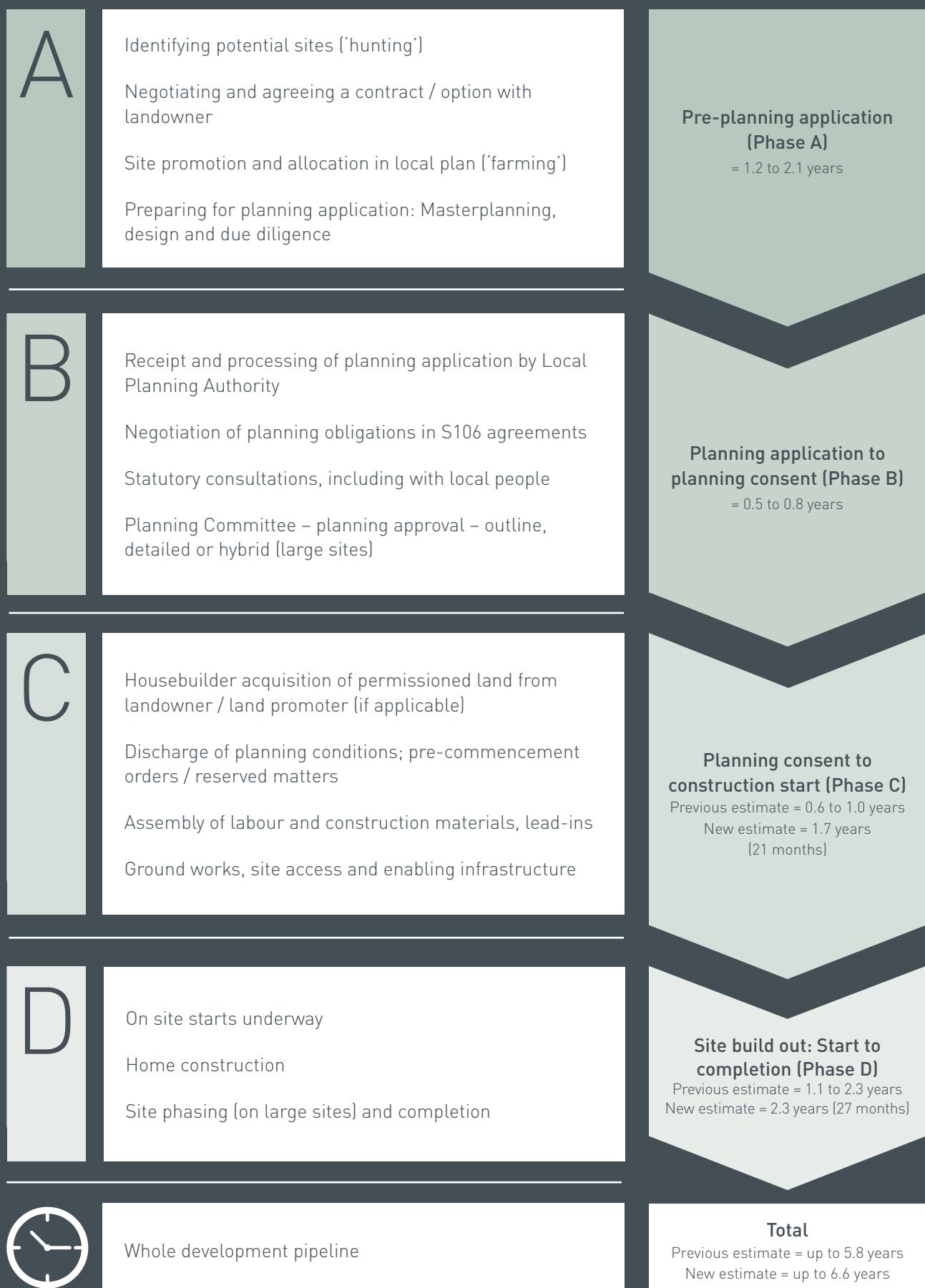
The topic of 'land banking' has become increasingly politicised as the housing crisis has worsened. Housebuilders stand accused of not building on the land for which they have planning permission and of not building it out as quickly as they could. This report explores the issue with the benefit of new 2017 Barbour ABI data.

- 1 All housebuilders need a supply of land for development, so the key question for this report is what size of land bank – particularly permissioned – does a housebuilder need, relative to their output of homes, to ensure a steady or growing level of production?
- 2 The size of land bank overall depends mainly on the length of the 'development pipeline'. This report considers the four phases of the development pipeline, namely: (A) pre-planning application; (B) planning application to planning permission; (C) planning permission to start on site; and (D) under construction (build out) to completion.
- 3 The development pipeline is often expressed in terms of the average time it takes for land to be developed. **The Callcutt Review in 2006 estimated that, across all site sizes, it took on average 4.2 years to navigate the 'raw land' through the four development phases (A+B+C+D). This rose to 5.8 years for sites of 150 homes or more.**
- 4 A later Local Government Association (LGA) study estimated that, across all site sizes, it took on average 1.7 years to navigate land through the 'post-planning permission' Phases (C+D). This rose to 3.2 years for sites of 100 homes or more.
- 5 New data for 2017 presented in this report, from Barbour ABI, indicates that '**post-planning permission**' development timescales (C+D) have increased markedly: on sites of 20 homes or more it now takes at least 4.0 years on average from the grant of detailed planning permission to site completion, compared to the earlier LGA estimates of 1.7 to 3.2 years.
- 6 This shows that it is taking longer to deliver new housing in the 'post-planning permission' Phases (C+D). This is likely to be the result of (i) an increased burden of pre-commencement conditions (Phase C) and (ii) an increased reliance in England for housing delivery on 'large sites' that take longer to build out (Phase D).
- 7 Previous DCLG estimates suggest that 10% to 20% of planning permissions don't make it to a start because they lapse (i.e. expire), with a further 15% to 20% re-engineered as a fresh application. This means that the permissioned land bank needs to be much bigger than the permissioned pipeline of 4 years to account for those consents that don't make it through. Lapses can increase the required land bank significantly.
- 8 The new data, together with corresponding completions data, imply a permissioned land bank in England of 5.4 years' worth of output currently. This is broadly consistent with the modelling presented in this report that demonstrates a permissioned land bank of 5.7 years is needed for a 'post-planning permission' development pipeline (C+D) of 4 years with a 20% lapse rate and 5% p.a. completions growth.
- 9 **The modelling demonstrates that a stock of 1.25 million planning permissions (1 million detailed-) would be needed for 250,000 home completions a year in the 'zero growth' steady state. This compares to a stock of around 0.8 million planning permissions (0.7 million detailed-) currently. That's a shortfall of around 450,000 planning permissions.**

Other key findings

- Relative to their level of completions, the top three UK builders (Barratt, Persimmon and Taylor Wimpey) have smaller land banks than everyone else, with an average permissioned land bank of 5.3 years' worth of current output, compared to 5.5 years for the rest of the sector (5.4 years is the average).
- The top three UK builders' implementable land bank is only 3.3 years' worth of output. This reflects their fast-asset-churn, return on capital business models.
- **55% of all planning permissions in England are not held by builders at all. 87% of outline planning permissions are not held by builders.**
- Compared to other applicants, builders:
 - (a) hold a far richer concentration of detailed planning permissions within their consented land bank (94%) and very few outline-planning permissions (6%);
 - (b) are more likely to have started construction on their detailed planning permissions (60% likelihood); and
 - (c) have far fewer stalled sites (<3%).
- London faces a double-whammy that 'stretches out' its development pipeline: it has an even higher proportion of sites owned and controlled by non-builders and, unlike the rest of England, a majority of planning permissions on 'large' sites.

