



Campaign to Protect
Rural England
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BETTER BROWNFIELD

Ensuring Responsive Development on Previously Developed Land

Foresight Paper No.3

Campaign to Protect Rural England: Housing Foresight Series

The objective of the Campaign to Protect Rural England's Housing Foresight Series is to provide evidence-based research papers that support innovative policy solutions to critical housing issues.

The purpose of the series is not to set out the Campaign to Protect Rural England's official policy position on the future delivery of housing. Rather, it will explore a number of 'blue-sky' policy solutions with the aim of inciting and provoking wide ranging discussion over the future shape of housing policy.

With this in mind, we welcome comment on the policy solutions identified within the Housing Foresight Series.

Over two years, eight research papers will be released that examine different areas that are impacting upon the delivery of housing in England. We welcome any recommendations on subject matters for these papers. Please email lukeb@cpre.org.uk

Housing Foresight Series Papers So Far

1. **Increasing Diversity in the House Building Sector (Published: July 2014)**
2. **Removing Obstacles to Brownfield Development (Published: September 2014)**
3. **Better Brownfield: Ensuring Responsive Development on Previously Developed Land (Published: March 2015)**

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Executive Summary

- Over the past year, Government policy has been refocused on prioritising brownfield land for development. A number of major funding schemes and policy mechanisms have been announced that aim to increase residential development on brownfield land.
- Previous approaches to increase building on brownfield land have received criticism over the design quality of residential development. Many developments were perceived to lack a mix of housing that was responsive to the aspirations of users and the needs of communities. Reflecting on these criticisms and understanding their causes can promote brownfield development of higher quality and which takes greater account of the housing needs of communities.
- Currently, there is no obligation on local government to collect information on brownfield sites and this is hindering their re-development. Reforming data collection methods and mapping available brownfield sites can help prioritise the development of the most appropriate sites. A coherent and structured approach to assessing information can ensure that development sites are not considered in isolation. Data analysis based around the principles of a brownfield 'indexing scheme', such as those championed by the European Commission, can aid in improving the quality of new brownfield development.
- Unsophisticated measures of residential density, such as dwellings per hectare, are contributing to poor design on brownfield sites. A multi-variable measure of density can better describe areas where brownfield land is located and can help in prescribing the mix of development most suited to a particular site.
- Many brownfield sites are large scale and require a comprehensive approach to development. Lessons can be learnt from best practice in Europe. Drawing on the case study of Vauban in Freiburg, Germany, we can examine measures to improve participatory planning, increase custom- and self-build housing and enable development that discourages car use.
- This paper also considers the development of small-scale brownfield sites in England's urban areas. It studies the development model of Pocket, a developer specialising in developing small-scale, in-fill sites. Creating a register of small-scale brownfield sites owned by public bodies, requiring public bodies to enable development on these sites and employing a flexible approach to space standards, can ensure that these sites are built out to their full potential.

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Definitions

Definition of brownfield land

The terms 'previously developed land' and 'brownfield land' are often used interchangeably, even by people who should know better, including the Government, but they have subtly different meanings; the former having a particular technical definition in English planning policy and the latter being more colloquial. The issues surrounding the definition of brownfield land are discussed in CPRE's research paper 'Removing Obstacles to Brownfield Development.'¹

The National Planning Policy Framework defines previously developed land as "land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure. This excludes:

- Land that is or has been occupied by agricultural or forestry buildings;
- Land that has been developed for minerals extraction or waste disposal by landfill purposes where provision for restoration has been made through development control procedures
- Land in built-up areas such as private residential gardens, parks, recreation grounds and allotments
- Land that was previously-developed but where the remains of the permanent structure or fixed surface structure have blended into the landscape in the process of time"²

This is the definition of 'brownfield land' referred to in this paper.

