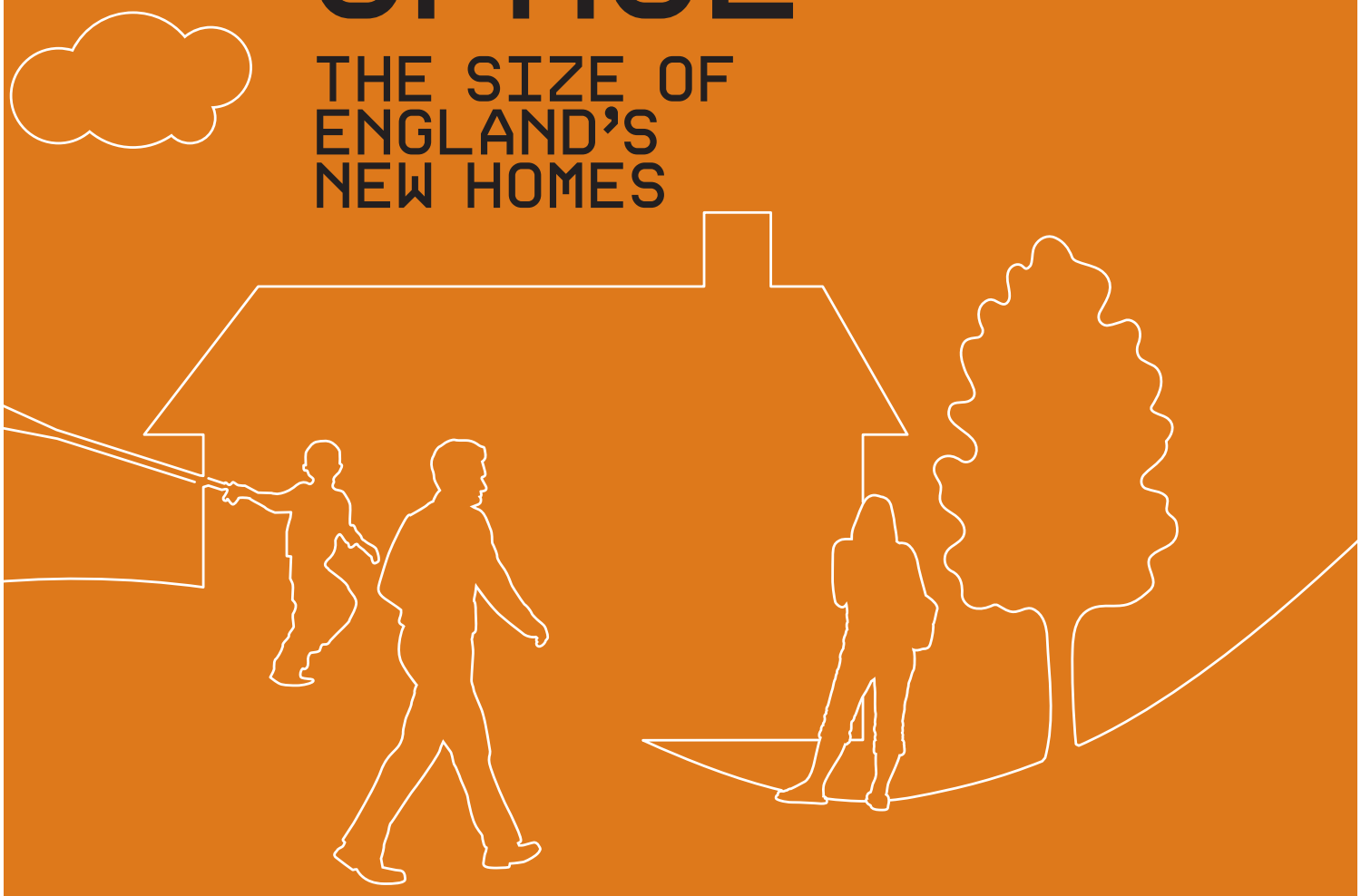
RIBA

THE CASE FOR SPACE

THE SIZE OF ENGLAND'S NEW HOMES



HOMEWISE

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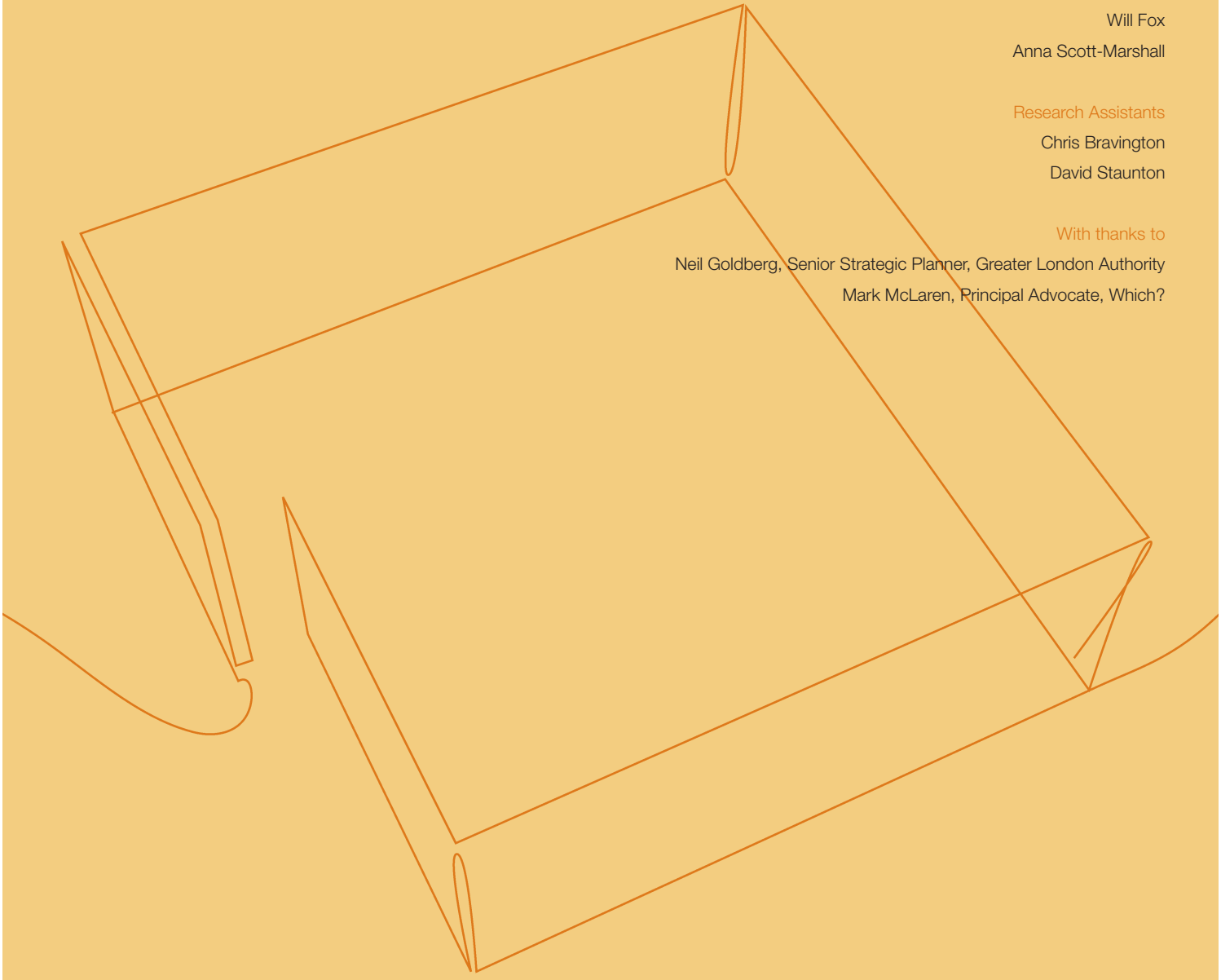

The Case for Space: the size of England's new homes

September 2011

Designed and illustrated by www.aubreykurlansky.co.uk | Printed by Cantate

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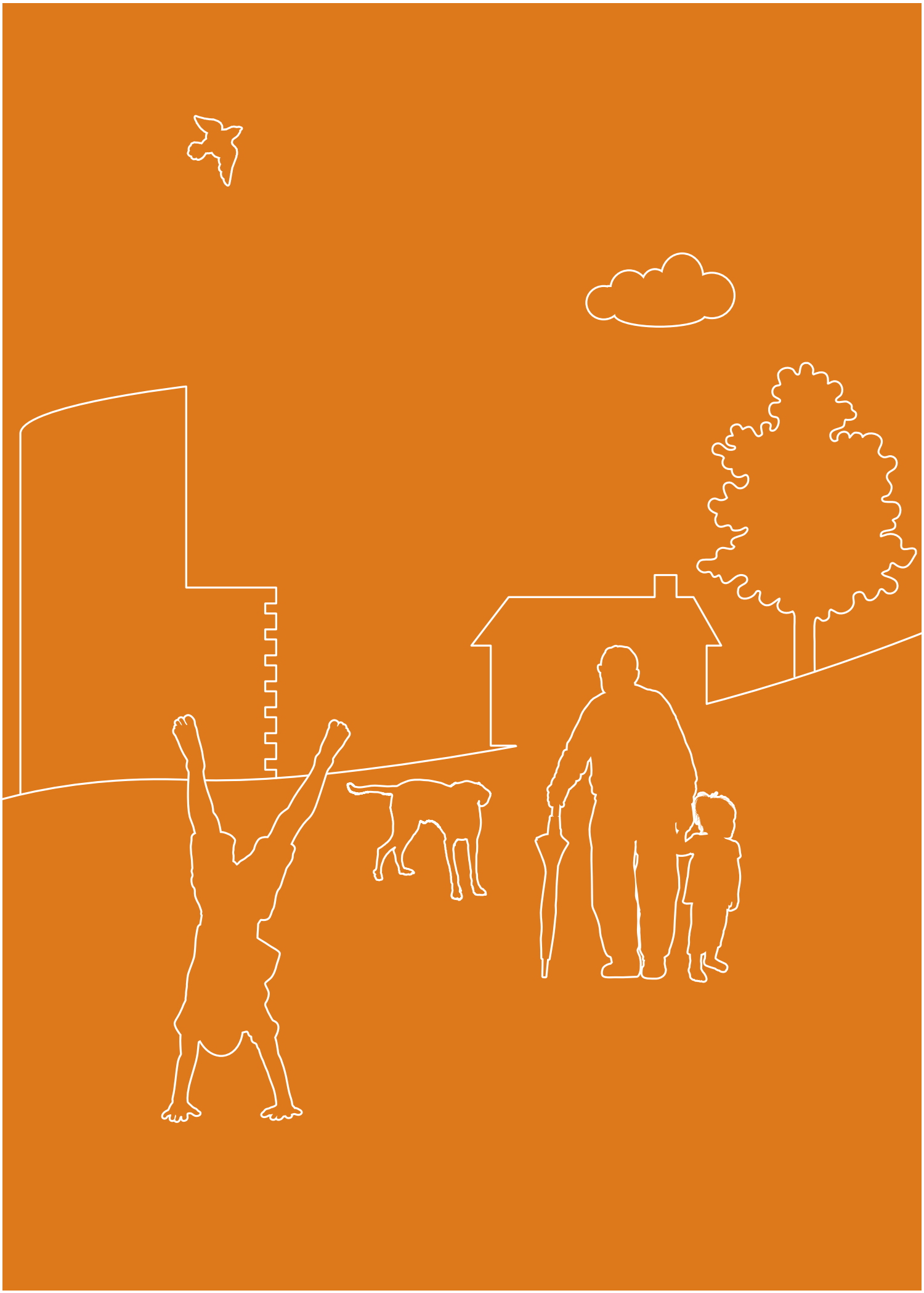


FOREWORD

Harry Rich

Chief Executive, RIBA

This report marks the start of a national conversation about how we live in the 21st century. A great deal of thinking already goes into examining aspects of our lives such as new technology and how that may impact on how we will live in the future. But not enough thought has been put into how fundamental changes to the way we live now and in the future might impact on our most personal space, our home.

At a time when the Government, the housebuilding industry, economists and homebuyers and renters are concerned about whether we are building enough new homes in the UK, it might seem odd to suggest that the focus should move to thinking about the quality of those homes. And yet this is the very time to do so. In a rush to build quickly and cheaply we risk storing up unnecessary problems for the future. We do not believe that there is any need to see a contradiction between building or refurbishing enough homes and making sure that they are of the highest quality.

This report focuses mainly on the size of homes, but we all know that this is only one factor in making a home a place of comfort and delight that supports the well-being of those that live in it. So as the RIBA's HomeWise Campaign develops we will engage users, architects, builders, policy-makers and others in an informed discussion about the ways that we can achieve a shared goal of having enough homes that meet or exceed the real needs of our population in the 21st century. We have started the RIBA HomeWise Campaign as we mean to go on, by recognising that the needs and opinions of homebuyers and renters must be at the core of our thinking.

This report is only the beginning of the conversation. We don't presume to know all the answers, but we hope to ask the right questions and we look forward to working in partnership with consumers, housebuilders, Government and many others as we seek the answers.

EXECUTIVE SUMMARY

Why is space an issue?

Space is an important factor when people are choosing a home, but many feel that newly built homes aren't big enough. Existing research suggests that consumers are right to be worried. A lack of space has been shown to impact on the basic lifestyle needs that many people take for granted, such as having enough space to store possessions or even to entertain friends. In more extreme cases, lack of adequate space for a household has also been shown to have significant impacts on health, educational attainment and family relationships.

Consumers buying or renting newly built homes in the UK are likely to get less space than their European neighbours. In the rest of Western Europe new homes being built are bigger, even in countries with similar population densities to our own.

How much space do we need?

The amount of space needed in a home depends on basic lifestyle needs and the number of people living there. People and their lifestyles change over time and homes need to be able to change with them.

Recent efforts have been made in London to ensure homes have enough space, with the introduction of minimum space standards. The standards were based on guidance about how much space is needed in the average household for basic furnishing and activities. Whilst there is a need for more detailed research into how the contemporary household lives and how they use the space in their homes, the RIBA believes that the London space standards provide the best available benchmark from which to assess whether a home is big enough.

What information is available to consumers?

The way the housing market works affects the way consumers behave. Although research has shown that they are dissatisfied with the size of rooms, consumers will often choose a smaller home with more bedrooms because they think it will make it easier to sell or rent in the future.

This counter-intuitive behaviour may be influenced by the way the home-buying process works in the UK. Unlike in many other countries, homes are marketed by the number of bedrooms rather than floor space. This idiosyncrasy of the UK housing market means that space is not easily understood or translated into any meaningful information for consumers.

Some useful information is available on marketing materials but it is often inconsistent in detail as there are no regulatory or industry requirements to record the floor area of homes. Providing more information would enable consumers to compare homes against one another more easily, make better informed decisions and understand what they are getting for their money.

A snapshot of space: RIBA research

Using publicly available documents submitted for planning applications, we assessed the internal floor area of privately developed homes on a sample of sites currently being built by England's 8 largest volume housebuilders. We compared our findings to the Greater London Authority's space standards to benchmark good practice.

WE FOUND:

Based on our sample, the average new home in England is only 92% of the recommended minimum size.

The average one bedroom home from our sample of 1,159 homes across 41 sites is 46 sqm. It is **4 sqm** short of the recommended minimum for a single storey, one bedroom home for two residents.

4 sqm is just a number. But in lifestyle terms it means…

The equivalent of **a single bed, a bedside table and a dressing table with a stool.** 3 sqm is the equivalent of **a 3 seat sofa and a desk and chair.**

4 sqm is the space that allows you to work at home at the computer in the day and also have an extra sofa when you've got friends round in the evening. 4 sqm might not sound like much but it could make everyday life a lot more comfortable.

The average three bedroom home from our sample of 3,418 homes across 71 sites is 88 sqm. It is **8 sqm** short of the recommended minimum for a two storey, three bedroom home for five residents.

8 sqm is just a number. But in lifestyle terms it means…

The equivalent of **a single bedroom and the furniture you'd expect to fit comfortably within it.** 7 sqm is the equivalent of **a galley kitchen and a coffee table.**

8 sqm is the single bedroom you're missing. It's the space for a new arrival to the family, the space that means the kids have a room of their own or a spare room for a guest to stay over. It's the space that could take the kitchen out of the lounge and the sounds and smells that go with it.

Recommendations

Improving the quality of new homes will be a joint venture for housebuilders, architects, planners and policy makers amongst others. Here are some initial recommendations stemming from our research.