The development pipeline and its four phases



1.0 INTRODUCTION

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This report looks at the issue of land banking and seeks to establish how much land housebuilders need to hold, relative to their output, to ensure a steady or growing number of homes built. It has been commissioned by Barratt Developments Plc and prepared by ChamberlainWalker Economics¹. It draws upon 2017 data on the scale and nature of current planning permissions. The political context is well-versed and perceived problems of land banking featured in the Government's recent Housing White Paper². An overview of the debate is provided in the opening chapter.

- 1.1 Getting land from its 'raw' unconsented and unallocated state to land which is ready to build on, is highly complicated. It involves many participants: housebuilders, landowners, land promoters, utility companies, planners, local politicians and of course local people. For them to work together successfully, including to complete all the necessary negotiations, inevitably takes time. Given these processes, developers require a sufficient land bank sitting behind them³. The question this report answers is: how much land should the land bank contain to maintain and increase housing delivery?
- 1.2 Four distinct phases in the development pipeline are considered in the report:
 1. pre-planning application [Phase A];
 2. planning application to planning permission [Phase B];
 3. planning permission to start on site [Phase C]; and
 4. under construction (build and sales) [Phase D].
- 1.3 The report constructs a simple model to explain how big the required land bank needs to be, taking account of how long it takes for land to pass through these four phases of the development pipeline. It also considers the 'lag and lapse' factor; namely, the need to ramp up land holdings before completions rise (lag), and the number of planning permissions that can be expected to expire (lapse) without ever progressing to a housing start or completion (see paragraph 3.2).
- 1.4 The report also considers what other studies and reports have said about the development pipeline. Data from these studies plus new 2017 data commissioned from Barbour ABI are combined to estimate how long the phases actually take at the current time, and thus how long the development pipeline is. For increased granularity, the new data is interrogated to uncover the make-up of planning permissions by landownership (builders, non-builders), site size, and London / England to build a clearer understanding of the process in practice. The report draws conclusions on the key influencers of pipeline length, including those pertinent to policy-makers seeking to speed up housing delivery.

¹cweconomics.co.uk

²Fixing our Broken Housing Market, February 2017.

³Notwithstanding the right economic and market conditions.

2.0

WHAT IS LAND BANKING?

Chapter in a nutshell

The housebuilding industry has been accused of “sitting on land banks” and “making speculative gains from a rising market”.

In fact, there are necessary business reasons for housebuilders to hold land banks, to do with the scarcity of land with realistic planning potential and the time it takes both to secure land and then build new homes on it.

Permissioned land is owned or controlled by housebuilders and non-housebuilders. The latter may have different motivations for the use of their land, sometimes unrelated to the production of new homes.

There are market constraints to the pace of build and sale once a development has commenced.



The land banking debate

- 2.1 'Land banking' means different things to different people. As the national housing shortage has risen in political prominence, the term 'land banking' has assumed a more pejorative slant. It is often taken to mean the speculative hoarding of land in a rising market, profiting from appreciating land values; separate from, (rather than integral to), the productive process of housebuilding. Inevitably the issue becomes more emotive in a market where house prices are rising sharply and many young people cannot get onto the housing ladder.
- 2.2 For housebuilders, a pipeline of land with planning permission is a fundamental requirement for the production of new homes. The process of securing the raw material (including the time taken to progress it through the planning system) is time consuming and risky. So too is the process of building new homes on site once land becomes available for production.
- 2.3 Naturally, in any production process in the economy, the longer the 'conveyor belt' the more 'production in progress' there is, relative to output. Housing is no exception to this. To maintain a steady state (ignoring growth aspirations, market conditions, lapse rates or time delays) a housebuilder needs to purchase a new plot each time it sells a home. A key question for this report is how much permissioned land is it reasonable for housebuilders to hold to ensure a steady or growing output of new homes, given the planning system fall-away rates, and other factors affecting the production process?

- 2.4 Historically, the number of planning approvals (new permissions) has always exceeded the number of housing starts. The last six years have been no exception:

Table 1: Housing starts and detailed planning permissions granted in each year, England

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Starts	111,000	111,000	104,000	135,000	143,000	142,000
Planning permissions	175,000	191,000	185,000	227,000	242,000	262,000

Sources: DCLG live table 208 (starts)|| HBF Housing Pipeline report 2016Q2 (permissions)

- 2.5 Last year in England, planning permission was granted for 262,000 new homes but significantly fewer, 142,000, got underway. This has led to questions as to what is happening to the remaining permissions. The accusation of land-banking is often (though not exclusively) levelled in the context of such permissioned land. For example, “it has planning permission, why isn’t it being built on?”, or “why isn’t it being built out more quickly?”.
- 2.6 There is a further question-mark over the DCLG starts and completions figures more generally. Many, including the HBF, believe that they are under-recording housing starts and the figures in the table above could be c20% too low.



Why isn't permissioned land being built on?

- 2.7 It is important to make a distinction between permissioned land that is owned/controlled by housebuilders and permissioned land that is owned/controlled by others.⁴ Based on ABI Barbour data commissioned for this report, non-housebuilders were estimated to own around half of the outstanding permissions/schemes at the end of January 2017 (see chapter 5).
- 2.8 Most non-builders (which includes the public sector) promote land with the intention that it will ultimately be developed by a housebuilder. Others may have entirely different motivations. In general terms:
1. Promoters of land for development seek to obtain planning permission – often outline planning permission – before selling it to a housebuilder. This may be done by landowners or professional land promoters, on behalf of the landowners. These are companies whose business is to buy land, secure planning permission, and provide housebuilders with a steady supply of developable sites.
 2. Delays from the granting of planning permission to the start of construction may reflect a number of factors such as the landowner's requirement to market the land before it is sold for development.
 3. The value of the land with permission may depend on factors that need to be resolved before it can be marketed and sold to a housebuilder (such as provision of local infrastructure by a third party, resolution of planning conditions, and so on).
 4. Some landowners may be seeking planning permission on a site, not because they intend for it to be developed, but because they want to establish the value of the land, for business or personal reasons. The study team heard of examples of businesses obtaining planning permission for housing in order to create a 'book value' sufficient to obtain borrowing collateral.
- 2.9 For builders and non-builders alike, there is a period of time that elapses before the start of construction on site can begin following planning approval. Construction activity cannot be expected to follow a permission immediately, rather it is subject to the following, *inter alia*:
1. Expiry of Judicial Review period.
 2. Planning permission comes with stipulated **S106 requirements and conditions**. There has been growing concern as to the rising number of pre-commencement conditions being attached (sometimes inappropriately) to planning permissions, as evidenced by the recent HBF Housing Pipeline Report in January 2017.
 3. Some land might be held under option with time needed to negotiate and **exercise the option** following the granting of planning permission.
 4. Time taken to assemble other (non-land) inputs to the construction process: including, **labour, materials and finance**.

55.5%

of all planning permissions are held by non-builders

⁴The latter could include the public sector, charities, private businesses or individuals.