¹ Campaign to Protect Rural England (2014) Removing Obstacles to Brownfield Development, CPRE

² Department of Communities and Local Government (2012) National Planning Policy Framework, London: HMSO

Definition of smart growth

The term 'smart growth' is increasingly used to describe urban development which minimises environmental impact. It has been described as a 'sustainable approach to planning that emphasises compact and accessible urban communities and which opposes urban sprawl and car dependency. It seeks traditional ways of planning towns based around local services, ease of walking and cycling and good public transport.'³

³ Reeds, J. (2015) Smart Growth UK: A National Coalition Perusing Sustainable Communities Planning and Transportation

1.0 Introduction

⁴ Sinnett, D. Carmichael, L. Williams, K. Miner, P. (2014) From Wasted Spaces to Living Places, Campaign to Protect Rural England

⁵ Campaign to Protect Rural England (2008) The Campaign to Protect Rural England's Policy on Brownfield Land, Campaign to Protect Rural England

⁶ Osborne, G. (2014) Mansion House Speech

⁷ Department for Communities and Local Government (2014) Government initiatives to help build more new homes on brownfield land

⁸ Department for Communities and Local Government (2014) £5 million fund will unlock 100 brownfield sites for new homes, DCLG

⁹ Department for Communities and Local Government (2014) Stepping onto the property ladder - a consultation, DCLG

Research carried out by CPRE and the University of the West of England in 2014 revealed that there are at least 22,680 hectares of brownfield land suitable for development that can accommodate a minimum of 976,000 homes, and that this is likely to be a conservative estimate.⁴ It makes social, environmental and economic sense for most new development to occur in built-up areas where infrastructure and services are already in place, or can be more easily provided, rather than in the countryside. Brownfield development is essential for urban regeneration. Done well, it brings homes, jobs and services closer together, reduces car dependence and enhances local environmental quality and local communities.⁵

Over the past year, the Government has been vocal in its support for increased brownfield development. George Osborne's Mansion House speech in summer 2014 talked of the need to 'limit development on important green spaces', and 'prioritise' brownfield sites for development.⁶ A number of Government-backed schemes have since been announced with the aim of increasing development, and specifically residential development, on brownfield land.

These have included the creation of 10 'brownfield housing zones' with £200 million funding and local development orders to enable the development of 200,000 houses. In London, the Government has pledged £400 million⁷ to enable 20 brownfield zones with similar planning measures and a further £5 million national funding pot was announced to help bring large-scale brownfield sites forward for development.⁸ At the time of writing, the Government was consulting on introducing a new starter homes exceptions site planning policy, to enable the development of underused and unviable brownfield sites for homes, specifically aimed at first time buyers.⁹



While the Government's renewed policy focus on enabling brownfield development is welcome, development output needs to be high quality and meet the housing needs of local communities and the local area. Previous policy approaches that have aimed to promote brownfield development have received criticism over the quality of development output, centred around:

- The design of some residential developments, which have been perceived to be poor quality
- The lack of a responsive mix of housing units to meet local need
- Overly high densities that are out of keeping with the character of the areas in which they are built

When forming new policies to promote brownfield regeneration, these past criticisms need to be addressed to ensure that design is of high quality. This paper aims to assess previous policy mechanisms for promoting brownfield development, and explore the criticisms of previous brownfield development. It goes on to examine examples of best practice brownfield development on both large and small sites and suggest policy approaches to help ensure future development is of a higher quality.

1.1 Planning policy and brownfield land in England: background and context

The poor condition of many urban areas, and the desire to promote sustainability through the containment of urban areas were key drivers that led to a desire for a policy shift in the 1990s.¹⁰ The Urban Task Force report of 1999 concluded that brownfield sites in urban areas should be regenerated for a range of housing types, including high and medium density dwellings that could support the needs of a socially diverse population.¹¹ This urban regeneration agenda led to significant transition in the location and density of housing delivered. New policies were designed to encourage a sequential approach to development that prioritised the reuse of brownfield land. National planning policy established a target of at least 60% of all new development to take place on brownfield land and sought to increase the density of new development.¹²

¹⁰ Williams, K. (2004) Reducing sprawl and delivering an urban renaissance in England: are these aims possible given current attitudes to urban living?, in C. Bae and H. Richardson (Eds) *Urban Sprawl in Western Europe and the United States*, pp. 37–54. Aldershot: Ashgate

¹¹ Urban Task Force (1999) *Towards an urban renaissance*. London: E&F Spon

¹² Department for Communities and Local Government. (2006). *Planning policy statement 3: Housing*, DCLG