What can the housebuilding industry do?

- **Improve marketing information:** Estate agents and housing providers should display clearly the floor area of homes on all marketing material. They should also show floor plans with furniture and other items illustrated, so that consumers can better understand what space means to them and their lifestyles.
- **Publish data about the size and quality of new homes:** To ensure greater transparency in the market place, developers should publish this relevant information relating to the quality of new homes.
- **Join the Future Homes Commission's conversation:** The Future Homes Commission has been set up by the RIBA to find out what consumers want and need, and make recommendations to architects, housing developers and other organisations to help the industry deliver the best homes possible.

What can policy makers do?

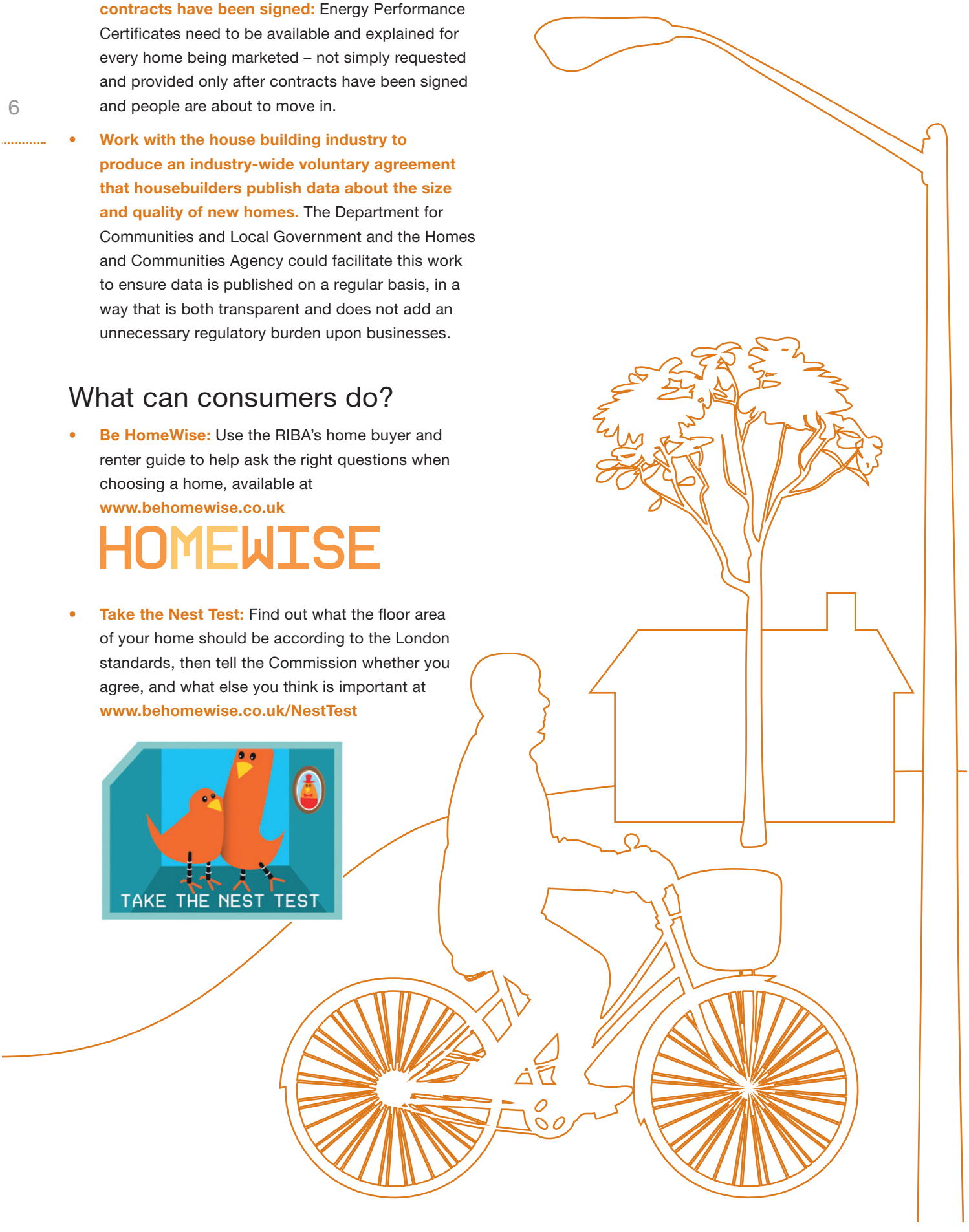
- **Make Energy Performance Certificates mandatory at point of market rather than after contracts have been signed:** Energy Performance Certificates need to be available and explained for every home being marketed – not simply requested and provided only after contracts have been signed and people are about to move in.
- **Work with the house building industry to produce an industry-wide voluntary agreement that housebuilders publish data about the size and quality of new homes.** The Department for Communities and Local Government and the Homes and Communities Agency could facilitate this work to ensure data is published on a regular basis, in a way that is both transparent and does not add an unnecessary regulatory burden upon businesses.

What can consumers do?

- **Be HomeWise:** Use the RIBA's home buyer and renter guide to help ask the right questions when choosing a home, available at **www.behomewise.co.uk**

HOMEWISE

- **Take the Nest Test:** Find out what the floor area of your home should be according to the London standards, then tell the Commission whether you agree, and what else you think is important at **www.behomewise.co.uk/NestTest**



INTRODUCTION

England has a severe housing shortage. There are fewer homes being built than the new households that are being formed each year.[1] This shortage affects every level of the housing market; millions of people are on social housing waiting lists,[2] the average age of a first-time buyer has increased to 37,[3] and there are reported problems in mortgage availability.[4]

It is clear that we need to build more homes and to tackle some of the systemic problems in the housing market. But in the rush to do so, we need to think about what we are building.

It is easy to think about housing in numbers, percentages, bricks and mortar. But we should not forget that housing is fundamentally about people.

Are our new homes meeting people's needs and if not why? What does the average consumer think about new build homes? How might the industry adapt to ensure they meet consumer demands?

1 The Department for Communities and Local Government statistics show that the number of households in England is projected to grow to 27.5 million in 2033, an increase of 232,000 households per year. See ***Household Projections, 2008 to 2033, England*** (DCLG, November 2010) In 2010 only 102,570 new homes were built. ***Housing and planning statistics (DCLG, 2010)***

2 ***Home Truths 2010***, (National Housing Federation, 2010).

3 ***Home Truths 2010***, (National Housing Federation, 2010).

4 The Council of Mortgage Lenders has said that the mortgage market needs increased funds. For example, ***Bank of England Credit Conditions survey response*** (CML, 2008)

A range of media articles have been reporting the lack of mortgage availability. For a recent example see ***"Mortgage woe haunts Barratt as home sales fall" in The Telegraph, 12 January 2011.***

WHY IS SPACE AN ISSUE?

What do households want and need?

Choosing a home to rent or buy is probably one of the biggest decisions we make. How we live, where we live and the type of home we live in has a big influence on us and our communities.

In December 2010, the RIBA commissioned a YouGov poll to test perceptions and preferences about newly built homes. It produced some interesting results.

The survey indicated that whilst there is a clear preference for homes from earlier periods (49%), nearly a quarter of people would prefer to move to a home built within the last ten years. New homes are clearly taken seriously by consumers as offering good places to live, but respondents were concerned that they lacked outside space and that rooms were too small.

ATTITUDES TO NEW BUILD HOUSING

The survey found that:

- 69% of people who **would** buy a new home said that energy efficiency was the most important reason for them
- 60% of people who **would not** buy a new home said that the small size of the rooms was the most important reason for them
- The top three things people look for when moving home are outside space (49%), the size of the rooms (42%), and proximity to local services (42%).
- 31% of people **would not** consider buying a home built in the last ten years, or would only consider it as a last resort. Of these, 60% said it was because the rooms are too small, 46% said they lack style, and 45% were concerned about the lack of outside space.
- **People believe that newly built homes fail to provide two of the top three things they are looking for when moving home: adequate space inside and outside the home.**

The perception that newly built homes fail to provide two important qualities was an interesting discovery from our survey. The number of rooms was less important on the priority list (it was a concern for 32% of respondents) – but people want rooms that are big enough (42% said the size of rooms was top of their list).

Other research has demonstrated the same issue; that the number of rooms in a home is one (arguably market-driven) issue, but a separate issue altogether is whether those rooms are big enough. In 2008 CABE and English Partnerships, with the RIBA, commissioned a survey of residents in London and the South East of England about the space available in their home and how they used it.[5] The aim was not to ask people whether they want more space but to ask them about how the space suits their needs and uses, in order to determine whether the amount of space was sufficient rather than to measure peoples' aspirations. The surveys were sent to people who had been living in homes built between two and five years earlier, so it captured views from some residents who had been living in new homes for several years.

The research found that residents in private homes did not have enough space for their furniture, to store their possessions, or to socialise. Even under-occupied households – homes with a spare bedroom – reported that space was insufficient for their needs.

5 CABE and English Partnerships with the RIBA commissioned research led by HATC and carried out by Ipsos MORI. Two publications resulted from this research, both in 2009. ***These are Space in new homes: what residents think*** (CABE, HATC, Ipsos MORI, 2009) and ***Resident satisfaction with space in the home*** (HATC, 2009)

SPACE IN NEW HOMES[6]

People couldn't fit all their furniture into their homes, nor move their furniture around or try different lay outs:

- 47% (58% of fully occupied homes) said there was not enough space for furniture they owned or would like to own
- 51% (65% of fully occupied homes) said the amount of space in their homes limited the choice of furniture layout in rooms and 36% in fully occupied homes said they had difficulty moving furniture around because of limited space in corridors and stairways

People didn't have enough storage for their possessions

- 57% (69% of fully occupied homes) said there was not enough storage for their possessions
- 35% said that they didn't have enough kitchen space for the appliances like toasters or microwaves, and 43% of respondents in fully occupied homes said they didn't have enough space for convenient food preparation

People didn't have enough space to socialise, entertain guests, or spend quiet time in private

- 34% of fully occupied households said they didn't have enough space to have friends over for dinner, and 48% didn't have enough space to entertain visitors at all.
- 28% of all respondents (48% of fully occupied homes) felt that they couldn't get away from other people's noisy activities

A Joseph Rowntree Foundation study in 2003 found that rooms were shrinking. The study analysed the size of bedrooms in new homes in two local planning authorities, and found that the number of bed spaces in a bedroom was shrinking. This means the size of the homes, and the number of people who could comfortably live in them, decreased. The report shows how a study in 1994 found that 8% of one bedroom homes only had one bed space and the remaining 92% had two bed spaces – which means that 92% of one bedroom homes would comfortably sleep (and house) two people. However, their 2004 study found an increase in the number of one bedroom homes that were only fit for one person – at 20%. Over ten years, housebuilders had been building smaller homes.[7]

The top three things people look for when moving home are outside space (49%), the size of the rooms (42%), and proximity to local services (42%)

How does the UK compare to other countries?

The findings of the research into what residents in new homes do and don't have space for demonstrates the impact that space has on people's everyday lives. But research also suggests that these problems are less likely to be faced by our European neighbours.

Through analysis of EU Housing statistics in 2005, Policy Exchange and Localis found that new homes in the UK not only appeared to be shrinking, but were also the smallest in Western Europe. Consumers in Ireland could expect new homes to be 15% bigger, in the Netherlands they were 53% bigger and in Denmark, the average newly built home was 80% bigger than in the UK.

6 ***Space in new homes: what residents think*** (CABE, HATC, Ipsos MORI, 2009)

7 Leishman C, Aspinall P, Munro M and Warren F J, ***Preferences, quality and choice in new-build housing,*** (Joseph Rowntree Foundation, 2004), page 15.

SPACE IN WESTERN EUROPE[8]

New homes appear to be getting smaller:

- The average home in the UK was 85m² and has 5.2 rooms, with an average area of 16.3m² per room.
- In comparison the average **new** home in the UK was 76m² and had 4.8 rooms, with an average area of 15.8m² per room.

This suggests that the size of **new** homes in the UK - the floor area, number of rooms and size of those rooms – has shrunk

New homes in the UK are the smallest in Western Europe. By way of compassion:

- In Ireland, new homes were 87.7m² (15% bigger)
- In the Netherlands, new homes were 115.5 m² (53% bigger)
- In Denmark, new homes were 137m² (80% bigger).

One reason many countries have bigger new homes is that they have space standards that set the minimum floor areas. In England and Wales there have only been space standards for publicly funded homes, and even these have been small compared to international examples.

The table below produced by mae Architects shows how new standards introduced in London compare to examples of Irish and German housing policy for single storey apartments.[9]

Gross internal Area (GIA) m²:	1b1p	1b2p	2b3p	2b4p	3b4p	3b5p	3b6p	4b5p	4b6b
London Housing Design Guide	37	50	61	70	74	86	95	90	99
Dublin City Development Plan (min)		55	65	85		100			
Germany	48	60	70	88		100			110

NB: 'b' refers to bedroom, 'p' refers to people, ie '1b1p' means 1 bedroom home suitable for 1 person.

Dublin's apartments are generally required to be much bigger than London's, and new flats built in Germany have to be even larger. A 3 bedroom flat suitable for five people has to be 86 sqm in London: it has to be 14 sqm bigger in Dublin and in Germany – that's a 16% increase and 14 sqm is about the size of a living room.

The restriction of land for housing development can go some of the way to explaining why UK homes are so much smaller. However, an analysis of EU housing statistics reveals that other countries as densely populated as ours are able to provide bigger homes. Data from 2003 shows that the UK has a population density of 243 people per sq km whereas the Netherlands has 456 people per sq km and is building bigger homes.[10] Consumers in England appear to be being short changed on space.

Whilst newly built homes are much smaller than in many other European countries, statistics reveal that the average useable floor area per person in England is actually quite

8 Evans A and Hartwich O M ***Unaffordable Housing: Fables and Myths*** (Policy Exchange and Localis, 2005). For a full table of values see page 24.

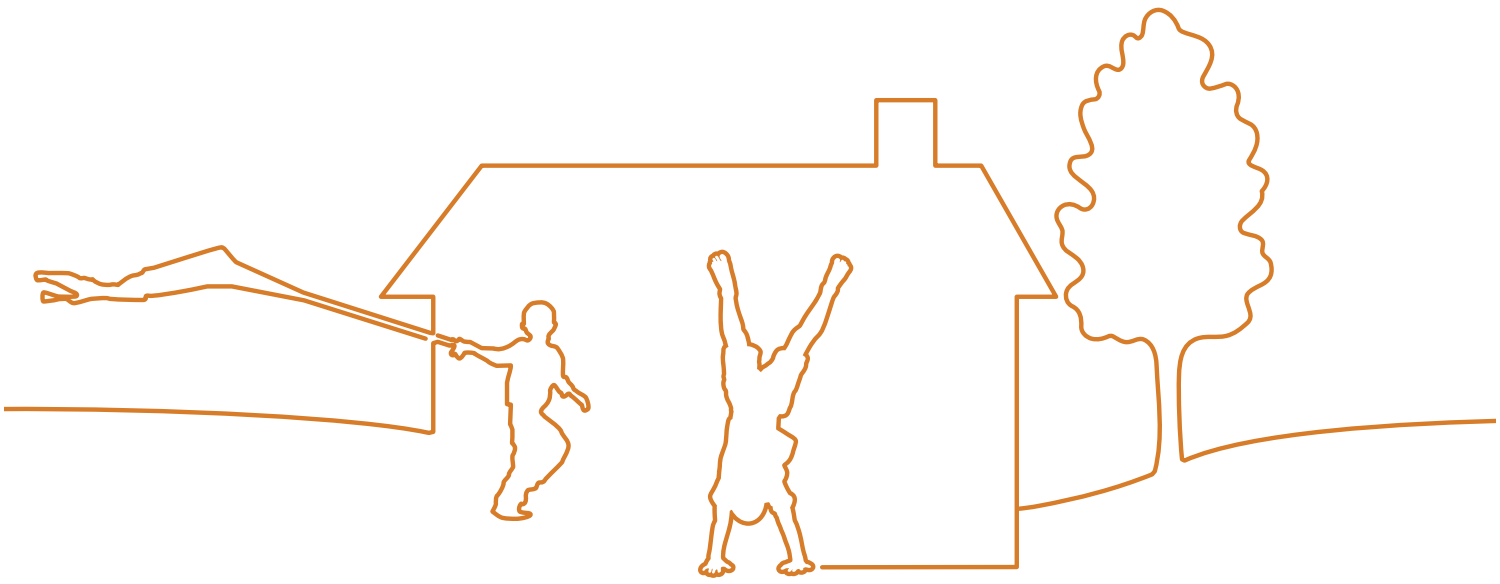
9 We will discuss London's space standards in more detail later in this report.