- 5. Market conditions. For example, during an **economic downturn**, changed market conditions can adversely affect sales rates and revenues, requiring development timescales to be reviewed (during this time, housebuilders might seek to renegotiate Section 106 agreements and/or revise their proposals, in some cases leading to a new application)
 - 6. Other. Sites can also stall because of other 'external' factors such as the provision of local **infrastructure** needed to unlock development.
- 2.10 There are many reasons why planning permissions are not implemented immediately. Crucially, housebuilders are return-on-capital businesses whereby as soon as land is purchased the aim is to secure home sales to return that investment. Delays to this capital return are damaging to the business, and hold up the release of funding for other land investment.

Why isn't permissioned land being built out more quickly?

- 2.11 Housebuilders are often accused of 'land banking' because it is physically or technically possible for them to build out more quickly once construction has begun. This may be true, but the speed of production of new homes must also account for the rate at which new homes can be sold, referred to as the "market absorption rate".
- 2.12 Although there is a national shortage of homes, with demand outstripping supply in some areas, the number of buyers in a local market at any time is limited. Housing markets are highly localised, which means the rate of new sales also depends on the number of potential buyers in the vicinity of the site. To increase sales rates, housebuilders would need to sell into the market at a lower price than envisaged when purchasing the site. This would simply serve to reduce profitability (possibly to loss) and so damaging the investment. The residual land value that housebuilders use means that the initial land outlay is made before the production starts and is calculated (often through negotiation between housebuilder and landowner) on the basis of estimating sales values and production costs. Crucially, housebuilders are "price-takers", with selling prices determined by the second-hand market for homes which accounts for c90% of transactions in the housing market.
- 2.13 Naturally, market absorption is more problematic for larger sites than it is for smaller ones. There is a wealth of literature and evidence showing that larger sites have proportionately much lower delivery rates than smaller ones (see next chapter). This is, in turn a problem at the national level given our reliance on large sites for our nation's new housing delivery. According to the Barbour ABI data commissioned for this report, around 39% of outstanding planning permissions at the end of January 2017 were on 'large' sites of 250 homes or more. In simple terms, a single site for 1000 homes yields massively less than 10 different sites for 100 homes.

10-20%

DCLG estimate of number of planning permissions which never materialise into a start⁵

39%

of all planning permissions and on sites of +250 units

⁵ Nathaniel Lichfield & Partners (now Lichfields), 2016

3.0

REVIEW OF EVIDENCE: PREVIOUS INVESTIGATIONS INTO LAND BANKING

Chapter in a nutshell

This short literature review covers some of the more well-known reports on the issue of land banking, including The Barker Review (2004), The Callcutt Review (2006), The Office for Fair Trading (OFT)'s Housebuilding in the UK (2008), The LGA's An Analysis of Unimplemented Planning Permissions (2013), Molior's Barriers to Housing Delivery (2012) & - Update (2014), as well as the HBF's Permissions to Land (2014).

It presents what previous reports have said about: (a) permissions exceeding completions; (b) permissioned land holdings; (c) the build out of permissioned land; and (d) developers' financial incentive to hoard land.

On planning permissions exceeding completions

- 3.1 Nathaniel Lichfield & Partners (now **Lichfields**) (2016) observed that planning permissions need to account for lapse rates – many planning permissions simply expire.
- 3.2 **DCLG** analysis has identified a lapse rate of 30% to 40%. It suggested that 10-20% of permissions do not materialise into a start on site at all. In addition, an estimated 15-20% of permissions are re-engineered through a fresh application (i.e. recycled). LGA (2013) figures imply a very high lapse rate in the aftermath of the credit crunch, in the order of 60% of new planning permissions.⁶
- 3.3 **Molior** (2012 & 2014) found a lapse rate in London of around 50%. They also found significant amount of land with planning permission in London is owned by non-builders who, unsurprisingly, don't build. They concluded "the fact that non-builders control almost half of the planning pipeline is a constraint on housing development in London".
- 3.4 **Savills** (2011) data found that builders (nationwide) owned 79% of sites with detailed planning permission.



30-40%

DCLG estimate of planning permissions which lapse⁵

⁶Average annual private planning permissions 2008-2013 = 142,000. Average annual private completions 2008-13 = 76,000. The stock of unimplemented planning permissions fell significantly during this period.

On permissioned land holdings

- 3.5 **HBF** data, also for Callcutt (2006), showed an average of 2.5 years land supply with implementable planning consent.
- 3.6 A 2014 **HBF** survey of its larger members' land banks found that 63% of their units were on sites that had already started, 26% of plots with planning status had only an outline consent and so production could not legally commence, 5% were awaiting the discharge of planning conditions, and only 4% were awaiting a start on site. HBF's survey found that housebuilders hold very few sites which have an implementable planning permission, but where work on site has not yet started.
- 3.7 **LGA** (2013) found that only 52% of all planning permissions (by units) were under construction and 48% (by units) were unstarted, and that these proportions had been fairly stable since 2008. The LGA data revealed the impact of consents for much larger sites. For example a very recently consented and started scheme of say 3000 units may show 2900 of the consented plots as unstarted, yet the site itself has been started.

On the build out of permissioned land

- 3.8 **LGA** (2013) found the average time taken for a scheme to progress to full completion having obtained planning permission was 27 months in 2012/13, irrespective of size. For large sites (250+ units) this was 47 months. The average time taken for a scheme to progress to start, having obtained planning permission, was 12 months. For large sites (250+ units) 15 months. HBF (2014) asserted that the development timescale will be influenced not just by the time it takes to build the units, but by the capacity of the local housing market to absorb the flow of new homes for sale. Lichfields (2016) found that stronger local markets have higher annual delivery rates.
- 3.9 **Lichfields** (2016) also found the bigger the site the lower the proportional buildout rate on average. In their sample of sites, the average build out (delivery) rate for sites between 0-99 homes was just under 40% (of the site's permissioned homes) per year. For sites between 100-499 homes it was just over 20% per year, for 500-999 homes it was 10% per year. In simple terms:
 1. A site of 99 units may yield c40 homes per year
 2. A site of 499 units may yield c100 homes per year
 3. A site of 999 units may yield c100 homes per year

Annual build out rates appear to plateau at high single digit(%) for sites of 1,000+ homes.

- 3.10 **Molior** (2014) asserted that it was difficult for a housebuilder to build more than 100 homes a year on any given site in London because of housing market absorption, implying a build out rate of 20% or less on very large sites of 500 homes or more. This was a significant problem for London with the majority of London planning consents on very large (500+) sites.
- 3.11 The **Molior** (2014) data suggested that builders were building as fast as they could, on the basis of a build out rate maximum of 100 homes a year,

On developers' financial incentive to hoard land

- 3.12 **HBF** (2014) assert that financial incentives of builders are heavily weighed to developing land quickly, noting planning permissions expire and that going back to square one of the planning process is very costly for builders.
- 3.13 **HBF** (2014) adds that housebuilders are motivated to build rather than 'bank' land because companies are judged by their investors on the basis of their return on capital employed (ROCE). So once the (very significant) land investment has been made, the need to quickly achieve an implementable consent is a very strong, commercial driver aimed at a return on the capital outlay by building and selling homes.
- 3.14 Sitting on paid-for land ties up equity and damages ROCE. The financing costs of sitting on land can be as much as 10-12% per year.
- 3.15 **Callcutt** (2006) states, "other things being equal, housebuilders have a strong incentive to build out as quickly as possible. The basis on which investors measure their success demands that they build out sites promptly so as to release and recycle the capital and deliver a good return on capital."
- 3.16 **OFT** (2008) – "We have not found any evidence to support the view that, at the national level, homebuilders are hoarding a large amount of land with implementable planning permission on which they have not started construction."