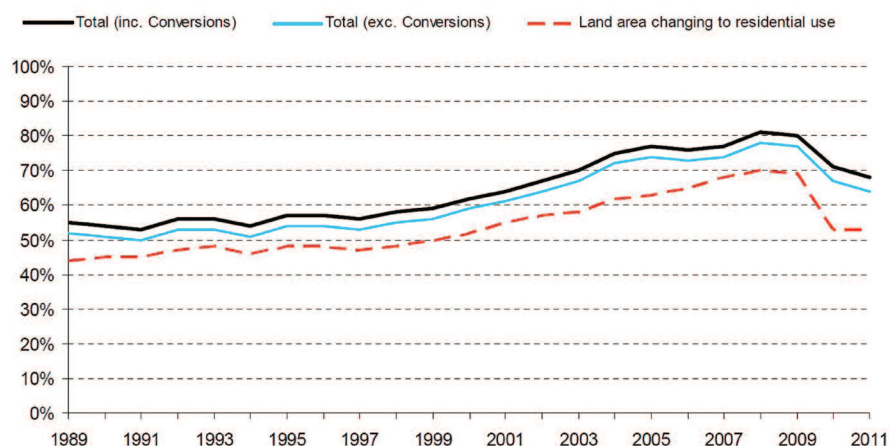
¹³ Government Statistics (2015)
House Building: Permanent
Dwellings Completed,
Government Statistics

¹⁴ Campaign to Protect Rural
England (2014) Removing
Obstacles to Brownfield
Development, CPRE

¹⁵ Government Statistics (2011)
Land Use Change Statistics
2011, Government Statistics

As a result, the proportion of housing on built on brownfield sites rose significantly from 59% (77,143 dwellings) in 1998 to a peak of 81% (114,202 dwellings) in 2008. It should be noted that the number of houses built overall fell from around 170,610 in 2007 to 140,990 in 2008 and completion rates remain low with only 112,400 completed in 2014.¹³ Some commentators have suggested that the reduction in housebuilding may be related to the prioritisation of brownfield sites, although there is no specific evidence supporting a causal link. The economic downturn has impacted upon the viability of some brownfield schemes and this has led to developments with planning permission remaining unimplemented or incomplete. Issues relating to the viability of brownfield sites are explored further in CPRE's 'Removing Obstacles to Brownfield Development' research paper.¹⁴

Proportion of new buildings on Previously Developed Land, and Previously Developed Land Changing to a residential use 1989-2011¹⁵



Since 2008, policy focus on brownfield land has gradually weakened, culminating in the National Planning Policy Framework (NPPF) published in 2012. With strong pressure to deliver high levels of market housing quickly, there is little consideration of local needs or the quality or location of that development. The proportion of housing development on greenfield sites rose by approximately 13% between 2008 and 2011. There are signs that this trend has continued as development ceased on many brownfield sites due to the recession, and many planning applications for large housing developments on greenfield land have been approved, with many more approved on appeal.¹⁶ However, no national dataset has been released to quantify this since 2011.

¹⁶ Campaign to Protect Rural
England (2014) Targeting the
Countryside, Campaign to
Protect Rural England

The Government has recently shown that it is keen to refocus policy and prioritise brownfield land for development. However, the 'top-down' and 'one-size-fits-all' brownfield policy mechanisms have been criticised, particularly regarding the design quality of residential development delivered on brownfield land.

1.2 Criticisms of previous brownfield development

There is consensus among many commentators that a consequence of the policy and target mechanisms implemented in the 1990s and early 2000s was that much residential development output on brownfield land was of poor quality.¹⁷ The most common criticisms were that these approaches allowed the over-development of high-density, monolithic developments comprised largely of small one- and two-bedroom flats.¹⁸

The high-rise, high-density nature of many of the redevelopments raised concerns over 'town cramming'. Many developments provided inadequate public space and amenities, put too much pressure on existing services and design was out of keeping with the character of neighbourhoods.¹⁹ In many cases, units were aimed primarily at the investment market. So-called 'buy-to-let' investment saw many units being sold pre-build, or off-plan, to investors which led to there being little interest in the design quality or size of the final product. This emphasis on the delivery of only smaller units has failed to meet the requirements of consumers and wider communities.²⁰

If developments of higher quality are to be achieved, addressing the underlying reasons behind criticisms of previous development is important. Research from the Joseph Rowntree Foundation²¹ and the Royal Institute of British Architects²² has identified five key factors contributing to the unresponsive of nature of the housing delivered on brownfield sites:

- **Land value:** Where land values are high (such as in many central urban areas) landowners have high expectations over the price they can expect for their land. To justify paying this high land value, house builders aim to maximise the value of a site. Smaller units are often more profitable and therefore more desirable from a developer perspective. This can diminish the supply of family homes and take their cost beyond the reach of local people.
- **Government building targets and policies:** These have typically been set in numbers of dwellings, without regard to the type, internal space or number of bedrooms of properties. Local authorities have been keen to maximise the number of units delivered on brownfield sites in order to meet house building targets (also set in numbers of units) and decrease the need for development proposals on greenfield land.