10 ***Housing Statistics in the European Union 2004*** (February 2005) edited by National Board of Housing, Building and Planning, Sweden and Ministry for Regional Development of the Czech Republic. See pages 12-13.

high in comparison to countries such as the Netherlands and Ireland. [11] This would suggest that even if we are building smaller homes, on average across all of our homes, people still have more space to live in.

There is, however, another issue at play here. Although on average we have more space across all homes, there are a lot of people who choose to live in homes with more bedrooms than they need so that they have enough space. The English Housing Survey Household Report 2009-10 suggests that over half of the households surveyed have more bedrooms than they need.[12] If this proportion is representative then it means that under occupied homes could be skewing statistics about the average floor area in the home per person in England. This issue does raise an important point: how do we know what adequate space means, and how do we judge it?

A 3 bedroom flat suitable for five people has to be 86 sqm in London: it has to be 14 sqm bigger in Dublin and in Germany – that's a 16% increase and 14 sqm is about the size of a living room.



11 See ***Housing Statistics in the European Union 2004***. Page 38 reveals that on average each person has 44 sqm of usable floor area in England compared to 41 sqm in the Netherlands and 35 sqm in Irleand.

12 ***English Housing Survey Household Report 2009-10*** (Department for Communities and Local Government, July 2011). The report states that 2.9% of households are overcrowded whereas 35.3% have one bedroom more than they need by the bedroom standard of overcrowding and a further 36.9% are under occupied.

HOW DOES SPACE IN THE HOME IMPACT ON OUR LIVES?

Beyond consumer perceptions, research has also demonstrated the impact that adequate space has on the lives, habits and relationships of a household and community, and also the wider impact on public services.

At its most basic level, the space in a home impacts on:

- how and where people prepare and eat food;
- how people deal with household waste and recycling;
- how possessions are stored and how the living space looks and feels to inhabit;
- what furniture can be used and the activities it enables;
- whether people can socialise with guests or other members of the household;
- how much privacy people have for studying, working, relaxing or leisure;
- and whether there is room for additional changes to the environment, for example to make life easier if the circumstances or health of members of the household change.

Concerns about the size that homes need to be can be traced back to the Victorian period, when overcrowding created health issues. Later, in 1919 the Tudor Walters Committee reported on regulations dictating the space needed in council properties and in 1944 the Dudley Committee recommendations retained minimum room sizes.

However, the Parker Morris Committee report *Homes for today & tomorrow* of 1961 stated that as a result of the recommendations of the 1919 and 1944 committees, local authorities had a tendency to focus on "working out a pattern of room areas which will comply with the standards."[13] In contrast, the Parker Morris Committee shifted this emphasis by declaring "the important thing in the design of homes is to concentrate on satisfying the requirements of the families that are likely to live in them."[14]

A table of recommended standards for floor space dictated the square feet needed room by room according to the number of people to live within the home and the number of storeys within the home; not specifically the number of bedrooms.

The focus of *Homes for today & tomorrow* was family needs, with research into minimum design standards that would reflect domestic appliances (the number of households with televisions and vacuum cleaners is quoted), food preparation and eating, children's educational needs, and more generally the lifestyle requirements of the household. For example, the report states "The living room must provide space sufficient for two or three easy chairs, a settee, a television set, small tables, and places suitable for a reasonable quantity of other possessions such as a sewing box, toy box, radiogram and bookcase."[16] It is clear from statements like this just how much the standards were designed to reflect contemporary living and the space needed for furniture and appliances; but also just how out of date these standards are, and why new detailed research is needed today. The Parker Morris space standards were removed in the 1980s when the government of the day argued that the market would provide the right type and size of homes. However, rather than a variety of homes being delivered to cater for different sections of the market, research shows that homes have been shrinking ever since.[17]

"The major changes required can be summed up in two words – space and heating." [15] Homes for today & tomorrow

The BRE estimated that the cost of overcrowding on the NHS was £21,815,546 per year.

13 ***Homes for today & tomorrow*** (Ministry of Housing and Local Government, published in London by Her Majesty's Stationary Office,1961, reprinted in 1962). See page 3.

14 ***Homes for today & tomorrow***, pages 3-4.

15 ***Homes for today & tomorrow***, page 2.

16 ***Homes for today & tomorrow***, page 10

17 ***Unaffordable Housing: Fables and Myths***

Social impacts

A review of existing research suggests that the space in homes can affect the educational outcomes of children, public health costs, individual wellbeing and interpersonal interactions and relationships.[18]

Overcrowding is identified within the definition of poor housing in reports published by Shelter and by the Building Research Establishment (BRE), some examples of which are found below.

HEALTH AND PUBLIC COSTS

Overcrowding and inadequate space are amongst the 29 'Housing Health and Safety Rating System' hazards identified by the BRE as contributing to the costs to the NHS. Using data from the English Housing Survey and a detailed cost analysis model, the BRE estimated that the cost of overcrowding on the NHS was £21,815,546 per year.

The report says: "The total cost [to society of poor housing in England] is some £600 million per year in terms of the savings in the first year of treatment costs to the NHS if the hazards were removed, or at least reduced to an acceptable level. The full costs to society are estimated to be some £1.5 billion per year." [19]

EDUCATION, OPPORTUNITIES AND FUTURE HOUSEHOLD INCOME

ECOTEC assessed the critical impacts that poor quality, overcrowded, and temporary accommodation can have on individuals' health and well-being, likelihood of criminality, and educational attainment.

The report says: "There is strong evidence that poor housing conditions result in educational underachievement, with children in better quality homes gaining greater numbers of GCSEs, 'A' levels and degrees, and therefore having greater earning power. Purely based on differences in GCSE results, we calculate the bill amounts to £14.8 billion pounds in lost earnings forecast for this generation in poor housing." [20]

Shelter released a report analysing how children living in overcrowded homes are affected by their living conditions.

The report says: "Overcrowding matters because it impacts on all aspects of people's lives. For children, it means increased risk of infections and a lack of space and privacy, which can affect how they do at school. For parents, it is a barrier to providing positive opportunities for their children and a constant cause of anxiety and depression." [21]

Another Shelter report gives a comprehensive review of research into the impact overcrowding has on the health of children. [22] In 2004 the then Office of the Deputy Prime Minister produced a similar literature review, logging evidence about effects in physical and mental health, childhood development and personal safety. [23]

18 In April 2010 CABE published a literature review produced by academics at University College London summarising all the existing research about the benefits of space standards. The researchers of the report collate research into seven areas: general health and wellbeing; family life and children; productivity; adaptability; inclusive homes; anti-social behaviour; and market benefits. See Carmona M, Gallent N, Sarkar R, ***Space standards: the benefits*** (University College London for CABE, April 2010)

19 Roys M, Davidson M, Nicol S, Ormandy D and Ambrose P, ***The Real Cost of Poor Housing*** (BRE Trust Report FB23, BRE Press, February 2010), page 11.

20 Friedman D, ***Social impact of poor housing***, (ECOTEC, March 2010), page 1

21 Reynolds L, Robinson N, and Diaz R, ***Crowded house: Cramped living in England's housing*** (Shelter,

22 Harker L, ***Chance of a lifetime: The impact of bad housing on children's lives,*** (Shelter, September 2006).October 2004), page 3.

23 ***The Impact of Overcrowding on Health & Education: A Review of Evidence and Literature*** (Office of the Deputy Prime Minister, May 2004).

RELATIONSHIPS AND FAMILY WELLBEING

A report by Shelter surveyed households about the effects overcrowding had on their sleeping patterns, privacy and relationships within their family.

The report says: “Strong agreement that overcrowding harmed family relationships stood at 77 per cent. Out of 14 tick boxes about the possible effects of overcrowding, a lack of privacy was the one that received the highest rate of strong agreement with 92 per cent of overcrowded families selecting it. Eighty-one per cent strongly agreed that overcrowding caused fighting and arguing among their children.” [24]

Overcrowding is a specific problem relating to a home that is too small for the number of people living within it. It gives us an indication of both the public and lifestyle costs of a lack of space.

HOW MUCH SPACE DO WE NEED?

Although minimum space standards for England do not currently exist, new minimum space requirements based on daily activities and the space needed for them have recently been introduced by the Greater London Authority (GLA). These apply to both publicly and privately financed homes in London and are intended to ensure that new homes are comfortable and functional.[25]

The London standards set a minimum gross internal floor area against the typology of the home (number of bedrooms and storeys) and the designed occupancy level (the number of people the home is designed to accommodate comfortably).

The required standards are as follows:

	Dwelling type (bedroom (b) / persons-bed spaces (p))	Essential Gross Internal Area (m²)
Flats	1p	37
	1b2p	50
	2b3p	61
	2b4p	70
	3b4p	74
	3b5p	86
	3b6p	95
	4b5p	90
	4b6p	99
Two storey houses	2b4p	83
	3b4p	87
	3b5p	96
	4b5p	100
	4b6p	107
Three storey houses	3b5p	102
	4b5p	106
	4b6p	113
	For dwellings designed for more than 6 people…	… at least 10 m² gross internal area should be added for each additional person.

The Gross Internal Floor area is the internal area of the dwelling measured to the internal face of the perimeter walls

24 Reynolds L and Robinson N, ***Full house? How overcrowded housing affects families*** (Shelter, 2005), page 8.

The standards were informed by research by HATC[26] which drew conclusions about how much space is required for the basic daily needs of the household, such as cooking and washing, basic furnishing and space sufficient for eating, socialising and playing. This was used to suggest 'safety net' minimums and recommended usable minimum floor areas. The Space Standards in the London Plan take into account the safety net standards but also current furniture sizes and circulation requirements and have more regard to usability, in the vein of the original Parker Morris committee's work.

HOUSING SPACE STANDARDS

The report found that homes should provide adequate space on the following terms:

1. space for the furniture & equipment needed by residents (including occasional visitors)
2. space to access / use the furniture & equipment, doors and windows
3. space to move around the home among the furniture & equipment
4. space to undertake normal living activities that do not just use furniture:
   a) washing
   b) dressing
   c) cooking
   d) eating
   e) playing
   f) socialising
5. space for storage of "clean and dry" items on shelves (linen, boxed up possessions, mops, hoover (sic) etc)
6. space for "dirty" storage such as bicycles [27]

The report grouped these into primary and secondary needs: [28]

"The primary areas that we believe should be addressed are:

a) the amount of space allowed for cooking/eating/living
b) the amount of space allowed in bedrooms
c) internal general storage for "clean and dry" items

The secondary areas / issues that we believe could be addressed are:

1) room shape or minimum dimensions e.g. width to ensure that the floor area is really useable
2) general storage for "dirty" items
3) space to allow for playing (within the dwelling)
4) private external space (gardens or balconies)
5) mobility issues

25 ***London Housing Design Guide Interim Edition*** (Design for London for the Mayor of London, August 2010) and ***The London Plan: Spatial Development Strategy for Greater London*** (Greater London Authority, July 2011), page 86. The London Plan is the spatial strategy for London and local authorities should set their own planning policies within its context. It includes space standards for all new housing development whether publicly or privately financed and regardless of which tenure the property is expected to be, and which developers are encouraged to exceed. The Plan states that minimum space standards which generally conform with those in the table above should be incorporated into each local authority's Local Development Framework (LDF): "The Mayor will, and boroughs should, seek to ensure that new development reflects these standards." (See pages 86-87) At this moment, there are no other minimum space requirements that apply to all areas of the housing market.

26 ***Housing Space Standards*** (HATC Limited for the Greater London Authority, August 2006).

27 ***Housing Space Standards*** page 56. The report also found that space was needed to avoid feeling crapmed and for rooms to be sufficiently separated to allow for privacy. The report anticipates that these can be accounted for within minimum space standards because the former is a matter of expectation, and the latter – partitions and walls within a home – can change over time if there is sufficient space and flexible design overall.

28 ***Housing Space Standards*** page 58.

The report also found that the level and duration of occupancy (how many people live in the home, how often they are there and during what hours) affect the space needed within the home. The recommended space standards are based on the designed occupancy level and assume permanent occupancy, and are suitable for residents who would want to spend high proportions of time at home.

In addition to the research discussed thus far, there are guides about what constitutes adequate space and how to design homes that are functional and comfortable. These vary in their approach; for more information please see Appendix 3.

Will bigger homes mean fewer homes?

The Greater London Authority investigated whether increasing the size of new homes would lead to lack of affordability within the housing market when it proposed new minimum space standards in its draft London Housing Design Guide. Would it still be viable for developers to deliver new homes, would a 10% increase in size lead to a 10% increase in costs for the developer or purchaser, or would it lead to fewer homes being built if they each take up more space on a site?

Detailed research analysed eight example schemes to assess the cost and delivery impact of the new standards. The new minimum floor areas did not impact on the number of homes being delivered. The report suggested that by working with designers it was expected that the developer would be able to avoid reducing the number of homes.[29] Increases in building costs due to the space standards ranged from 10% to 1%, but the report concluded that the London Housing Design Guide would, in the majority of cases, have little impact on the number of homes delivered, and the additional building costs would also reduce by 2013.[30]

Standards today: the RIBA's view

The London space standards are the best standards available at present in that they offer a much needed improvement on the size of homes currently being built in England.[31] However these standards are fundamentally an update on the 60 year old Parker Morris standards and more research is needed into what constitutes adequate space to suit contemporary living.

The RIBA supports the London space standards. Although we would not consider them to be best practice, we believe homes that meet or exceed these minimums to be adequately sized to function as homes; in short, they are fit for living in. There is no reason that homes falling below these levels should be built because they would not be fit for the activities people need to carry out within their homes.

Increases in building costs due to the space standards ranged from 10% to 1%, but the report concluded that the London Housing Design Guide would, in the majority of cases, have little impact on the number of homes delivered

29 ***Draft London Housing Design Guide: Cost and Delivery Impact Assessment Pre Publication Draft.*** (Homes and Communities Agency, London Development Agency and Greater London Authority, March 2010), page 28.

30 Quoted from the article 'Living room' in ***RIBA Journal*** October 2010. Details are from the ***Draft London Housing Design Guide: Cost and Delivery Impact Assessment Pre Publication Draft.***

31 Based on figures in ***Unaffordable Housing: Fables and Myths*** and the RIBA's data below.

WHAT INFORMATION IS CURRENTLY AVAILABLE TO CONSUMERS?

Some research has looked at the size of new homes, but this information has not been made available in the marketplace for consumers to base their decisions on. When it comes to the size of a home, people choose to buy or rent the size of home they can afford. But people cannot meaningfully compare homes, or the performance and unique product selling points of the developers providing new homes, until consumer information is improved.

Marketing information

Unlike many other countries, it is common for homes in the UK to be sold by the number of bedrooms they have, rather than the floor area. Many organisations, including the RIBA,[32] have commented on the need to improve marketing information. Whilst it may sound like a trivial issue, this idiosyncrasy of the British housing market has been shown to have a big influence on the way consumers behave and may have contributed to a lack of understanding about space in the home.

This issue was highlighted in research by the Joseph Rowntree Foundation (JRF) in 2003, which used discussion groups and interviews with consumers to examine preferences and attitudes towards new build housing. The study found that people were dissatisfied with small bedrooms, but would often choose a home with more but smaller bedrooms (rather than fewer but larger bedrooms) because they felt it would be easier to sell in the future.[33]

PREFERENCES, QUALITY AND CHOICE

"Prospective buyers control the time and financial costs involved in searching for a suitable property by limiting the properties they view according to a short list of criteria. Number of bedrooms is a common property descriptor. The desirable minimum is for a bedroom for each cohabiting couple and one for each of their children, or at least one for up to two children of the same sex. However, internal floor area or average room size is not normally used as a property descriptor in the UK, unlike some other countries. So, number of bedrooms is likely to be a more important factor than bedroom size in terms of generating interest in a property that is on the market". [34]

The JRF study demonstrated that a lack of detailed information in the consumer market leads to some quite counter-intuitive behaviour. Floor area is not translated into meaningful information for consumers and unlike much of Europe or the United States, it is not part of the common consumer language. If this culture were to change, or if on an even simpler level, marketing information at the very least suggested how many people would be able to live comfortably within the home (for example, "two bedroom home suitable for three persons according to current standards") consumers would be able to make more informed decisions.