Summary

- 3.17 A number of these findings are relevant to the question being addressed by this report:

1. Lapse rates of 30% to 40%, suggest far higher land banks are required for a given development pipeline length.
2. The high proportion of non-builders is a key explanation for why planning permissions are not started or not started more quickly.
3. The average time to progress to a start on site from grant of planning permission appears to have significantly increased since 2012/13.
4. Molior estimate 100 homes max per year per site in London.
5. Lichfields estimates 20% average annual delivery on sites of 100-499 homes so c100 units per annum on a site of c499 units.

*100 units
per year*

*estimated housing delivery on a site
with permission for 1000 units⁵*

4.0

BASIC LAND BANK MODEL

Chapter in a nutshell

A basic model is presented which demonstrates how the size of land banks can be explained in terms of a small number of real world factors, namely (a) length of “development pipeline”, (b) growth rate of completions, and (c) contingency allowance (for success/failure rate).

The production of new homes is not instantaneous; there are long lags from inception to completion of homes. This is the main practical and commercial reason for the existence of housebuilders’ land banks.

The model shows that sizeable land banks are required for necessary commercial reasons, without reference to speculative hoarding or similar accusations levelled at housebuilders.

The report estimates a range of possibilities for the size of land banks, based on a range of assumptions in relation to the three variables of the model.

Taking account of the available evidence from previous studies the model estimates that consented land banks for housebuilders of between 3.4 and 5.8 years’ worth of annual volume are required (Total land banks for homebuilders need to be between 5.7 and 9.6 years’ worth of annual volume).

The development pipeline

4.1

This report refers to four distinct phases in the development pipeline: (A) pre-planning application; (B) planning application to planning permission; (C) planning permission to start on site (build out); and (D) under construction.

4.2

The length of development pipeline is fundamental to the existence of land banks. There are a number of factors affecting the length of development pipeline as summarised in the table overleaf.

9 years

*required land bank assuming
5 years’ navigation, 10% growth and
25% lapse rate*

55%

*Barratt Homes volume growth in last 5
years*



Table 2: Summary of factors influencing the length of development pipeline

Phase	Factors which contribute to the time taken at each stage
Pre-application 	<ul style="list-style-type: none"> Landownership and control Market conditions Planning context (including whether site is included in Local Plan) Preparing for planning application (includes design, due diligence, consultation) Extent of required community consultation
Application to permission 	<ul style="list-style-type: none"> Planning context (including whether site is included in Local Plan) Local support/opposition Negotiation of planning obligations in Section 106 agreements Capacity and performance of local planning authority Involvement of statutory consultees Scale of development
From permission to start on site 	<ul style="list-style-type: none"> Market conditions Landownership and control Discharge of planning conditions and other planning obligations Ground works, site access, infrastructure Input constraints (labour, materials, finance)
Under construction (build out) 	<ul style="list-style-type: none"> Technical constraints on the speed of construction Input constraints (labour, materials, finance) Site size and market absorption Local authority phasing and infrastructure requirements

Model part 1: length of the development pipeline

- 4.3 A simple development pipeline – with four distinct phases - can be depicted as in Figure 1, below:

Figure 1: Illustrative development pipeline

Development stages	Time periods								
	1	2	3	4	5	6	7	8	9
Pre-application		■							
Application to permission			■						
From permission to start on site				■					
Under construction					■				
Completion of new home(s)								↗	

- 4.4 If it is assumed that each phase lasts one period (e.g. a year) Figure 1 shows that in year five the builder has its first completion (from scheme 1).
- 4.5 But in order to maintain production at a constant rate beyond year five, Figure 2 shows that the builder must have four newer schemes underway, each in a different phase:

Figure 2: Land bank associated with illustrative development pipeline

Developers pipeline of schemes	Time periods								
	1	2	3	4	5	6	7	8	9
Scheme 1	A	B	C	D		↗			
Scheme 2		A	B	C	D		↗		
Scheme 3			A	B	C	D		↗	
Scheme 4				A	B	C	D		↗
Scheme 5					A	B	C	D	↗

Figure 2 also shows how the developer's land bank is made up in year 5

Units	Phase	Year of completion
1	D	Under construction
1	C	From permission to start on site
1	B	Application to permission
1	A	Pre-application
Total units in landbank	4	

- 4.6 For the illustrative example in Figure 2 it is four plots of land per home completion⁷ (The equation at footnote 7 refers). But the required land bank is often expressed in terms of the number of years over which the current rate of completions can be maintained. In this illustrative example it is four years. Namely four years' worth of completions.
- 4.7 Table 3 summarises the identified time periods for the development pipelines within two key research studies over recent years. Namely Callcutt (2006) and LGA (2013). Table 3 also brings together similar timescales from various other studies (see Chapter 2) under 'other various' column.

Table 3: Various sources of evidence on length of development pipeline (average time taken in years)

Source:	Callcutt		Glenigan/LGA				Other
Date:	2006		2007-08		2012-13		Various
Units per scheme:	All	150+	All	100+	All	100+	
Pipeline stages (years)							
Pre-application	1.3	2.1	-	-	-	-	1.2
Application to permission	0.5	0.5	-	-	-	-	0.8
From permission to start on site	1.0	0.9	0.6	-	1.0	1.0	1.0
Under construction	1.5	2.3	1.1	-	1.3	2.2	1.7
Pipeline (cumulative years)							
Up to grant of permission	1.8	2.6	-	-	-	-	2.0
Permission to completion	2.4	3.2	1.7	2.2	2.3	3.2	2.7
Total	4.2	5.8	-	-	-	-	4.6

- 4.8 So Callcutt and various other studies estimate that, for a typical site, it takes between 4.2 and 5.8 years to navigate 'raw land' through the four development phases before homes are completed. Namely:

1. 1.8 to 2.6 years up to planning permission
2. 1.7 to 3.2 years (typically) for discharge of conditions and build and sale.

1.7-3.2
years

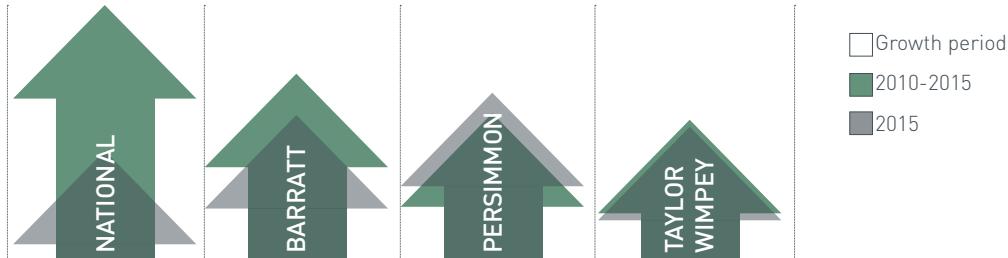
Previous estimates of time from planning permission to site completion

⁷In general, the 'required' land bank plots (L_t) to maintain the current rate of completions into subsequent periods is equal to: units completed (C_t) multiplied by the average number of periods taken to produce the units i.e. average length of "development pipeline" (N_t): $L_t = C_t * N_t$

Model part 2: growth in completions

- 4.9 As seen earlier, a larger land bank is needed to increase the rate of completions in subsequent periods.
- 4.10 Housing completions have been growing since 2010 and the top three builders have all significantly increased their output in the same period. Barratt has increased annual output by 55% in the last five years.

Figure 3: Average annual growth rate of completions, 2010-2015; and annual growth rate of completions in 2015



- 4.11 Given the time lag from inception to completion of homes, the current land bank must grow well in advance of growing future completion targets⁸ (the equation at footnote 8 refers).
- 4.12 This is explained by the simplistic example in figure 4 which shows that a growth rate in completions of 5% per annum requires the land bank in year five to increase from four years (as needed to maintain a constant rate of production of one unit per period) to 4.5 years. In other words, a much larger land bank is needed now, in order to support volume growth in year five.

Figure 4: Increase in land bank needed to support growth in completions

	Time periods								
Developers pipeline of schemes	1	2	3	4	5	6	7	8	9
Scheme 1	A	B	C	D					
Scheme 2		A	B	C	D				
Scheme 3			A	B	C	D			
Scheme 4				A	B	C	D		
Scheme 5					A	B	C	D	
Constant output	1	2	3	4	5	6	7	8	9
Completions					1	1	1	1	1
Land bank in year 5					4				
5% annual growth in completions					5	6	7	8	9
Completions					1	1.05	1.10	1.16	1.22
Additional completions each year						0.05	0.10	0.16	0.22
New land bank						4.526			

⁸The required land bank to sustain a growth rate in completions (r) is defined as follows: $L_t = \sum_{i=1}^N C_i(1+r)^i$

Model part 3: contingency allowance to accommodate success/failure rate

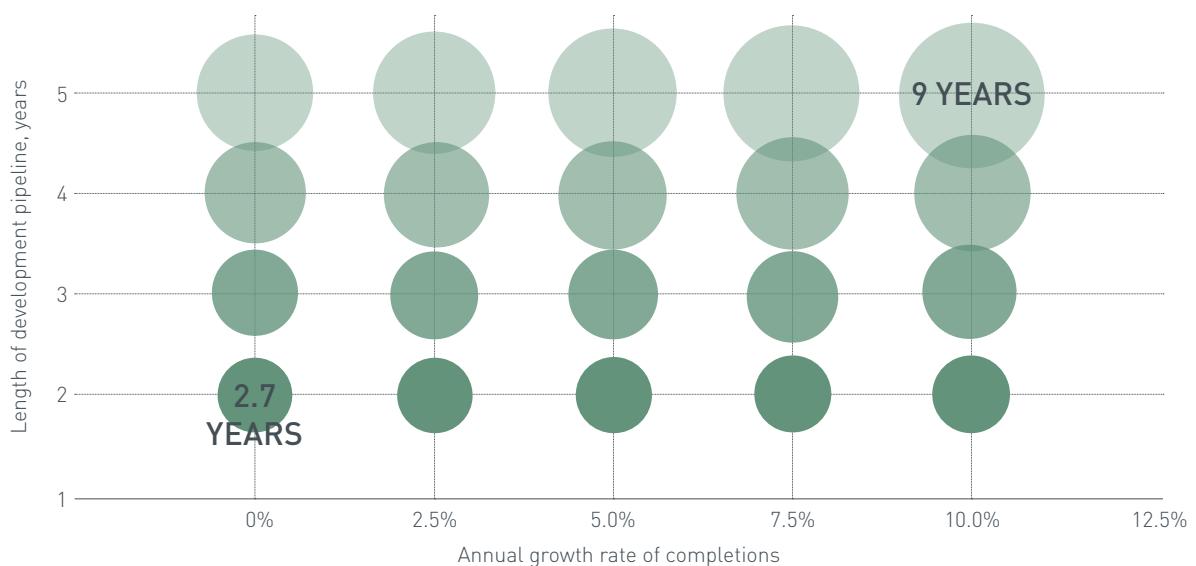
- 4.13 Neither Figure 2 nor Figure 4 considers whether or not the consented units in the landbank which will actually be developed. Namely it ignores the 'lapse' factor described in Section 2. A housebuilder cannot ignore the fact that some units in the land bank will not make it through to site start. This can happen for various reasons including market changes, or difficulties in meeting planning requirements specified by condition or S106 Agreement.⁹ Builders need a contingency to manage that risk and the equation footnote 9 refers.
- 4.14 The success/failure rate (and required contingency) varies along the development pipeline. For example, pre-planning the level of uncertainty is likely to be much greater than during the construction phase.

Model-based scenarios

- 4.15 Figure 5 summarises a range of scenarios based on different assumptions relating to:
1. The length of the development process (from two to five years);
 2. The envisaged growth rate of completions (from 0-10 per cent per annum); and
 3. The contingency or 'lapse' allowance (all scenarios assume 25 per cent).

There is considerable variation in the size of land banks, from 2.7 years to 9 years' worth of annual supply. In simple terms Figure 5 indicates that **if a builder wants to grow by 10% a year and assumes a 25% lapse rate, it could need nine-years' supply of land in its landbank.**

Figure 5: Bubbles show size of required land bank to sustain target growth rate of completions, for assumptions about the length of development pipeline, with 25 per cent contingency allowance



⁹The land bank equation is adjusted for as follows, where f is a contingency allowance for failure rate. The higher the contingency allowance, the larger the land bank must be.

$$L_t = \sum_{i=1}^N C_i (1 + r)^i / (1 - f)$$

- 4.16 A narrower range of estimates are presented below in Table 4. These are derived from the evidence from the various studies described in Chapter 2 and the figures contained earlier in Table 3. They point to required land bank lengths of between 5.7 years supply and 9.6 years supply. In contrast it should be recognised that the current Barratt land bank (in total) is c4.1 years supply, thus clearly demonstrating the effects of a fast asset turn model in practice, compared to theoretical model estimates.

5.7 years

required land bank assuming 4 years' navigation, 5% growth and 20% contingency

Table 4: Model-based estimates of land bank size (average time taken in years)

	Low	High	Average
Length of development pipeline, Years	4.0	5.0	
Annual growth rate of completions	5%	10%	
Contingency allowance	20%	30%	
Estimated land bank requirement (years)	5.7	9.6	7.7
Of which:			
No permission	2.3	3.8	3.1
With planning permission	3.4	5.8	4.6

5.0

2017 EVIDENCE AND LENGTH OF THE PIPELINE

Chapter in a nutshell

Latest planning permission data (2017), commissioned from Barbour ABI, are presented

They show a significant percentage of planning permissions are only outline (19%). Only 6% of builders' planning permissions are outline

The data suggest an overall post-planning pipeline of at least 48 months to completion, (higher than previous estimates) and allude to significant post-planning delays of 21 months (discharge of conditions and s106 agreements)

The data also suggests non-builders reselling permissioned land to builders elongates the development pipeline, given the time required to market the land, negotiate a price and secure reserved matters approval.

London is very different to the rest of the country when it comes to the composition of permissioned land.

The top three housebuilders run much shorter 'land banks' than the rest of the sector– their permissioned land banks are smaller than everyone else's (relative to completions).