This is not to say that consumers in the UK have no information provided to them. Marketing information sometimes includes areas of rooms. It might do this in the format of floor plans which show the dimensions of rooms or list the floor areas of rooms. If there are plans, they might also indicate furniture layouts, and sometimes the entire internal gross area of the property is indicated. All of these options are useful to consumers, and where these details are given they must be accurate – as mandated by the Property Misdescriptions Act 1991.[35] However, the Act does not mandate what information must be provided in the first place and there are no requirements to show overall internal floor area (which

32 ***Improving Housing Quality: Unlocking the Market*** (Neale J and RIBA, 2009), page 22.

33 Preferences, quality and choice in new-build housing, page 14

34 Preferences, quality and choice in new-build housing, page 14

35 See ***http://www.legislation.gov.uk/ukpga/1991/29/contents*** for details of the Act.

would include corridors, stairways and storage areas or cupboards outside the main rooms). The level of detail consumers receive is therefore inconsistent.

Within the industry, certain standards of marketing information are expected. In April 2010 the NHBC and MD Insurance Services Ltd set up the Consumer Code for Home Builders, which applies to new or newly converted homes built by home builders who are under the insurance protection of one of the supporting Home Warranty Bodies. It places mandatory requirements on those home builders regarding how they market and sell homes, including "a brochure or plan reliably showing the layout, appearance and plot position of the Home" and "the standards to which the Home is being built."[36] However, although there is an obligation to provide some useful information, crucial details such as the size of the home and its dimensions are missing. [37]

Energy Performance Certificates

One piece of information that is mandatory and which consumers have now become familiar with is the Energy Performance certificate (EPC), which is intended to provide homebuyers and renters with useful information on the energy performance of a home they are considering buying. The EPCs also show the internal floor area of the property, which is used to estimate the energy use of the property and provides consumers with valuable information about space. However, although consumers should be able to look at the EPC to help make their decision about a home, estate agents and other organisations marketing the home do not have to provide the EPC immediately. They need to have requested one, but it often only becomes available once the household has agreed to rent or buy the home.[38] If this process were to be fast-tracked and mandatory at the point of market, consumers would have much better information both on energy and space, from which to make a better informed decision about what constitutes a good home. The Department for Communities and Local Government is currently considering changes to regulation to ensure that an EPC has been commissioned before a home is marketed for sale or rent, and is preferably available within 7 days.

This improvement to the regulation will be beneficial to consumers seeking information about a home and should be encouraged.

Public information on space in homes

There is both a lack of information available to consumers about the sizes of homes, and also a lack of recent official data about the average size of new homes in England. In addition, few housebuilders publish data on the average size of their homes. It is therefore difficult to gain a national picture and for consumers to truly assess the state of the new build market.

Numerous efforts have been made to shed some light on this issue and whilst some useful studies have been undertaken, the evidence remains patchy and not always made widely available to consumers. For example, research by Scott Wilson on behalf of CABE[39] into the usable area of new homes and research by HATC[40] into the size of new homes in London and the South East both highlighted a lack of space and provide useful information. When the Homes and Communities Agency consulted on their proposed new standards in 2010, their evidence base took into account the floor areas of homes reported by a National Affordable Housing Programme survey and a Home Builders Federation survey of the top and bottom average floor areas by 7 major housebuilders.[41]

Some information is recorded in an official capacity about the size of homes but it is neither available nor easily accessible for the public. The floor space on EPCs is recorded by a centrally appointed organisation but it is not analysed and as the address of the property is also recorded on the EPC, the certificates are data protected. More detailed information is publicly available on planning applications submitted to local authorities, but this is not recorded or analysed. Meanwhile, the English Housing Survey also published the floor area of the homes in the sample it analysed, but not in relation to the dates in which they were built nor the number of bedrooms.[42]

It is clear that it will be difficult to get a comprehensive picture of the size of new homes unless information is recorded and made publicly available.

36 ***Consumer Code for Home Builders***, Second Edition, January 2010.

37 The Office of Fair Trading researched the home buying and selling market in the UK, publishing a report in February 2010. The focus was on the pricing of homes and the competition between estate agents, rather than on the quality of information given to consumers. As a result, their recommendations did not focus on marketing information about the home, such as how the size of the home is explained. See ***Home buying and selling: a market study*** (Office of Fair Trading, February 2010).

38 Regulation 5 of the Energy Performance of Buildings Regulations 2007 states that an EPC must be available free of charge and at the earliest opportunity. For more information see ***http://www.legislation.gov.uk/uksi/2007/991/contents/made*** or Direct Gov information at ***www.direct.gov.uk***

39 ***Dwelling Size Survey*** (Scott Wilson for CABE, April 2010). Scott Wilson's sample of 200 standard dwellings found that the average one bedroom flat was 46.6 sqm and the average three bedroom house was 95.6 sqm.

40 ***Room to Swing a Cat? The Amount and use of Space in New Dwellings in London and the South East*** (HATC, March 2010). HATC's analysis of marketing materials for 89 homes found that one bedroom flats for two people were on average 47 sqm and the most common size groups for three bedroom houses were 70-85 sq m.

41 ***HCA Proposed Core Housing Design and Sustainability Standards Consultation Supporting Evidence Base*** (Homes and Communities Agency, March 2010). See Figure 4

42 ***English Housing Survey Headline Report 2008-09*** (Department for Communities and Local Government, February 2010).

A SNAPSHOT OF SPACE: RIBA RESEARCH

Our research provides a snapshot of new homes and the space inside them. We looked at the size of one and three bedroom homes developed by the top eight volume housebuilders by turnover. Together they account for roughly 36% of new homes built each year.

We recorded floor areas from local authority planning papers published online for a sample of 80 sites. We randomly generated ten regionally spread sites recently built or currently being built by each housebuilder.[43] We removed affordable homes from our sample where possible. The appendix has more detail on our method of selecting and analysing sites and capturing data on floor areas.

43 The top eight housebuilders are defined by turnover, in the ***Housing Market Intelligance Report 2010*** (Housebuilder Media, October 2010); please see the Appendix for further information. We prioritised homes currently being built. If we could not find enough sites in each region by each housebuilder, we would look at homes already built or that have recently received planning approval. For full details of our methodology for selecting sites to analyse, please see the Appendix.

The Results

Based on our sample, the average new home in England is only 92% of the recommended minimum size (advised by Greater London Authority space standards).

The average one bedroom home from our sample of 1,159 homes across 41 sites is 46 sqm (495 sq ft). It is 4 sqm short of the recommended minimum for single storey, one bedroom home for two residents.

4 sqm is the equivalent of **a single bed, a bedside table and a dressing table with a stool.** 3 sqm is the equivalent of **a 3 seat sofa and a desk and chair.**

The most common one bedroom home was 45 sqm, which is smaller still.

The average three bedroom home from our sample of 3,418 homes across 71 sites is 88 sqm (947 sq ft). It is 8 sqm short of the recommended minimum for a two storey, three bedroom home for five residents.

8 sqm is the equivalent of **a single bedroom and the furniture you'd expect to fit comfortably within it.** 7 sqm is the equivalent of **a galley kitchen and a coffee table.**

The most common three bedroom home was 74 sqm, which is smaller still.

The housebuilders we analysed sites by are:

No	Housebuilder	Turnover (2009 accounts)	Units completed (2010 figures for previous year)	Market share (based on 118,000 units completed in 2009) [44]
1	Barratt	£2,096 m	13,202	11.2%
2	Taylor Wimpey	£1,700 m	10,184	8.6%
3	Persimmon	£1,421 m	8,976	7.6%
4	Bellway	£684 m	4,380	3.7%
5	Berkeley	£672 m	1,501	1.3%
6	Galliford Try	£420 m	1,769	1.5%
7	Crest Nicholson	£381 m	1,878	1.6%
8	Lovell Partnerships	£372 m	1,118	0.9%
Total		£7,746 m	43,008	36.4%

NOTE ON THE TABLE: This table is based on the Housing Market Intelligence Report 2010. The original top eight included McCarthy & Stone at number 7, but we have removed them from the table and moved Crest Nicholson and Lovell Partnerships up one place each. This is because McCarthy & Stone only build retirement homes, so their design requirements and market are different.[45]

44 ***House Building: December Quarter 2009, England*** (DCLG Statistical Release, February 2010)

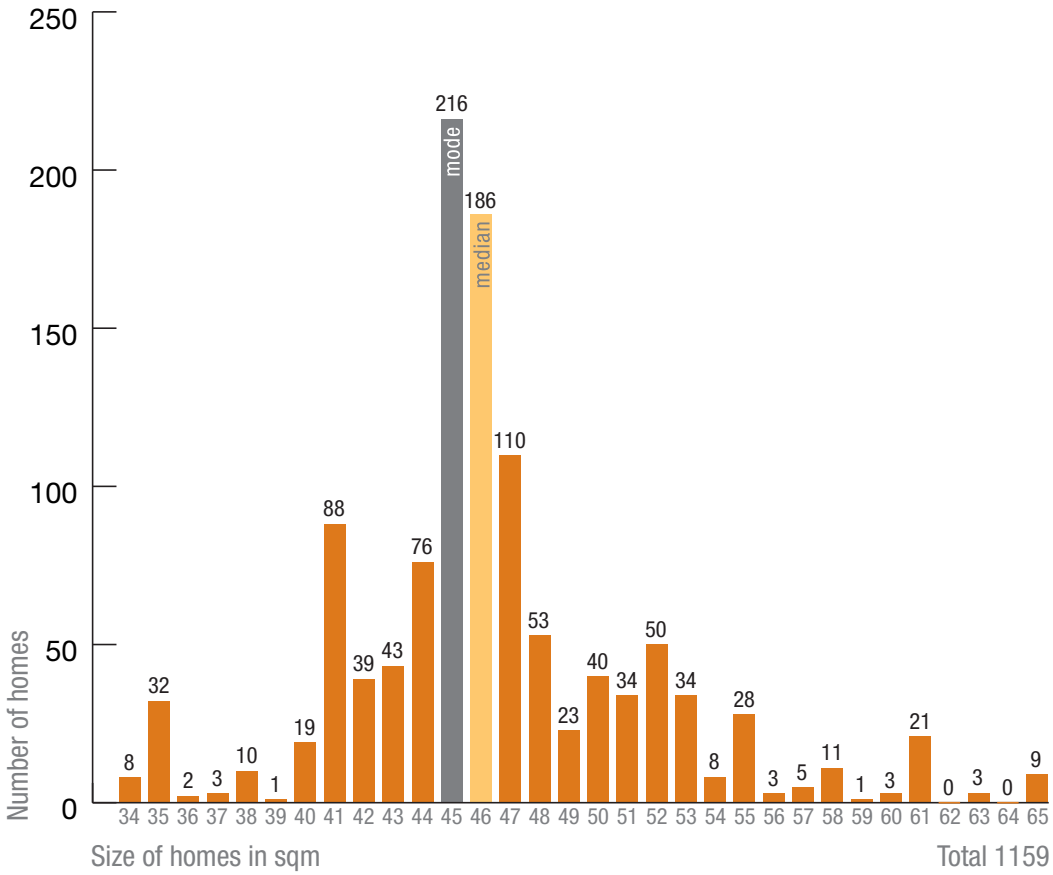
45 The report collates information from reports and financial statements released publicly or provided by the companies. The figures are for their own business years, which vary, and the writers of the report note that comparisons are therefore difficult. This means the market share, based on the number of homes built, is illustrative rather than accurate. The number of units completed by Barratt, for example, is taken from their reports published June 2009, whereas for Taylor Wimpey it is from reports published December 2009. To calculate the market shares, we have used the DCLG statistics for the number of homes built in 2009; therefore the annual figures do not match up perfectly.

One bedroom homes

Housebuilder	Average size of 1 bedroom flat and maisonette	Number of sites in sample	Number of homes in sample
Persimmon	49 sqm	6	43
Berkeley	47 sqm	8	334
Taylor Wimpey	47 sqm	5	93
Bellway	47 sqm	4	151
Crest Nicholson	47 sqm	5	209
Galliford Try	46 sqm	3	105
Barratt	45 sqm	8	158
Lovell Partnerships	43 sqm	2	66

Our sample assessed a total of 1,159 individual homes on 41 sites across England.

- The mean size of all one bedroom homes we analysed was 46 sqm
- The mean size of one bedroom homes from the averages achieved by each housebuilder was 46 sqm.
- The median size (middle of the sample) was 46 sqm
- The mode (most common size) was 45 sqm

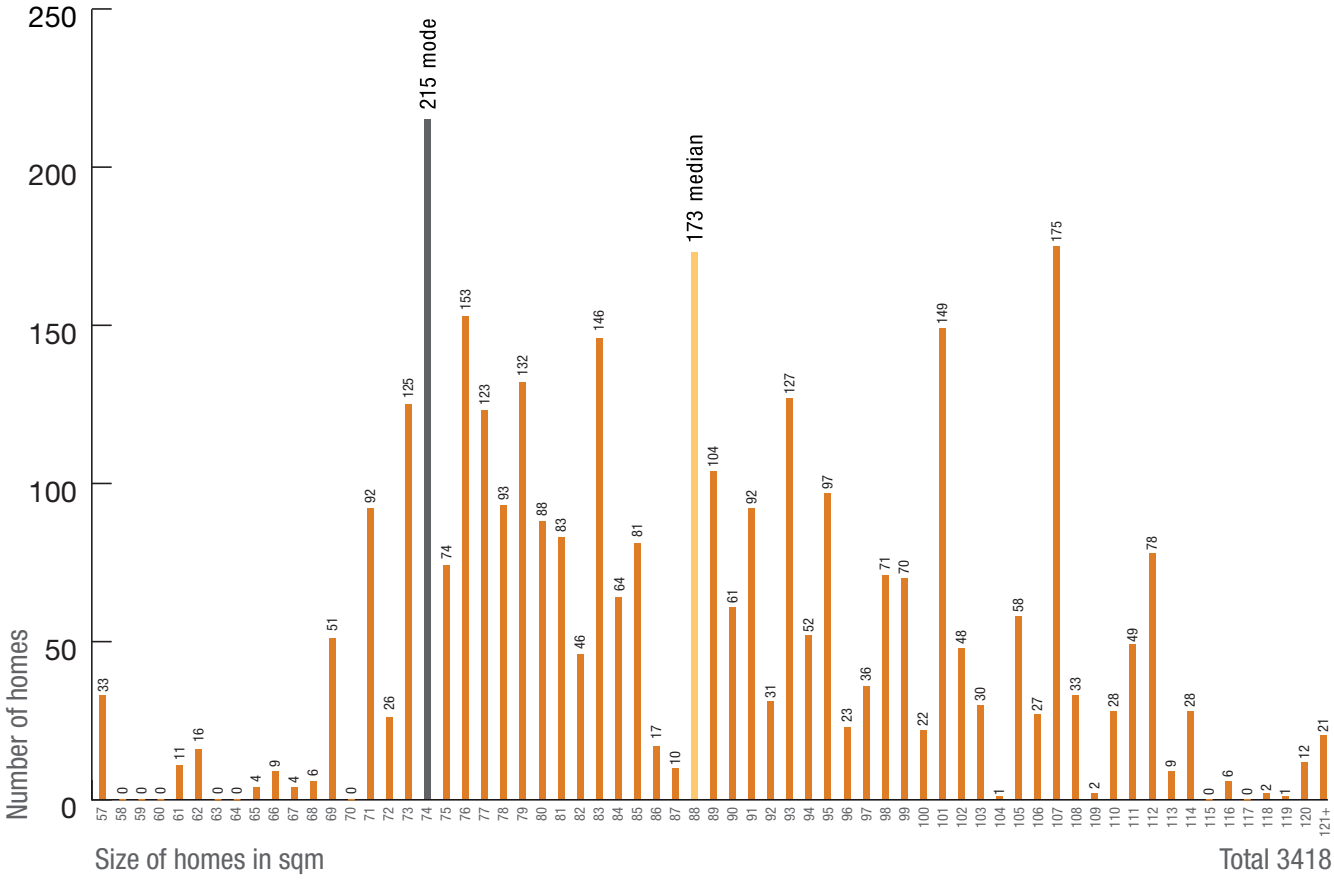


Three bedroom homes

Housebuilder	Average size of 3 bedroom house	Number of sites in sample	Number of homes in sample
Berkeley	98 sqm	9	217
Galliford Try	90 sqm	9	352
Barratt	89 sqm	9	420
Taylor Wimpey	88 sqm	8	412
Persimmon	88 sqm	10	799
Bellway	86 sqm	8	635
Lovell Partnerships	85 sqm	9	263
Crest Nicholson	84 sqm	9	320

Our sample assessed a total of 3,418 individual homes on 71 sites across England.