- 5.1 This chapter presents and analyses new planning permission data and uses it to estimate the size of permissioned land banks in England. It goes onto compare this with evidence from the top 3 housebuilders' latest annual reports.

Outstanding planning permission data

Data overview

- 5.2 The data, from Barbour ABI, cover England and show the stock of planning permissions in play at the end January 2017. They cover only sites with 20+ homes and this explains why the gross figures do not accord with total consents data. The data has been split out by (a) builders, (b) non-builders, (c) 'large sites' of 250(+) homes, (d) 'small sites' of 20-249 homes, and (e) London vs the rest of England.
- 5.3 The following paragraphs present a series of 'snapshots' to describe and interpret the data.

21 months

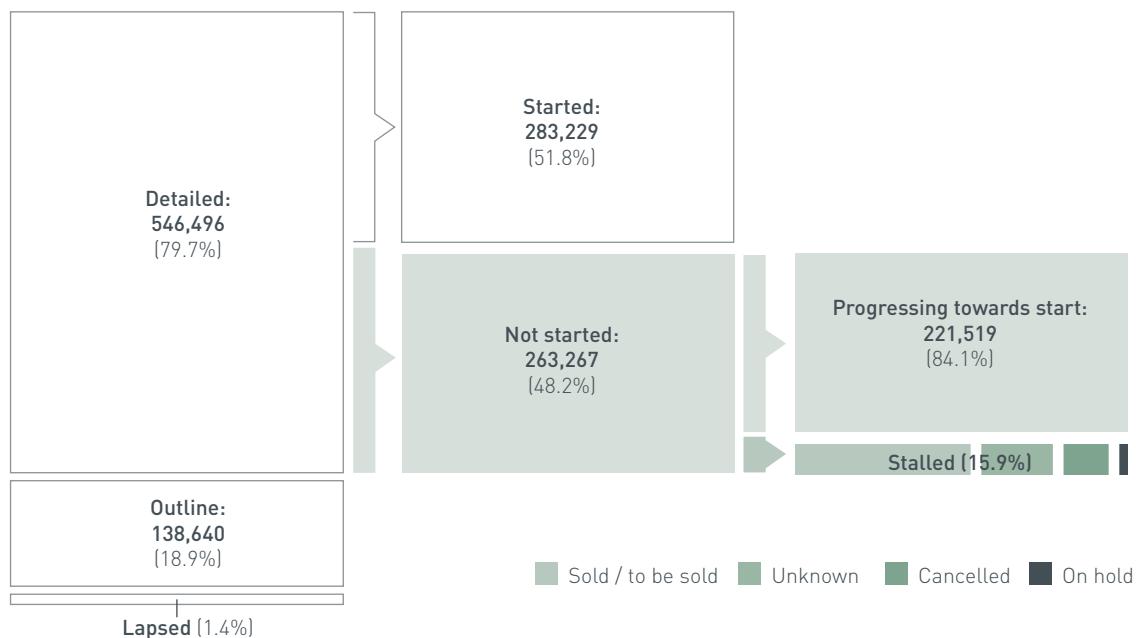
current average time from detailed permission to start on site



Snapshot 1: There are 685,000 consented units. The vast majority are being progressed but post consent planning delays are increasing

1. Figure 6, below, shows 'overall planning permissions', across the whole of England.¹⁰
2. It shows there were 685,136 planning permissions in play overall in England at the end of January 2017. Of these, 546,496 were detailed planning permissions¹¹, though not all will have been implementable.
3. 52% of detailed planning permissions were on sites that had been 'started'.¹²
4. Of the remaining 48%, 84.1% were progressing towards a start. The key reason why they have not started is the requirement to discharge pre-commencement conditions.
5. The remaining 15.9% were 'stalled'. Most of these were sites that had been sold or were in the process of being sold. A modest number of stalled sites were cancelled – many of these ended in a lapse.

Figure 6: The composition to all planning permissions in England



Sources: Barbour ABI

6. The data also infers the periods of time required for a development 'phase' to secure a post-planning pipeline, assuming annual completions of 126,000¹³ and a 16% impairment.

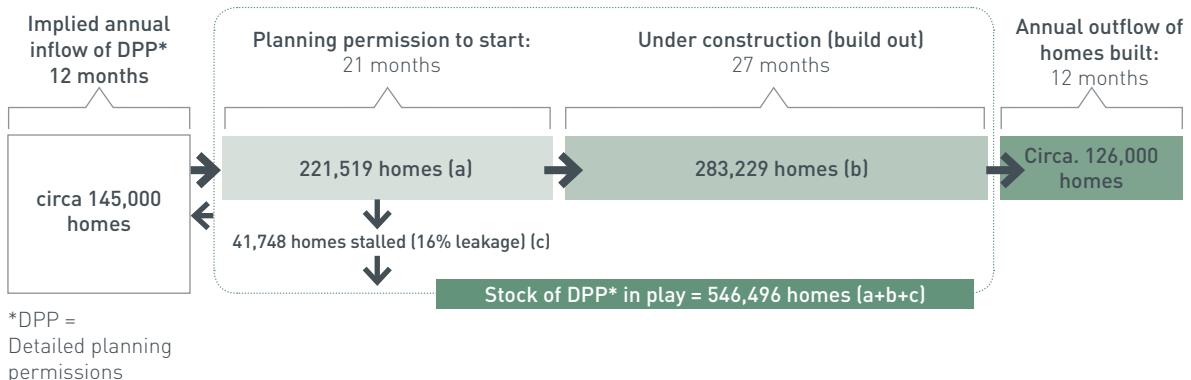
¹⁰ As defined by applicant

¹¹ These include outline planning permissions with reserved matters

¹² Or are on a site which has been started. Those started were, by definition, implementable

¹³ According to DCLG data, there were around 148,000 completions in 2016/17. Of these, we estimate that completions on sites of 20 homes or more were 126,000. This is likely to be generous - in particular, there is a significant number of sites of 10 homes or fewer and there are no affordable housing obligations on these. This in turn means that our estimates of the phase and pipeline lengths are conservative.

Figure 7: The inflow, stock and outflow of detailed planning permissions



7. The 126,000 is conservative (see para 2.6 earlier) hence the pipeline will be longer. However it does not take account of future growth in completions, which is a counterbalancing factor.¹⁴
8. The implied pipeline phase lengths are:
 - 21 months to progress a detailed planning permission to a start on site.
 - 27 months under construction.
9. The 21 months period from obtaining a planning permission to a start on site is significant. It is much higher than the 12 months estimated by the LGA (2013) report.
10. The data suggest a pipeline of 48 months (4.0 years) of detailed planning permissions in play for one years' worth of completions. This is way more than the 39 months reported in the Callcutt Review (2006) and the 38 months estimated in the LGA report (2013) for larger sites of 100+ homes (see chapter 2).
11. This 21 month period is consistent with the view of housebuilders that whilst the period taken to gain planning permission has remained broadly unchanged over the last decade or so, post-planning consent delays have grown far worse. In particular the time required to discharge pre-commencement conditions and section 106 obligations.

84.1%

of unstated permissions are progressing to a start

15.9%

of unstated permissions are stalled. Most are in process of being sold

¹⁴We use the stalled sites percentage of sites not started (15.9%) as a proxy for impairment. In reality, these will either lapse or be recycled back into the pipeline at various junctures.

Snapshot 2: Builders tend to hold detailed permissions and virtually none are stalled. Non-builders tend to hold outline permissions and this elongates the process

1. Builders held very few outline planning permissions – only 13.4% of them. Builders tend to hold detailed planning permissions and non-builders tend to hold outline planning permissions.
2. This alludes to their differing roles in the development process. Most non-builders are only progressing a site to an outline planning permission in order to secure a land value and then sell the site on.
3. 44.5% of all planning permissions were held by builders, rising to 52.3% of the detailed planning permissions.

Table 5: Planning permissions in England, Builders & Non-Builders, End January 2017¹⁵

Planning permissions	Builders	Non-Builders	Total
Detailed:	285,959	259,727	546,496
Outline:	17,359	112,625	129,984
Lapsed	1,442	8,014	9,456
Total:	304,761	380,375	685,136

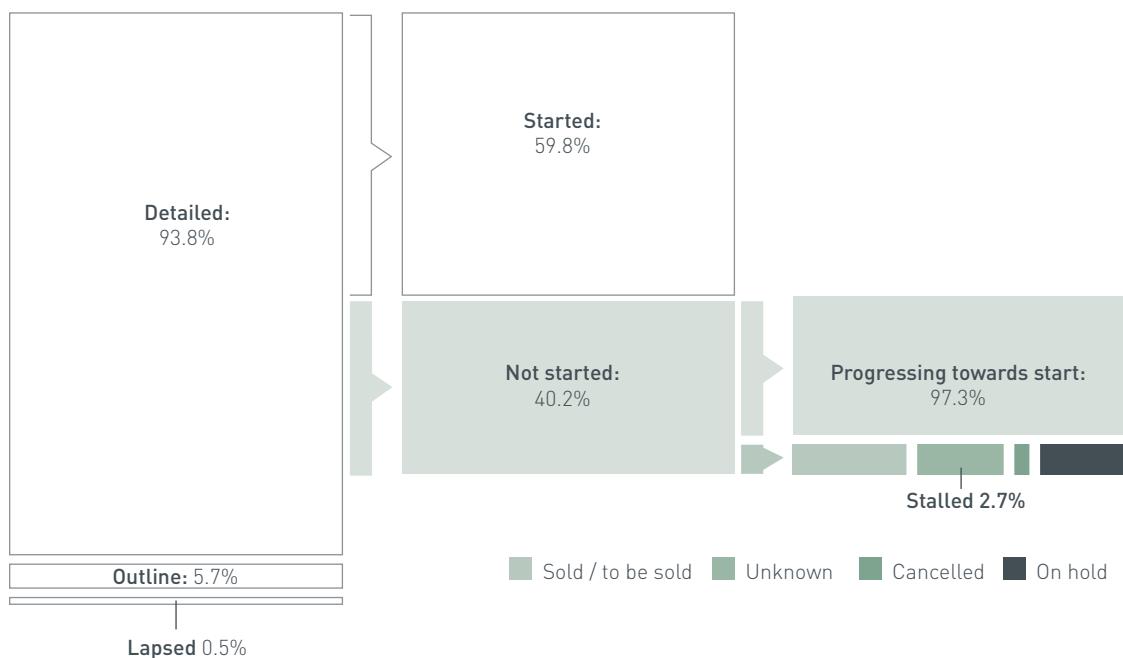
4. Figure 8 below, splits out planning permissions just by 'builders'.
5. Around 93.8% of 'builders' planning permissions in play were detailed planning permissions, of which 59.8% had been started.
6. Builders hold a richer concentration of detailed planning permissions than non-builders. Also, they are also much more likely to have started a detailed planning permission.
7. Of the builders permissions not already started, 97.3% were progressing towards a start. This compares to 73.9% for non-builders.
8. The data confirms there are more stages in the development process where non-builders are involved. This may be entirely appropriate but it is having the effect of elongating the pipeline.

86.6%

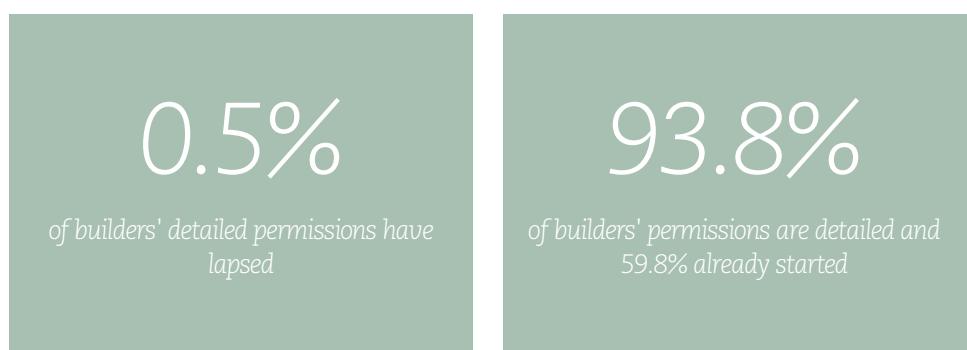
outline permissions held by non-builders

¹⁵Sites with 20 homes or more only.

Figure 8: Builders planning permissions



Sources: Barbour ABI



Snapshot 3: Larger sites take longer but are no more likely to be stalled

1. Around 39.0% of all planning permissions (by number of homes) were on 'large' sites – defined as 250 homes or more. This falls further, to 35.1%, of detailed planning permissions.
2. But more than half (54.3%) of outline planning permissions were on large sites, which is disproportionately high. 'Proportionate' would be just 39.0%:

Table 6: Planning permissions in England, large and small sites, at End January 2017¹⁶

Planning permissions	On sites of 20-249 homes	On sites of 250+ homes	Total
Detailed:	354,042	191,644	545,686
Outline:	59,042	70,089	129,131
Lapsed	3,684	5,772	9,456
Total:	417,630	267,506	685,136

3. Snapshot 3 splits out planning permissions on large sites' and those on 'small sites', and puts them side by side for comparison.
4. Outline planning permissions made up around 26.2% of large site permissions.
5. Only 14.3% of small site consents were outline consents.
6. Detailed planning permissions on large sites were more likely to have been started (58.7%) than those on small sites (48.1%), probably due to phasing and longer builder out periods and greater levels of spent investment required to secure detailed consent.

The stalled metrics were very similar across large and small sites.