- The mean size of all three bedroom homes we analysed was 88 sqm
- The mean size of three bedroom homes from the averages achieved by each housebuilder was 88.5 sqm.
- The median size (middle of the sample) was 88 sqm
- The mode (most common size) was 74 sqm

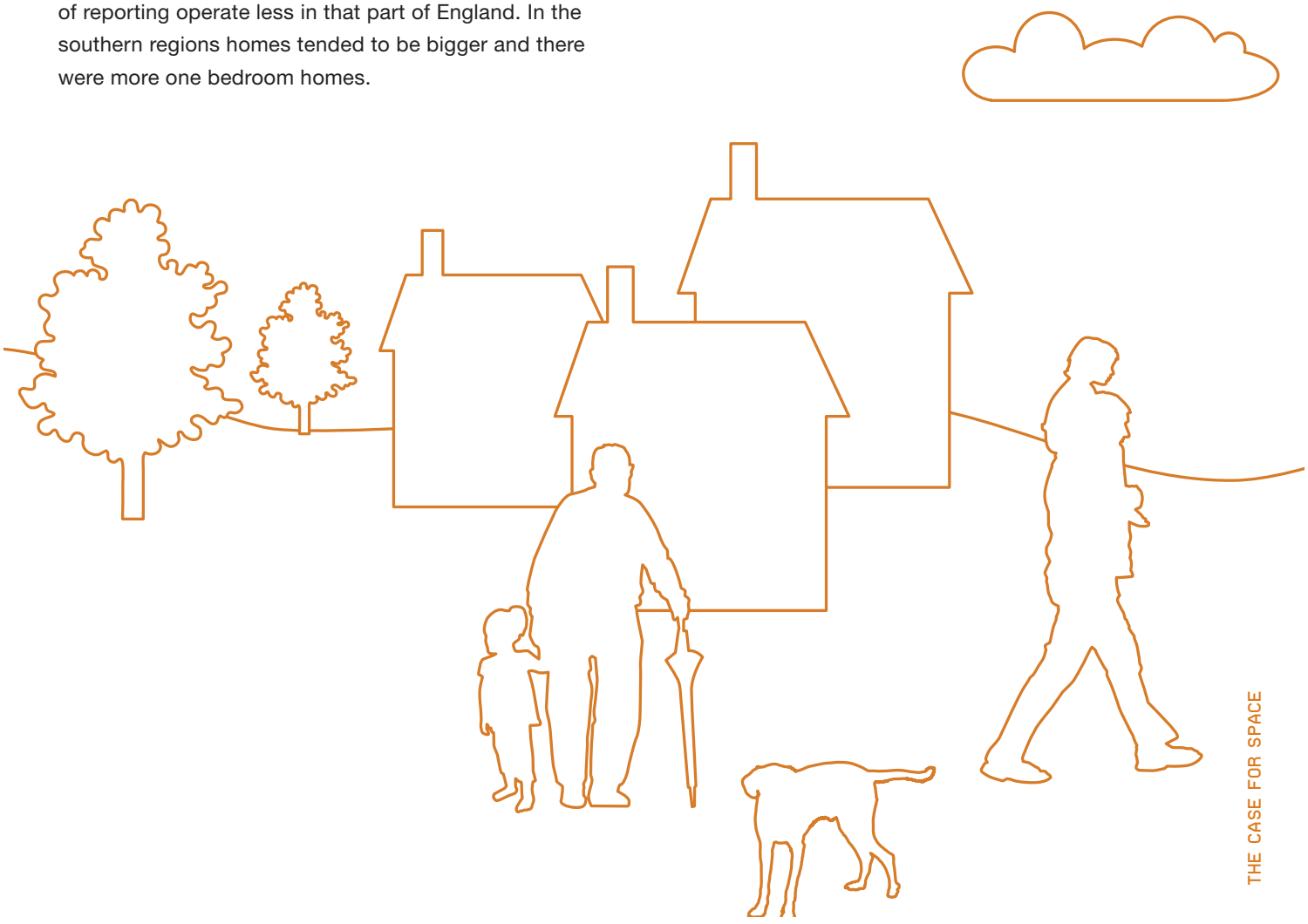


Regional data

Averages calculated are mean and by site (not by unit, which is how the other averages are calculated)

Region	Total number of sites	Number of house-builders	Number of sites with 1 bedroom homes	Average 1 bedroom home in sqm	Number of sites with 3 bedroom homes	Average 3 bedroom home in sqm
East of England	8	8	4	55	7	88
East Midlands	7	7	4	47	7	87
London	11	7	11	48	6	119
North East	2	2	1	35	2	89
North West	11	5	2	51	11	84
South East	14	7	7	48	13	96
South West	12	8	5	46	11	87
West Midlands	7	7	6	44	6	94
Yorkshire and the Humber	8	6	1	37	8	83

We found fewer sites in some of the northern regions, as the major housebuilders we assessed at the time of reporting operate less in that part of England. In the southern regions homes tended to be bigger and there were more one bedroom homes.



What could you do with the space?

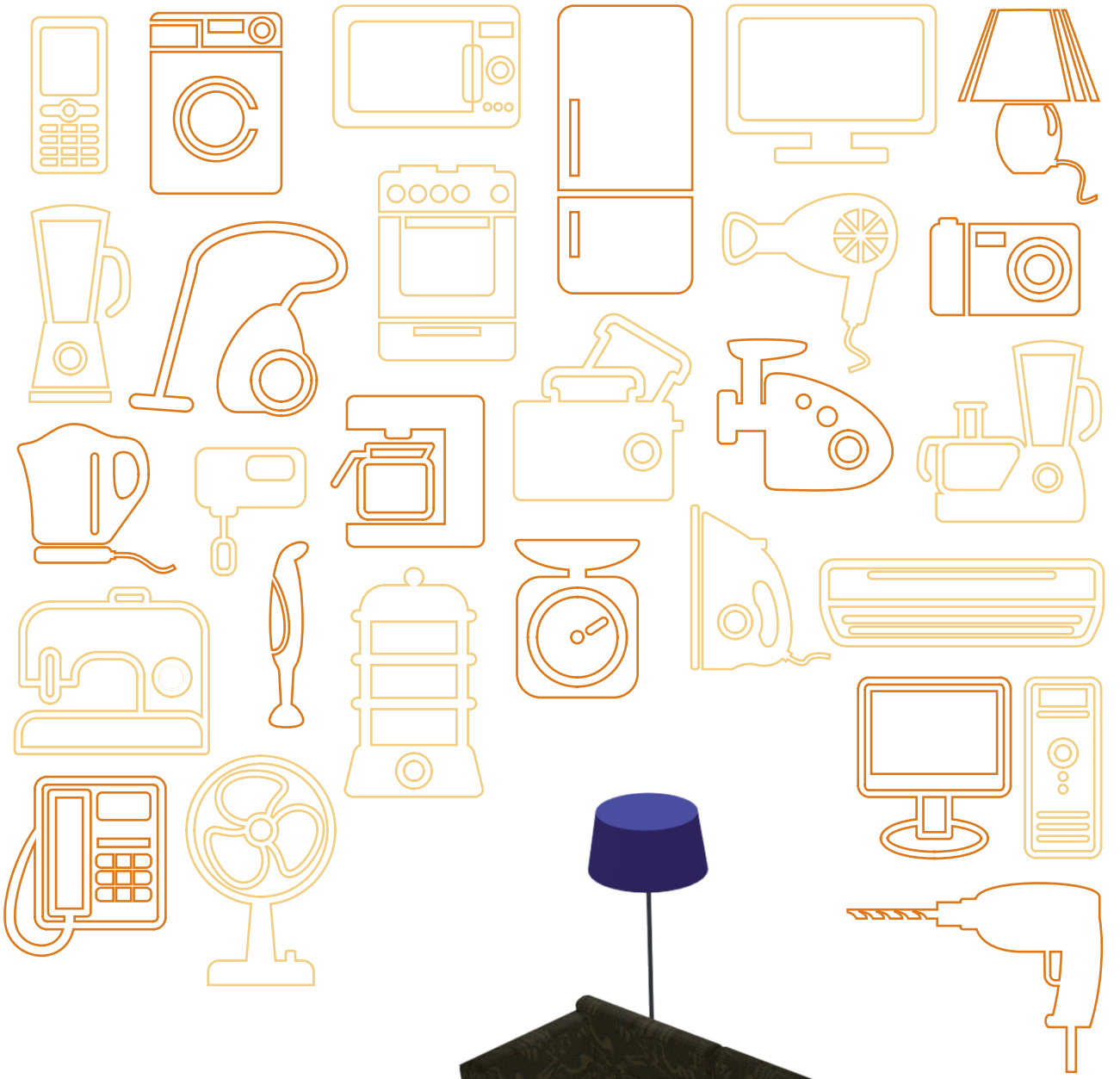
Most of us don't think in square metres or square feet. It can be difficult to know how much space we need or how to translate the floor plan in a brochure. It's sometimes easier to visualise space in terms of the things around us – the sofa we sit on every day, the coffee table we inherited or the bed we sleep in.

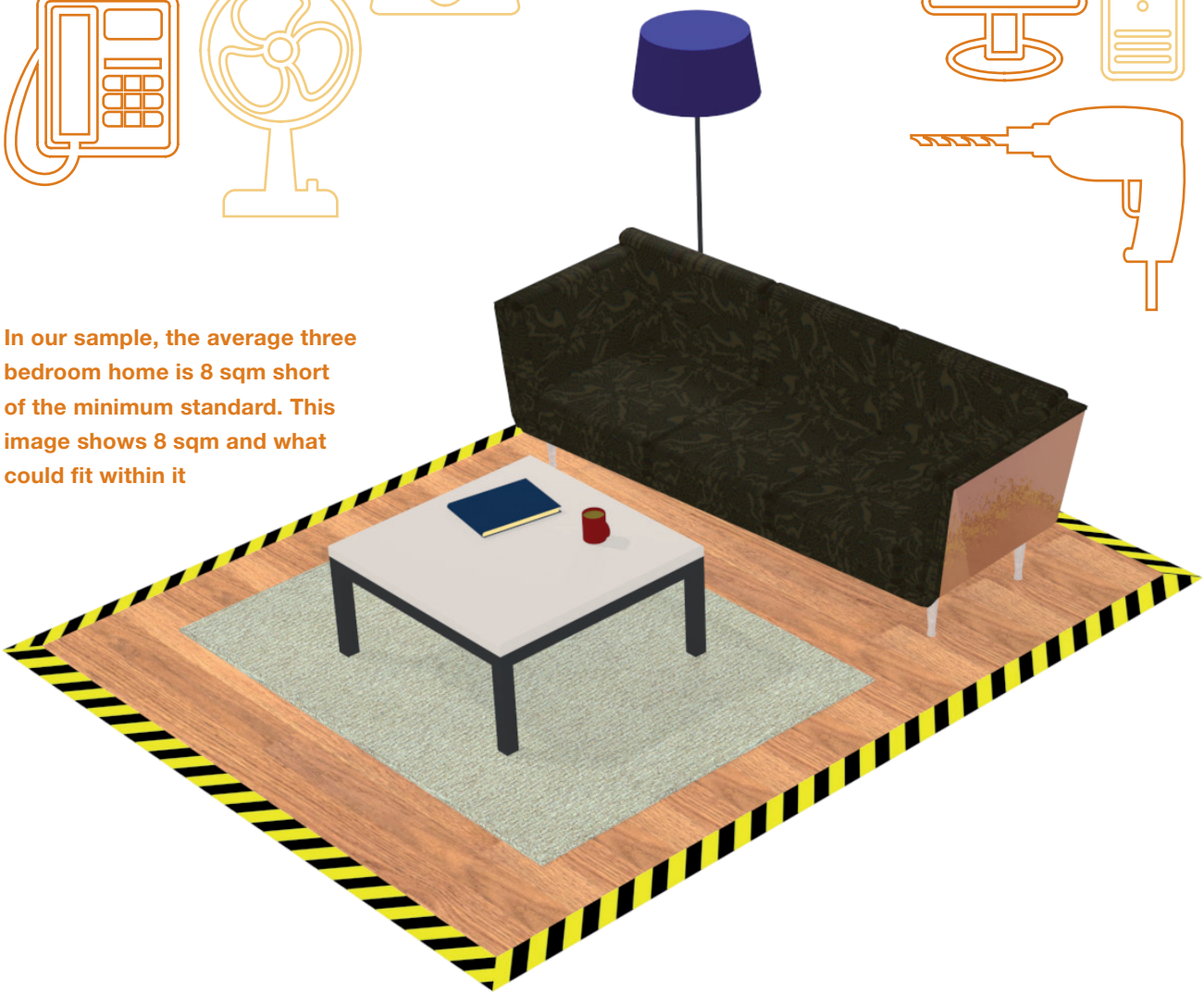
In order to help interpret the findings of our research, we've used equivalent measures to gain a better understanding of what the missing space in English homes might mean in real-world terms for the average household.

Space in sqm	Equivalent furniture or room [46]
0.5	**Coffee table** A coffee table is about 0.5 sqm
1	**Writing Desk or Dressing Table** Space for a desk and chair for 1 person: 1.3 sqm Space for a dressing table and stool: 1.3 sqm
2	**Three seat sofa** Space for a 3 seat sofa and room in front for feet: 2.1 sqm
3	**Single Bed** Space for a single bed and a bedside table: 2.9 sqm
5	**Double Bed** Space for a double bed and two bedside tables: 4.8 sqm
6	**Kitchen** A galley kitchen adequate for a household with up to 3 people: 5.5 sqm
8	**Single bedroom** A main bedroom adequate for one person: 8 sqm
9	**Dining kitchen for 2 people or a dining table for 4 people** A dining kitchen adequate for a 2 person household: 9 sqm Space for a dining table, seats and circulation space for 4 people: [47] 8.4 sqm
11	**Double bedroom or a dining table for 6 people** A main bedroom adequate for two people: 11 sqm Space for a dining table, seats and circulation space for 6 people: 10.23 sqm
14	**Living room** A living room with a dining area for a 2 person household: 14 sqm

46 Room sizes are taken from the minimum room sizes from pages8-3 of the third edition of the ***Metric Handbook***, 2008. Furniture sizes (which includes circulation for adequate use of furniture) is taken from page 121 onwards of Drury A, ***Standards and quality in development: A good practice guide (2nd edition)*** (National Housing Federation, July 2008)

47 Derived by the RIBA from p135 and p140 of ***Standards and Quality in Development***





In our sample, the average three bedroom home is 8 sqm short of the minimum standard. This image shows 8 sqm and what could fit within it

How do the housebuilders compare?

One bedroom homes

The highest average area for a one bedroom home achieved by a housebuilder in our sample: **49sqm**

The lowest average area for a one bedroom home achieved by a housebuilder in our sample: **43 sqm**

The average one bedroom home from our sample is 46 sqm and the most common size of a one bedroom home was 45 sqm, which is smaller still. There is a difference of 6 sqm between the highest and lowest averages achieved by housebuilders in our sample.

6 sqm is just a number. But in lifestyle terms it means…

- a double bed with two bedside tables, and a dressing table and stool
- or a single bed and bedside table, a three seat sofa, a writing desk and a chair, and a coffee table
- or even a galley kitchen.

6 sqm could be the space that takes the kitchen out of the lounge and the noise and smells that go with it. It means you can work at home at the computer in the day and also have an extra sofa when you've got friends round in the evening. 6 sqm might not sound like much, but it could make everyday life a lot more comfortable.

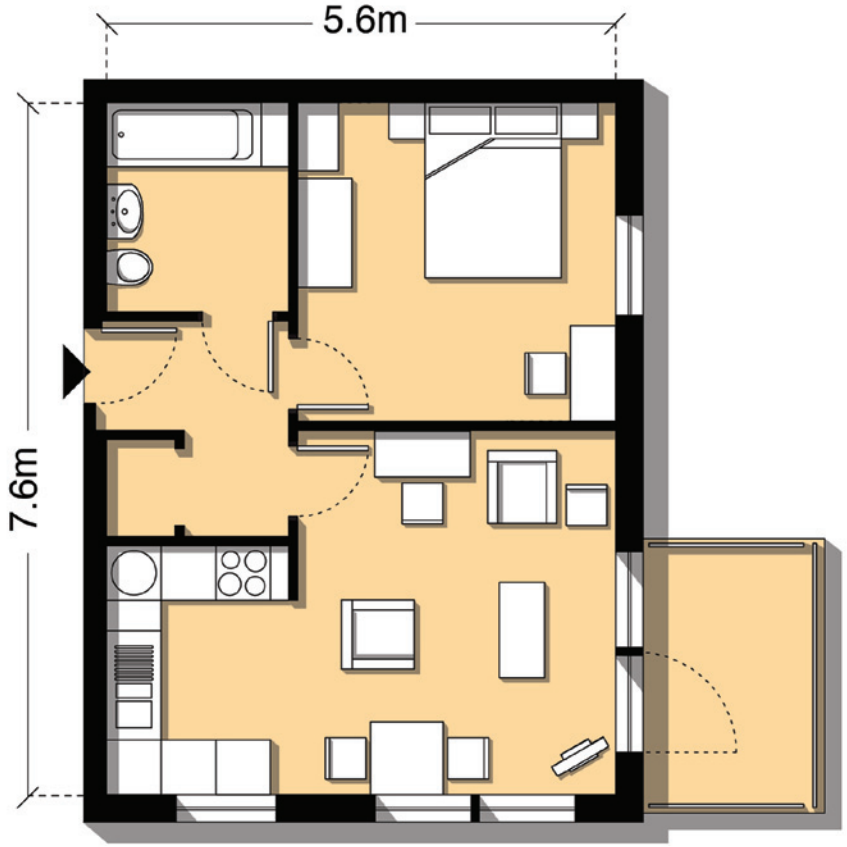
What's the difference in a one bedroom home?

What you could do with the space in your home also depends on the layout of its design. The floor plans on the next page were designed by an architect, and show what the difference in space means to those who live there.

The 6 sqm difference between the highest and lowest averages achieved by the housebuilders in our sample of one bedroom homes, is shown opposite on plans that are identical in their design except for the floor area. This 6 sqm affects the size of

- the kitchen: a cupboard must be removed **and**
- the living room: again, a storage cupboard is removed **and**
- the hallway: removing circulation space which could affect how easily people enter the property – for example, the smaller home could not be adequately accessed by a wheelchair user

43 sqm 1 bedroom flat



49 sqm 1 bedroom flat

Green zones identify the space missing from the smaller flat

additional circulation space in the hallway

a storage cupboard in the living room

an extra cupboard in the kitchen

Three bedroom homes

The highest average area for a three bedroom home achieved by a housebuilder in our sample: **98 sqm**

The lowest average area for a three bedroom home achieved by a housebuilder in our sample: **84 sqm**

14 sqm is just a number. But in lifestyle terms it means…

- a living room with a dining area
- or a double bedroom with all its contents, and in addition a single bed and bedside table
- or a dining table for 6 people, a three seat sofa and a writing desk

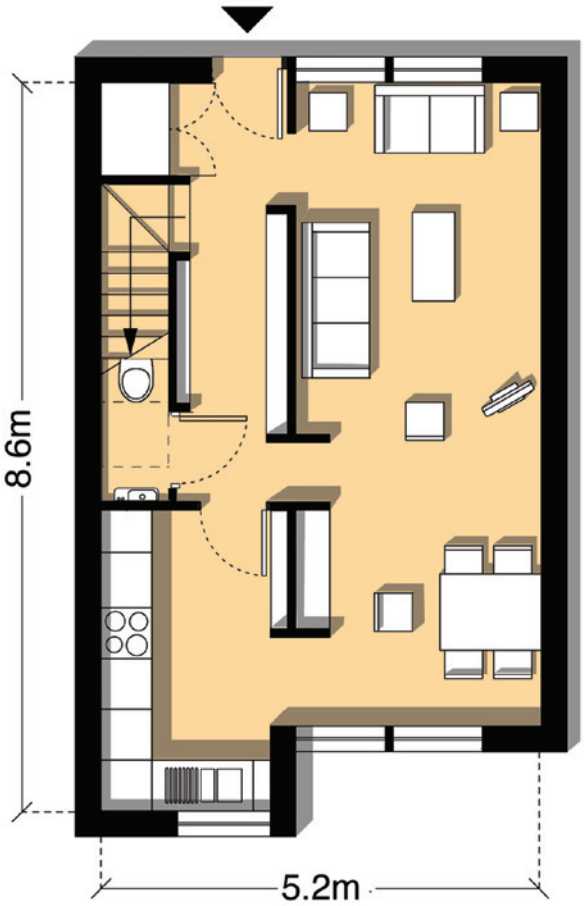
14 sqm could be an entire room that you're missing. It could be the space you need when you've invited friends or family round for Sunday lunch. It's space to relax and watch a film all together and a desk to work from home when the kids are on school holidays or for them to chat online to their friends. It's the space that allows your family to grow - when they get tired of the bunk bed or are old enough for a double.

What's the difference in a three bedroom home?

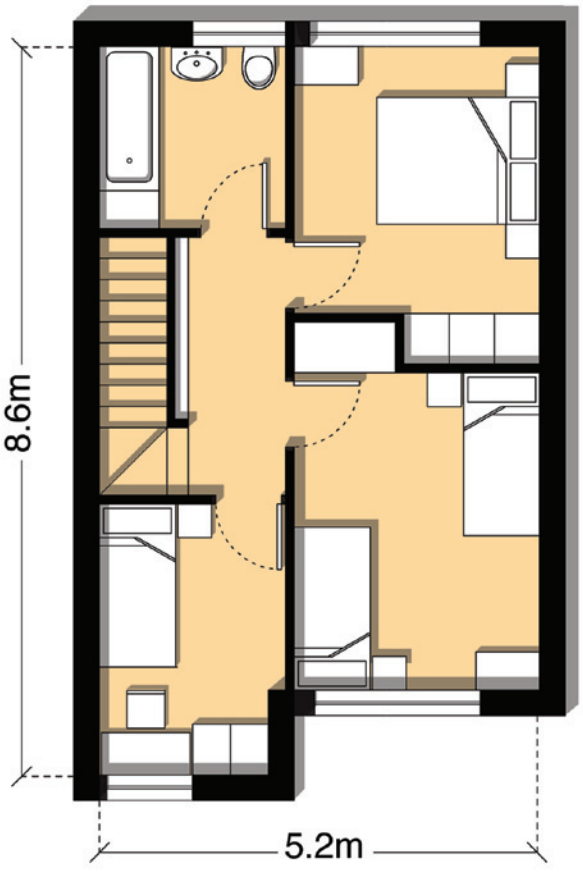
The 14 sqm difference between the highest and lowest averages achieved by the housebuilders in our sample of three bedroom homes, is shown opposite on plans that are identical in their design except for the floor area. This 14 sqm affects the size of:

- the kitchen: 3 cupboards are removed **and**
- the living room: a desk for study or work must be removed **and**
- the master bedroom: another desk is removed, and there is less circulation space. This space is equivalent to the area needed for a wheelchair user, but would also be used in other ways by a household **and**
- the twin bedroom: another study area is removed.

84 sqm 3 bedroom house

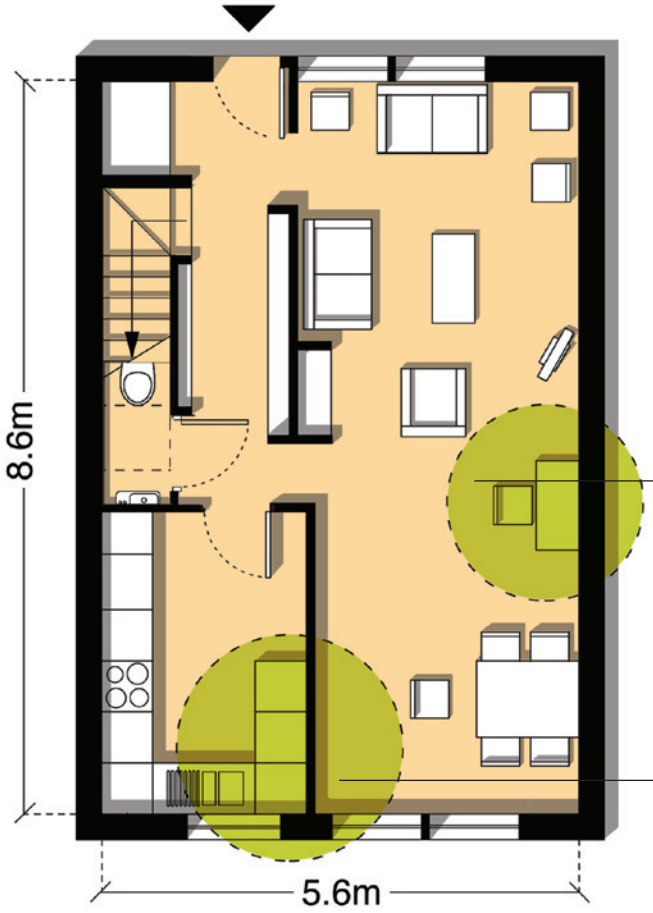


Ground Floor



First Floor

98 sqm 3 bedroom house

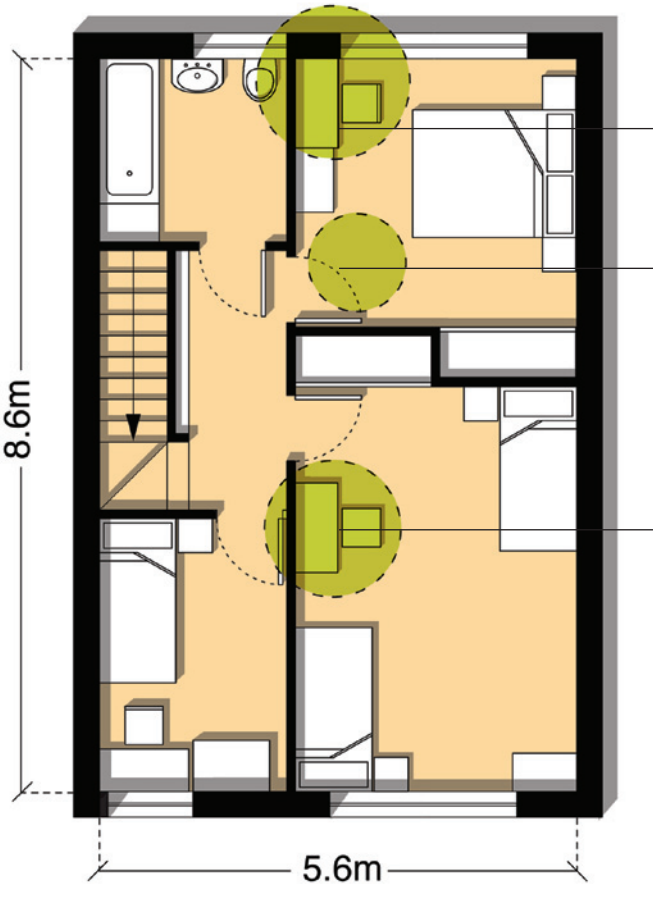


Ground Floor

Green zones identify the space missing from the smaller house

a desk in the living room

three more cupboards in the kitchen



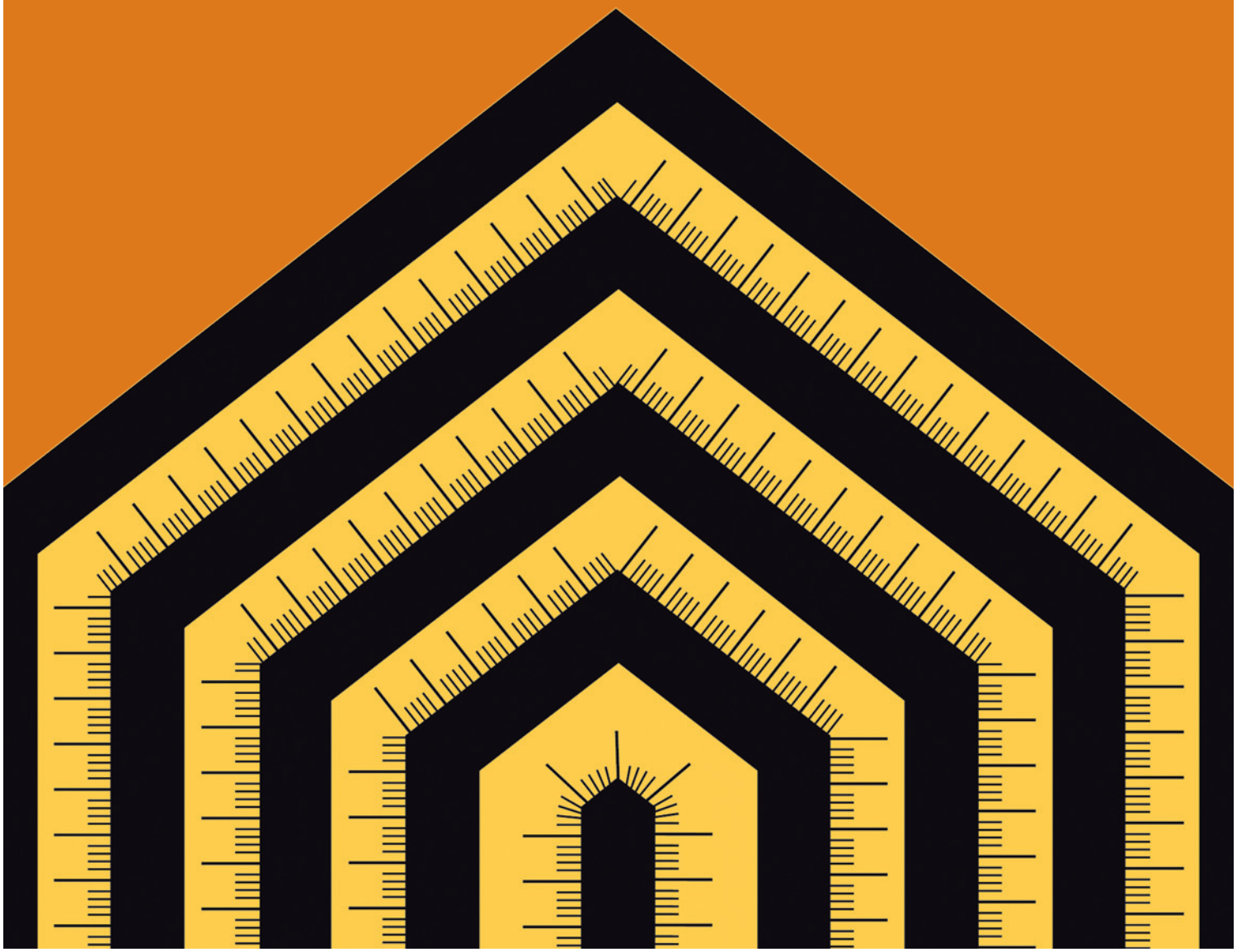
First Floor

a desk plus more circulation space in the master bedroom

a further study area in the twin bedroom

CONCLUSIONS AND RECOMMENDATIONS

When thinking about the design and build of new homes now we need to think about whether they will meet the needs and lifestyles of the future. Perhaps people need more room in their homes now – to play interactive computer games safely, or so that everyone can find a quiet and peaceful place to rest. Or perhaps there is a valid reason why the homes getting built today fall short of existing space standards – perhaps people no longer feel the need for bedside tables or chairs in their bedrooms, or to eat as a household at a dining table. To provide a genuine choice for people thinking about buying or renting a home, new homes need to reflect the needs and concerns of contemporary society.



But even before we start to think carefully about how people live today and whether new homes are addressing the needs of modern and future households, there is something much simpler that can be done. More information should be made available to consumers so that they can make a better assessment of what they are looking for. At present homes do not have to be marketed with the full internal floor area, and even when the floor area is given, this is rarely translated into what the space will be used for and what the numbers really mean. Do people know the average size of a sofa, or the average size a lounge needs to be for a television, seating at an adequate distance from the television, a coffee table or dining table, not to mention the other furniture and objects that they might want?

Improving the quality of new homes will be a joint venture for housebuilders, architects, planners and policy makers amongst others. Here are some initial suggestions stemming from our research.

What can the housebuilding industry do?