39%
planning permissions on sites +250 units

¹⁶Sites with 20 homes or more only

Figure 9: Composition of large site planning permissions

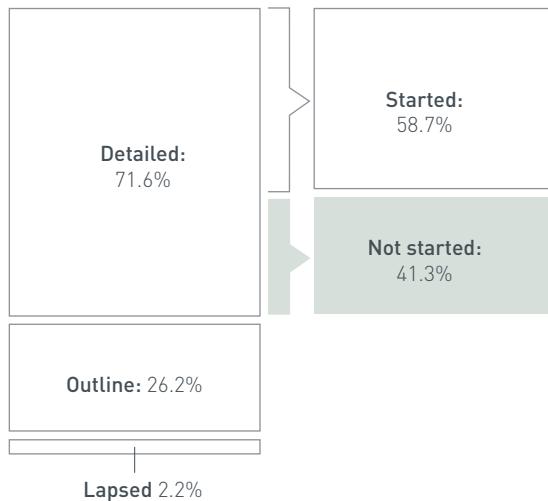
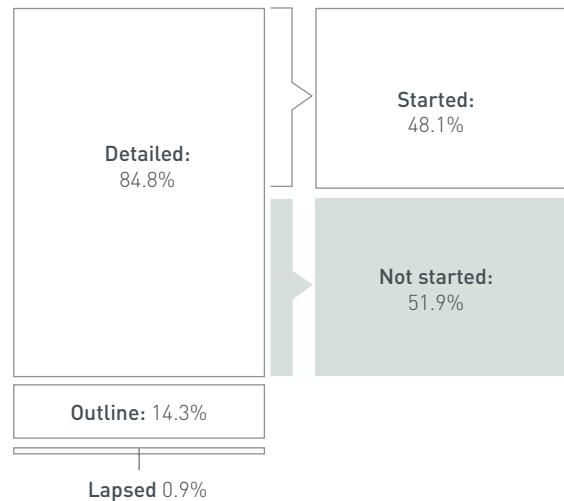


Figure 10: Composition of small site planning permissions



Sources: Barbour ABI

Snapshot 4: Larger sites tend to be held by non-builders

1. The distribution of large sites was skewed heavily away from builders at nearly 37.8% vs non builders 62.2%. Small site planning permissions were distributed evenly at 48.8% vs 51.2%.

Figure 11: Distribution of large vs small sites to builders vs non-builders



Snapshot 5: In London consents tend to be detailed, and are held by non-builders

1. There were 146,242 outstanding planning permissions in London. This is around 21% of the England total.
2. However, 98.6% of London's outstanding planning permissions were detailed. This contrasts to only around three-quarters (74.5%) in the rest of England.
3. The composition of London's planning permissions was very different to the rest of England in other respects too. 54.0% of London's planning permissions were on large sites and 71.0% were secured by non-builders. In the rest of England, the minority (35.0%) of planning permissions were on large sites and only 51.1% were secured by non-builders:

Table 7: Composition of planning permissions: London vs Rest of England

LONDON			REST OF ENGLAND		
	Builders	Non-builders		Builders	Non-builders
Large sites	26,348	52,681	Large sites	74,695	113,782
Small sites	16,130	51,083	Small sites	187,588	162,829

What does this new 2017 data tell us?

- 5.4 Although there are a lot of planning permissions in play (685,136), this is a stock figure and care must be taken in comparing it to flows, such as the number of homes built each year. It also includes outline planning permissions.
- 5.5 The stock of detailed planning permissions (546,496) must be sufficient for the entire post-planning development pipeline, allowing also for detailed planning permissions that do not make it through (lapse rates). It is also important to recognise that not all detailed planning permissions are implementable - many are being progressed but require discharges of pre-commencement conditions.
- 5.6 The data imply an **average post-planning development pipeline of around 48 months (4.0 years)**, on the basis of housing completions averaging just over 126,000 a year. i.e. 4 plots of land need to be held to support 1 completion in the steady state. This is higher than estimates contained in other reports.
- 5.7 The 48 months includes **21 months from obtaining detailed planning permission to a start** and 27 months from site start to completion ('build out'). The 21 months is a significant increase on recent research estimates and suggests significant challenges to making a detailed planning permission implementable.

- 5.8 Development **timescales involving non-builders are different** to those that do not. Firstly, it is worth noting that non-builders hold a disproportionately high level of outline planning permissions. 'Non-builders' are a very heterogeneous group and include landowners, land promoters, RSL's, the public sector, operational and other businesses securing planning permission for other business reasons (see chapter 1).
- 5.9 Secondly, **very few builders' planning permissions are 'stalled'**. But non-builders have a large number of 'stalled' sites reflecting time needed to enable land to be marketed and sold on to builders.
- 5.10 Thirdly, **builders are more likely to have started** their detailed planning permissions. Even stripping out stalled sites the ratio of those started to those progressing to start is close to 3:2. For non-builders the ratio is closer to 1:1. Builders are either (a) more able to 'get on with it' or (b) have a longer build out phase. The latter seems unlikely.
- 5.11 The 26% of outline planning permissions on large sites could reflect the increasing use of 'hybrid' consents, whereby early phases need detailed permission at the start but later ones need only outline planning permission.
- 5.12 Finally, **London has far more non-builders** and large sites than the rest of the country. This could act as a 'double-whammy' for London as both factors will act to elongate the timescales for delivering consented units compared to the rest of the country. It is noted that the stock of detailed planning permissions to annual completions in London is higher than the rest of England, currently standing at around 6:1.¹⁷
- 5.13 **London has a very low proportion of outline planning permissions.** This is perhaps obvious as it reflects strong policy support (pro-housing growth). Outline planning permission (largely focused around the principle of residential use) has less relevance in London. Instead the main planning issues there are around scale, mass and the proportion of affordable homes on a given site, which combined can often only be resolved through a detailed application. Thus, even non-builders in London will be required to secure detailed planning permission before selling it on for development by a builder – but this in turn increases the prospect that the builder has to submit a new application that reflects their product, part of the reason for a higher lapse rate in London.



¹⁷ However, the fact that nearly all of London's development land is brownfield – in contrast to the rest of the country - is likely to be another important factor.

Evidence from the Housebuilders

- 5.14 The following paragraphs compare the permissioned land banks of the ‘top three’ housebuilders – Barratt, Persimmon and Taylor Wimpey – with land banks overall, as depicted by the Barbour ABI data. The Barbour ABI data and assumes completions of c126,000 homes a year from sites above 20 units:

Table 8: total builder and non builders’ permissioned land banks in 2017 (Barbour ABI)

	Start of	Completions ¹⁸	Planning permissions		Of which: implementable ¹⁹ planning permissions	
		Units	Plots	Years	Plots	Years
Total	2017	126,000	685,136	5.4 ²⁰	<546,496	<4.3

- 5.15 The table below summarises information on the size of housebuilders’ permissioned land in their latest annual reports – for 2016.²¹

Table 9: Comparison of housebuilder land banks in 2006 (Callcutt RTPI) and 2016 (annual reporting)

	End of	Completions	Planning permissions		Of which: implementable planning permissions	
		Units	Plots	Years	Plots	Years
Barratt	2016	17,319	71,351	4.1	53,849	3.1
Persimmon	2016	15,171	97,187	6.4	52,800	3.5
Taylor Wimpey	2016	13,808	76,234	5.5	45,000 ²⁰	3.3
Top 3 total	2016	46,298	244,772	5.3	151,649²⁰	3.3

- 5.16 Table 9 confirms that **the ‘top three’ housebuilders are holding proportionately smaller permissioned land banks:** 5.3 years’ worth of output, compared to 5.5 years’ worth by the rest of the sector (and 5.4 years’ worth on average). Their implementable land bank is only 3.3 years’ worth of output. This is likely to reflect their clear focus on achieving a quick return on capital after a land investment is made.

¹⁸ Adjusted DCLG data

¹⁹ Assuming detailed planning permissions are a proxy for ‘implementable’ planning permissions, consistent with the reporting of many housebuilders. In reality not all ‘detailed planning permissions’ are implementable – the Barbour ABI data also include outline planning permissions with reserved matters in this category.

²⁰ Estimated or implied figure

²¹ With some supplementary figures obtained on request

6.0

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