- **Improve marketing information:** Estate agents and housing providers should display clearly the floor area of homes on all promotional material. They should also show floor plans with furniture and other items illustrated, so that consumers can better understand what space means to them and their lifestyles
- **Publish data about the size and quality of new homes:** To ensure greater transparency in the market place, developers should publish this relevant information relating to the quality of new homes.
- **Join the Future Homes Commission's conversation:** The Future Homes Commission has been set up by the RIBA to find out what consumers want and need, and make recommendations to architects, housing developers and other organisations to help the industry deliver the best homes possible.

What can policy makers do?

- **Make Energy Performance Certificates mandatory at point of market rather than after contracts have been signed:** Energy Performance Certificates need to be available and explained for every home being marketed – not simply requested and provided only after contracts have been signed and people are about to move in.
- **Work with the house building industry to produce an industry-wide voluntary agreement that housebuilders publish data about the size and quality of new homes.** The Department for Communities and Local Government and the Homes and Communities Agency could facilitate this work to ensure data is published on a regular basis, in a way that is both transparent and does not add an unnecessary regulatory burden upon businesses.

What can consumers do?

- **Be HomeWise:** Use the RIBA's homebuyer and renter guide to help ask the right questions when choosing a home, available at **www.behomewise.co.uk**
- **Take the Nest Test:** Find out what the floor area of your home should be according to the London standards, then tell the Commission whether you agree, and what else you think is important at **www.behomewise.co.uk/NestTest**

APPENDICES

APPENDIX 1: FULL RESULTS

Housebuilder	**Barratt**
Regions covered	South East South West London East of England East Midlands West Midlands North West Yorkshire and the Humber
Number of one bedroom flats (and maisonettes where necessary)	**158 homes on 8 sites**
Mean average size of one bedroom homes	**45 sqm**
• Number of one bedroom flats and maisonettes designed for 2 people • Average size of one bedroom 2 person • Comparison against standard (50 sqm)	• 80 • 44 sqm • 88%
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 78 • 46 sqm • 92%
Number of three bedroom houses (and flats where necessary)	**420 homes on 9 sites**
Mean average size of three bedroom homes	**89 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 15 • 62 sqm • 71%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 141 • 88 sqm • 92%
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 48 • 110 sqm • 108%
• Number of three bedroom 3 storey homes designed for 6 people • Average size of three bedroom, 3 storey, 6 person homes • Comparison against standard (112 sqm)	• 50 • 107 sqm • 96%
• Number of three bedroom homes without person spaces and storeys listed • Average size of three bedroom home without person spaces and storeys listed • Comparison against standard (2 storey, 5 person assumed at 96sqm)	• 166 • 81 sqm • 84%

Housebuilder	**Taylor Wimpey**
Regions covered	South East South West London East of England East Midlands West Midlands North West Yorkshire and the Humber
Number of one bedroom flats (and maisonettes where necessary)	**93 homes on 5 sites**
Mean average size of one bedroom homes	**47 sqm**
• Number of one bedroom flats and maisonettes designed for 2 people • Average size of one bedroom 2 person • Comparison against standard (50 sqm)	• 16 • 41 sqm • 82%
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 77 • 48 sqm • 96%
Number of three bedroom houses (and flats where necessary)	**412 homes on 8 sites**
Mean average size of three bedroom homes	**88 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 8 • 89 sqm • 102%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 124 • 76 sqm • 79%
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 66 • 103 sqm • 101%
• Number of three bedroom 3 storey homes designed for 6 people • Average size of three bedroom, 3 storey, 6 person homes • Comparison against standard (112 sqm)	None, but 12 homes were 3 storey and designed for 4 people, which were 98 sqm. There is not a recommended minimum for this type of home, but it exceeds the minimum for 3 storeys designed for 5 people.
• Number of three bedroom homes without person spaces and storeys listed • Average size of three bedroom home without person spaces and storeys listed • Comparison against standard (2 storey, 5 person assumed at 96 sqm)	• 202 • 91 sqm • 95%

Housebuilder	**Persimmon**
Regions covered	South East South West East of England East Midlands West Midlands North West North East Yorkshire and the Humber
Number of one bedroom flats (and maisonettes where necessary)	**43 homes on 6 sites**
Mean average size of one bedroom homes	**49 sqm**
• Number of one bedroom flats and maisonettes designed for 2 people	• Number of persons not specified on any plans
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 43 • 49 sqm • 99%
Number of three bedroom houses (and flats where necessary)	**799 homes on 10 sites**
Mean average size of three bedroom homes	**88 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 7 • 89 sqm • 102%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 145 • 89 sqm • 93%
• Number of three bedroom 2 storey homes designed for 6 people • Average size of three bedroom, 2 storey, 6 person homes • Comparison against standard (106 sqm)	• 2 • 112 sqm • 106%
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 24 • 88 sqm • 86%
• Number of three bedroom 3 storey homes designed for 6 people • Average size of three bedroom, 3 storey, 6 person homes • Comparison against standard (112 sqm)	• 33 • 118 sqm • 105%
• Number of three bedroom homes without person spaces and storeys listed • Average size of three bedroom home without person spaces and storeys listed • Comparison against standard (2 storey, 5 person assumed at 96sqm)	• 588 • 86 sqm • 90%

Housebuilder	**Bellway**
Regions covered	South East South West London East of England East Midlands West Midlands North West North East Yorkshire and the Humber
Number of one bedroom flats (and maisonettes where necessary)	**151 homes on 4 sites**
Mean average size of one bedroom homes	**47 sqm**
• Number of one bedroom flats and maisonettes designed for 2 people • Average size of one bedroom 2 person • Comparison against standard (50 sqm)	• 43 • 46 sqm • 92%
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 108 • 47 sqm • 94%
Number of three bedroom houses (and flats where necessary)	**635 homes on 8 sites**
Mean average size of three bedroom homes	**86 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 33 • 74 sqm • 85%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 174 • 85 sqm • 89%
• Number of three bedroom 2 storey homes designed for 6 people • Average size of three bedroom, 2 storey, 6 person homes • Comparison against standard (106 sqm)	• 3 • 88 sqm • 83%
• Number of three bedroom 3 storey homes designed for 4 people • Average size of three bedroom, 3 storey, 4 person homes • No standard to compare against	• 12 • 111 sqm
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 37 • 90 sqm • 88%
• Number of three bedroom 3 storey homes designed for 6 people • Average size of three bedroom, 3 storey, 6 person homes • Comparison against standard (112 sqm)	• 16 • 92 sqm • 82%

Housebuilder	Bellway
• Number of three bedroom homes without person spaces and storeys listed	• 360
• Average size of three bedroom home without person spaces and storeys listed	• 86 sqm
• Comparison against standard (2 storey, 5 person assumed at 96 sqm)	• 90%

Housebuilder	Berkeley
Regions covered	South East South West London East of England West Midlands
Number of one bedroom flats (and maisonettes where necessary)	**334 homes on 8 sites**
Mean average size of one bedroom homes	**47 sqm**
• Number of one bedroom flats and maisonettes designed for 2 people	• 34
• Average size of one bedroom 2 person	• 45 sqm
• Comparison against standard (50 sqm)	• 90%
• Number of one bedroom flats and maisonettes with no person spaces listed	• 300
• Average size of one bedroom home with no person spaces recorded	• 47 sqm
• Comparison against standard (2 person assumed – 50 sqm)	• 94%
Number of three bedroom houses (and flats where necessary)	**217 homes on 9 sites**
Mean average size of three bedroom homes	**98 sqm**
• Number of three bedroom 1 storey homes designed for 6 people	• 61
• Average size of three bedroom, 1 storey, 6 person homes	• 101 sqm
• Comparison against standard (95 sqm)	• 106%
• Number of three bedroom homes without person spaces and storeys listed	• 156
• Average size of three bedroom home without person spaces and storeys listed	• 97 sqm
• Comparison against standard (2 storey, 5 person assumed at 96 sqm)	• 101%

Housebuilder	**Galliford Try**
Regions covered	South East South West London East of England East Midlands Yorkshire and the Humber
Number of one bedroom flats (and maisonettes where necessary)	**105 homes on 3 sites**
Mean average size of one bedroom homes	**46 sqm**
• Number of one bedroom flats and maisonettes designed for 2 people • Average size of one bedroom 2 person • Comparison against standard (50 sqm)	• 1 • 56 sqm • 112%
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 104 • 46 sqm • 92%
Number of three bedroom houses (and flats where necessary)	**352 homes on 9 sites**
Mean average size of three bedroom homes	**90 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 38 • 85 sqm • 98%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 20 • 95 sqm • 99%
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 4 • 101 sqm • 99%
• Number of three bedroom homes without person spaces and storeys listed • Average size of three bedroom home without person spaces and storeys listed • Comparison against standard (2 storey, 5 person assumed at 96 sqm)	• 290 • 90 sqm • 94%

Housebuilder	**Crest Nicholson**
Regions covered	South East South West London East of England East Midlands West Midlands
Number of one bedroom flats (and maisonettes where necessary)	**209 homes on 5 sites**
Mean average size of one bedroom homes	**47 sqm**
• Number of one bedroom flats and maisonettes designed for 1 person • Average size of one bedroom 2 person • Comparison against standard (studio at 37 sqm)	• 2 • 39 sqm • 105%
• Number of one bedroom flats and maisonettes designed for 2 people • Average size of one bedroom 2 person • Comparison against standard (50 sqm)	• 119 • 45 sqm • 90%
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 88 • 49 sqm • 98%
Number of three bedroom houses (and flats where necessary)	**320 homes on 9 sites**
Mean average size of three bedroom homes	**84 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 12 • 75 sqm • 86%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 143 • 81 sqm • 84%
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 14 • 102 sqm • 100%
• Number of three bedroom homes without person spaces and storeys listed • Average size of three bedroom home without person spaces and storeys listed • Comparison against standard (2 storey, 5 person assumed at 96 sqm)	• 151 • 86 sqm • 90%

Housebuilder	**Lovell Partnerships**
Regions covered	South West London East of England East Midlands West Midlands North West Yorkshire and the Humber
Number of one bedroom flats (and maisonettes where necessary)	**66 homes on 2 sites**
Mean average size of one bedroom homes	**43 sqm**
• Number of one bedroom flats and maisonettes designed for 1 person • Average size of one bedroom 2 person • Comparison against standard (studio at 37 sqm)	• 12 • 41 sqm • 82%
• Number of one bedroom flats and maisonettes with no person spaces listed • Average size of one bedroom home with no person spaces recorded • Comparison against standard (2 person assumed – 50 sqm)	• 54 • 43 sqm • 86%
Number of three bedroom houses (and flats where necessary)	**263 homes on 9 sites**
Mean average size of three bedroom homes	**85 sqm**
• Number of three bedroom 2 storey homes designed for 4 people • Average size of three bedroom, 2 storey, 4 person homes • Comparison against standard (87 sqm)	• 34 • 79 sqm • 80%
• Number of three bedroom 2 storey homes designed for 5 people • Average size of three bedroom, 2 storey, 5 person homes • Comparison against standard (96 sqm)	• 53 • 86 sqm • 90%
• Number of three bedroom 3 storey homes designed for 5 people • Average size of three bedroom, 3 storey, 5 person homes • Comparison against standard (102 sqm)	• 25 • 105 sqm • 103%
• Number of three bedroom homes without person spaces and storeys listed • Average size of three bedroom home without person spaces and storeys listed • Comparison against standard (2 storey, 5 person assumed at 96 sqm)	• 151 • 83 sqm • 86%

APPENDIX 2: METHODOLOGY

The average floor area of new homes is very difficult to discover. The Department for Communities and Local Government's housing statistics team does not analyse this data. Local Authorities are not obliged to log floor sizes of homes when assessing planning applications; some choose to do so but there is no definitive list of which local authorities these are. The floor area is listed on Energy Performance Certificates (EPCs) which is used to predict the energy use and bills of the property. EPCs are logged by a central source, but trends are not analysed and the individual certificates are data protected because they include sensitive personal information such as the address of the home. Marketing brochures do not always supply the floor area. Sometimes the floor area of each individual room is provided and, as required by the Property Misdescriptions Act, this will have to be accurate. But often the corridors, circulation space and cupboards are not included, nor the overall internal floor area against which standards are measured.

The information remains incomplete. We consulted planners, architects and housing developers, and developed a methodology that recorded floor sizes from local authority planning papers published online. These documents will have been submitted to the local authority for planning approval, and are therefore the most detailed source of information about housing developments. Documents submitted for planning permission proved the only documents to state the floor areas of homes or – where this was lacking – provide enough information for researchers with architectural training to use other given measurements and scales to ascertain the floor area.

Our data is based on a sample of sites by each housebuilder and we used the same method to select each sample. This method is not failsafe: the full range of variables is recorded in the table below, along with information about how we tried to account for them in developing our methodology. This research was undertaken during a historically low period of housebuilding which made it difficult to ensure the sites used in our sample are directly comparable.

This is because different housebuilders have employed different strategies to be able to keep building homes; they don't all build the same densities in the same types of location. There is the added complexity that different housebuilders use different business strategies and different marketing mixes; some prioritise three bedroom homes and others might build one and thee bedroom homes in a similar ratio. Full details of how we dealt with all the variables are in the table below. The only way we will ever be able to fully measure the size of new homes is if local authorities record what is approved for planning and publicise the data, or if housebuilders record what they plan to build, monitor it against what they build and publish this data.

Rather than research a small sample in detail (like Scott Wilsons's 2010 research for CABE which looked at 200 dwellings[48]) we researched the gross internal floor area of a larger sample of homes. We focus on one bedroom flats and three bedroom houses, to provide a snapshot of two different but popular typologies. We calculated our average based on individual homes rather than typologies; for example if a site had 3 one bedroom flats with one typology and floor area and 7 one bedroom flats with a different typology and floor area, we counted all 10 homes to produce an average. This is the most appropriate way to understand what is being built – it would skew our data if a small number of luxury sized homes was given an equal representation with a large number of tiny homes. The disadvantage of planning stage information is that we cannot account for the different prices homes are marketed at. Larger homes could be marketed as luxury homes and priced higher. However, it is reasonable to assume that all housebuilders offer a range of sizes and typologies at different prices; so our averages account for every home in the sample, including aspirational and basic types and the number of each. The table of variables below further explains how we have dealt with this variable.

This report does not address viability. When housebuilders assess how many homes they can build on a site, and the size of the homes, they will take into

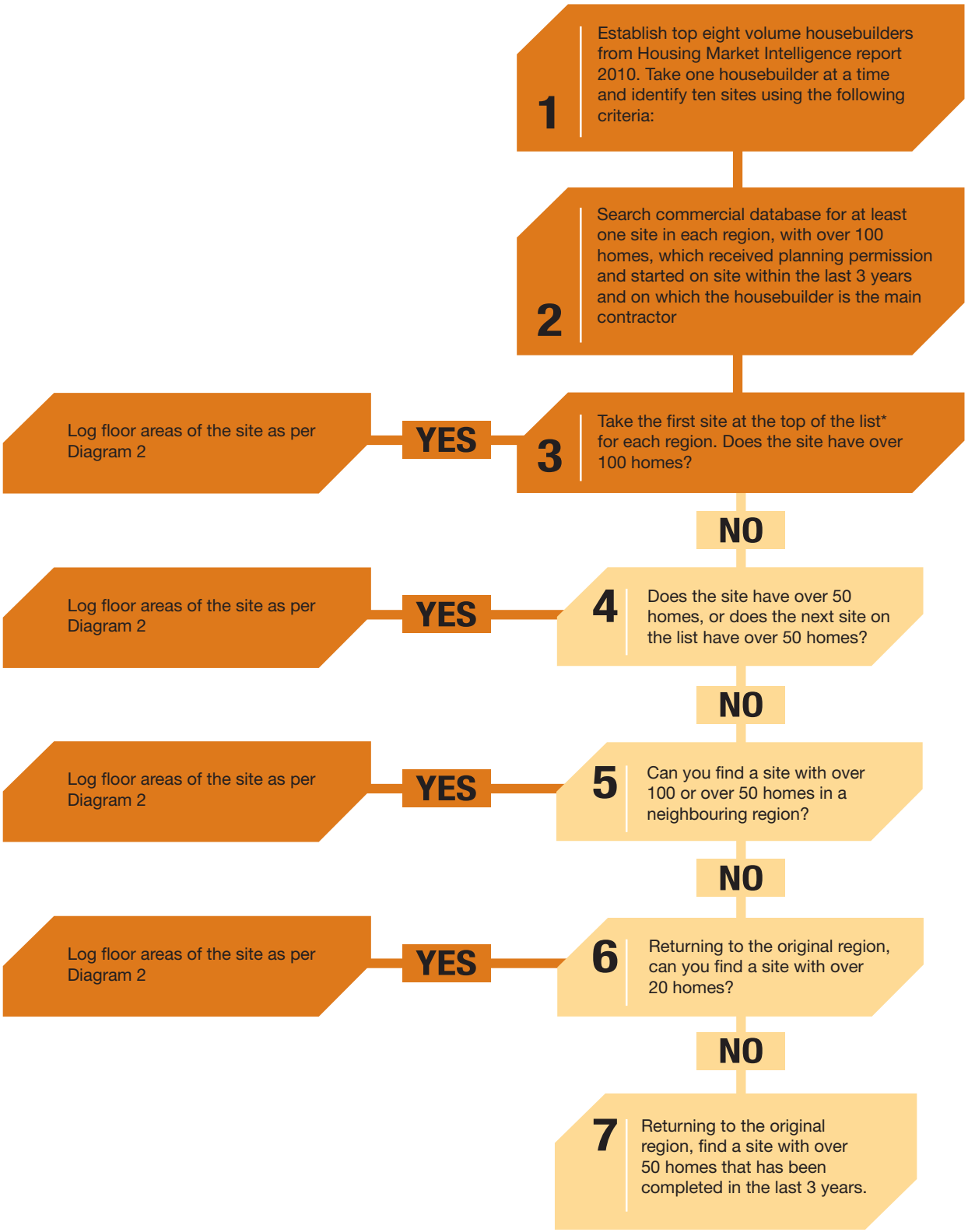
48 ***Dwelling Size Survey***

account how much they need to invest in the land, construction, design and material costs compared to the return they will make when they sell (or occasionally rent) the completed homes. However, without a national and sector-wide viability model, and so many different variables, it was not possible for us to measure the effect of viability upon the sizes of homes built.

Our work is based on a sample of randomly selected sites. We used a commercial database to search for sites that had started construction within the last three years up to March 2011. We used the same criteria to select sites by every housebuilder. However, with so many variables influencing the size of homes that housebuilders choose to build and information about the floor areas of homes so hard to come by, we can only attempt rather than guarantee fairness. Our table of variables below shows the wide variety of factors that affect the size of homes, and what we did to try to account for each of them to make our sample and our methodology as robust as possible. We measured gross internal floor area defined by the Royal Institution of Chartered Surveyors Code of Measuring Practice[49] as the internal area of the dwelling measured to the internal face of the perimeter walls but we did not include garages. This is the definition we're using, and where floor areas have been provided on plans we are making the assumption that since this is an accepted industry wide definition, it is the one likely to be used by the housebuilder who has submitted the plans.
More details about our methodology can be found in the table of variables on the following pages.

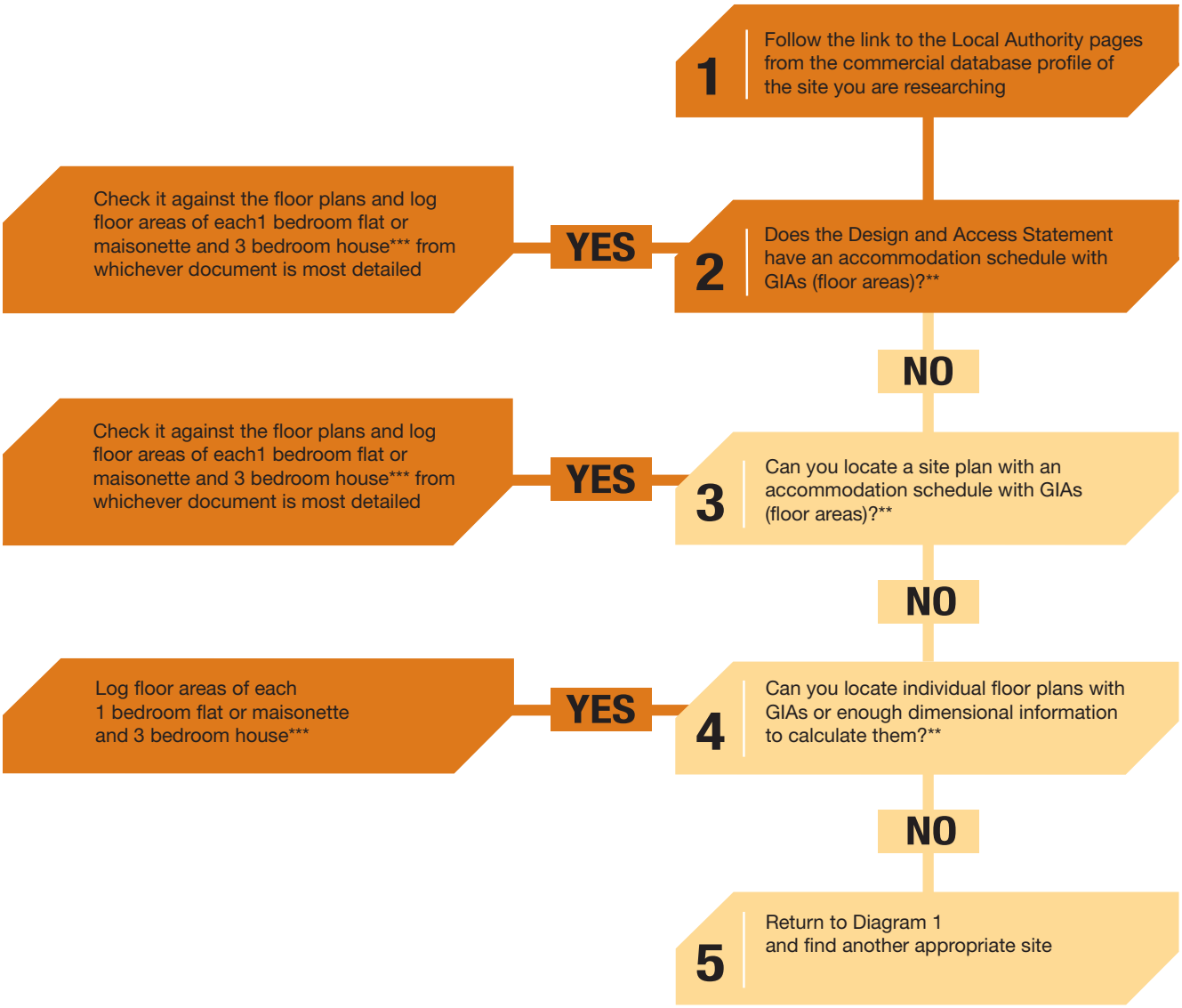
49 ***Code of Measuring Practice, 6th edition*** (RICS, 2007).

Diagram 1: selecting sites



*Our criteria for choosing sites was random, apart from the criteria listed above and in the table of variables accounted for on the following pages and which are intended to make the data fair. We simply used those sites that met the criteria listed above, had the data we needed online (many projects did not) and were the most recently updated projects recorded by our commercial database providers. If the first site at the top of the list did not meet all our criteria, we would move to the next site and so on, until we had exhausted all sites and all options from the flow diagram.

Diagram 2: recording floor areas



**In the first instance we analysed Design and Access statements to find the details of an accommodation schedule. We would compare the Design and Access statement to the floor plans available online, and log the internal floor area of each 1 bedroom flat or maisonette and each 3 bedroom house from whichever document (DAS or floor plan) had the most detailed information. Where the floor areas were not explicitly recorded on any documents, we analysed individual floor plans. Floor plans were less reliable than a published list of floor areas, because we would often have to use the scale on the plan to calculate the floor area. Not all the documents were to a strict scale, and often local authority planning offices would scan hardcopies to publish them online, which could also alter the scale. However, if the floor areas were not listed explicitly anywhere else amongst the planning documents published online, the floor plans would be used to provide a fair indication. If there were no dimensions at all on the floor plans, we would use doorways in conjunction with the scale to work out the measurements as best as possible; obviously this method was the least accurate, but if there were not enough sites with the required information by a housebuilder, it would be our last attempt to record the information we needed. We undertook quality checks on 10% of our data to make sure it was as accurate as possible.

***We saved all the documents we used to assemble the information, but we cannot publish them with the full report without requesting copyright.

Further, we should point out that although we always tried to locate the most up to date and most detailed documents, often the file names and presentation of documents on individual local authority websites made it difficult to identify the best documents to use.

Table of variables

Variable	Effect on data	Accounting for variable
Regional land price variations	Regional land price variations have an effect on the economic viability of a development, and affect what a developer can afford to build and the profits they might expect to make. Prices paid for land are not recorded on the planning documents available to the public, so could not directly be taken into account in our data collection.	We chose a fair spread of sites from across England and in different types of setting (market towns, cities) for every developer. We aimed to find one site in each English region by each housebuilder, to make the sample as comparable as possible for each housebuilder, and cancel out land price variations where possible. Not all housebuilders operate in every region, and we could not manage this variable.
London land price variations	London is an area with considerable land and house price variations.	Search criteria for this region was changed to sites with over 50 homes in the east London boroughs involved in development programmes for the London 2012 Olympics. For those without sites with 50 homes in one of these boroughs, we then widened our search to the rest of London. If a housebuilder did not operate in London, or we could not find any sites that matched our search criteria, we aimed to use a site in the South East region instead.
Density of site	The number of homes on a site and the overall area of a site might establish trends; the more homes on a site, the smaller they might be.	We primarily looked at developments with more than 100 privately funded homes on site. For those instances where there were not enough sites with 100 homes in a particular region or at all, we analysed sites with over 50 homes.
Affordable housing provision	The minimum space standards that apply to publicly funded housing development would affect how neutral and representational our data sample was.	Where possible the affordable homes were omitted from our calculations. However, since the affordable housing provision is often not recorded on planning applications, it was not always available to us on the local authority websites we gathered data from and therefore could not always be taken into account. This is a variable likely to affect a fair spread of housing developments, and our sample for each housebuilder is likely to remain comparable.

Variable	Effect on data	Accounting for variable
Public land disposals	Where the land developed was originally publicly owned, it is possible that the development could have been subject to space standards requested by the Local Authority. This would mean the homes built on that site could have larger internal floor areas.	Whether the land was publicly or privately owned was not available on the planning documents we collected data from and is not available in the public realm. In addition, developments in conjunction with Local Authorities have been omitted. This is a variable likely to affect a fair spread of housing developments, and that our sample for each housebuilder is likely to remain comparable
Selling price	Where housebuilders charge less for smaller 1 bedroom flats compared to larger 1 bedroom flats (for example), it could be argued that market conditions account fairly for the size of the home.	Selling prices were not taken into account because we looked at schemes on site rather than completed so this information was not available during the data collection for this report. However, variables between luxury and more affordable homes should be accounted for by the size of the sample.
Designed/marketed occupancy level	Designed occupancy levels and number of bedrooms are two different things that, between them, can create significant differences in floor areas. A home could be larger or smaller based on the number of people it is designed to house, and sometimes the marketing of a property could take this into account. For example, a 3 bedroom house could be marketed as a '3 bedroom, 4 person' home or as a '3 bedroom, 5 person' home. This could account for different floor areas.	Because the schemes were on site rather than completed, and because this information is not recorded on planning documents, we do not know how many occupants the homes were to be marketed for. Where occupancy levels are stated on the planning documents we analysed or where we could count bed spaces on plans, we recorded them. Where they are not – we could have assumed that any bedroom over 8sqm is twin or double, but we have not gone into that level of detail for this study. We have used the same bench marks when comparing all developers and all typologies: 1 bedroom flat or maisonette: 50 sqm for 2 people 3 bedroom house: 96 sqm for 5 people, over 2 storeys

Variable	Effect on data	Accounting for variable
Discrepancies between plans and what gets built	It is sometimes the case that developers do not strictly adhere to the planning proposal they submitted, and they might change the homes they are building – perhaps by changing the dimensions, or adding more homes onto the site. This will often not be picked up by planning enforcement teams unless a complaint is submitted.	There is no cost or time effective way of measuring homes that have been built compared to the plans drawn up for them and submitted officially. Planning application documents remain the most detailed and most correct information publicly available; we have to assume that housebuilders have built the homes they asked for planning approval for. Again, this is also a variable that will affect every site to the same extent, so should not skew our data. Using documents submitted for planning approval means we are using the intended specification, and the difference between this and what gets built will be a universal error.
Discrepancies between different planning application documents	Different documents submitted for planning will have different levels of accuracy. We used Design and Access Statements in the first instance; where floor areas were not available on these we tried to find another accommodation schedule, and failing that we looked at individual floor plans. These different documents submitted for planning will have different levels of accuracy	All the data we used was data the housebuilder has provided. There are also problems with to scale plans, as scale might change during scanning or may be recorded as not to scale in the first place. There is a lack of accurate data and we have had to use the numbers available on public planning documents. We employed the same method for each site, starting with the Design and Access statement, and so on. The flow diagrams demonstrate this process. We also tried, where available online, to use the most up-to-date documents listed as approved on the Local Authority website.
Not all approved schemes get built	Often approved schemes don't get built, so there is a risk that our data does not represent what each housebuilder actually builds.	We looked at schemes that had been Approved and started On Site within the last three years. If we could not find enough schemes On Site for a housebuilder, we would choose completed schemes instead.

APPENDIX 3: FURTHER READING

Most existing guidance is aimed at architects and developers, and sometimes other housing professionals, but there are also some guides explaining space directly to consumers.

The National Housing Federation published a second edition of Standards and quality in development: A good practice guide in 2008. The guide advises on the housing design process and provides best practice suggestions for each part of the home, both the internal environment, shared areas and the immediate public realm. The book describes itself as advising on "a general good practice process" for housing providers who may be looking to update their internal development procedures.[50] It includes a table of gross internal floor areas that are similar but not identical to those in the London Housing Design Guide[51]; both are also similar to the Core Standards the HCA proposed in April 2010 for consultation, which have now been removed. Detailed sections include furniture schedules and standards for individual rooms. The book offers a comprehensive and useful approach to space based on activities households are likely to need to carry out, the expected size of necessary furniture, and suggested sizes for circulation areas. It is based on anthropometric data; for example the space for a three seat sofa includes the size of the sofa and the room needed in front of the sofa for people to rest their feet.[52] The guide does not research or provide evidence about how people perform these activities, and it is written to inform the industry development process rather than to help consumers in the process of choosing a home.

There is also guidance relating specifically to accessibility, which can also include information about how much space is needed. The London Housing Design Guide includes separate furniture schedules for wheelchair accessible housing.[53] There are also Lifetime Homes standards, which are designed to offer advice and standards for space and layouts that are tailored to different levels and types of accessibility. Again, these guides are for the housing industry rather than consumers, but are useful in indicating what adequate space might be.

There have been efforts within the industry to make information more accessible to consumers. The swingacat website by Gentoo, Design for Homes and HATC is one example of this,[54] which includes graphs demonstrating what internal floor area different sized households should aim for, and information about how the layout of a home can affect its use. Another example of information made available to consumers is The Home Buyer's Guide: what to look and ask for when buying a new home. It includes sections on the design and layout of the home, outdoor space and general location. The section on space and layout includes simple illustrations demonstrating how members of a family might interact depending on the plan of the home, and questions home buyers might want to ask including "What is the total gross floor area of the property?"[55] The Parker Morris standards are explained, as is value for money in a table which demonstrates how to compare different homes using the purchase price, floor area, and energy and maintenance costs. This guide is accessible and provides detail about how housing design might impact upon the daily lives and costs of a household. Many of the key messages in the guide are still relevant. The RIBA would like to promote a transparent attitude to consumer information even further.

50 Drury A ***Standards and quality in development: A good practice guide (2nd edition)*** (National Housing Federation, July 2008). See p10.

51 See ***Standards and quality in development*** page 118. The standards are similar in some places (eg 1 bedroom, 1 storey home for 2 people) but vary in others (eg in ***Standards and quality in development*** there is no standard for a 4 bedroom, 1 storey home for 5 people, and the standard for a 4 bedroom, 1 storey home for 6 people is 1sqm different) and the standards in ***Standards and quality in development*** include 5 bedroom homes.

52 See ***Standards and quality in development*** pages 134.

53 See ***London Housing Design Guide Interim Edition*** pages 98-103

54 See ***www.swingacat.info***

55 Ely A, ***The Home Buyer's Guide: what to look and ask for when buying a new home*** (Black Dog publishing in association with CABE, 2004), page 57.

First published September 2011

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