¹⁷ Whitehead, C. (2009) Who should build our homes? Six experts Challenge the Status Quo, CABE

¹⁸ Monk, S. and Tunstall, R. (2011) Why is it so hard to produce really good places? New affordable housing in England. University of York

¹⁹ Ibid

²⁰ Bramley, G. et al (2010) The Implications of Housing Type/Size Mix and Density for the Affordability and Viability of New Housing Supply, National Housing and Planning Advice Unit

²¹ Silverman, E. Lupton, R. and Fenton, A. (2006) A Good Place for Children? Attracting and retaining families in inner urban mixed income communities, Joseph Rowntree Foundation

²² RIBA (2009) Improving Housing Quality Unlocking the Market, Royal Institute of British Architects

- **Consumer perceptions:** A lack of confidence among house builders in the market for family homes in inner urban areas (where much brownfield land suitable for housing development is located) has contributed to a high number of smaller flats aimed at different segments of the population being delivered in these areas.
- **Novelty of design:** Despite successful examples in other European countries, many house builders assume that families will not choose to live in flats in urban areas. This leads to a 'chicken and egg' situation: house builders, believing there to be no market, do not design for families: families see no homes that challenge their traditional expectations about urban living and generate no demand to which house builders might respond.
- **Target buyer of unit:** The boom in 'buy-to-let' investment incentivised house builders to increase the number of small units as much as possible to cater for this type of demand. This created a vicious circle, driving up densities and driving down build costs to justify the prices being offered for urban land.

²³ Lyons, M. et al (2014) Mobilising across the nation to build the homes our children need. Labour Party: The Lyons Housing Review

²⁴ Department for Communities and Local Government (2008) English Housing Survey, Housing Stock Report, DCLG

²⁵ Cobbold, C. (2007) What is the Extent of Buy to Leave Empty in England? DCLG and DTZ

While these criticisms apply to many previous brownfield developments, there is demand for high-density development with smaller units in urban areas, particularly near employment and transport nodes. However, top-down targets and one-size-fits-all policy approaches have allowed developers to overdevelop small flats on brownfield land in some areas.²³ This strongly impacts upon prices in local housing markets and can lead to increased vacancies. In 2008, flats only represented around a fifth of all dwellings, but a third of all vacant dwellings;²⁴ this problem of vacant investment flats is associated largely with brownfield development in central urban areas.²⁵

Yet, it remains the case that there is considerable potential for brownfield regeneration across England. CPRE has identified that in 2014, there were at least 22,680 hectares of brownfield land suitable for development. To ensure higher quality development on this land, Government can learn from the criticisms of much previous brownfield development and adapt future policy.

2.0 Reforming the methods of information collection on brownfield sites

2.1 Problems of past and present data collection

Brownfield sites pose particular challenges to developers, and these challenges increase risk in the development process that can create significant obstacles to their reuse.²⁶ Responsible public sector bodies have a key role in encouraging high quality development by increasing understanding about brownfield sites, and the likely impact of their development on surrounding areas.

However, the level of analysis carried out on the condition and status of brownfield sites in England is low compared with best practice in other countries.²⁷ This is hindering their reuse as high quality analysis of information, relating to both an individual brownfield site and its surrounding area, is needed to derive the most appropriate use and development mix for sites.²⁸ There is currently no coherent national strategy for, or guidance on, data collection regarding brownfield sites and it is clear that, as a result, the planning system is not going far enough to facilitate development on these sites.

Previously, Government collected information on brownfield land through the national land use database (NLUD) which was operated by the Department for Communities and Local Government and former English Partnerships (incorporated into the Homes and Communities Agency in 2006). NLUD allowed an annual snapshot of the amount of brownfield land to be identified, and small amounts of analysis about the suitability of brownfield land for development to be carried out.

²⁶ Burroughs, L. (2014) Removing Obstacles to Brownfield Development, Campaign to Protect Rural England

²⁷ Thomas, R. (2002) A GIS-based decision support system for brownfield redevelopment, *Landscape and Urban Planning*, Vol. 58, No. 1, p. 7–23

²⁸ Ibid



²⁹ Central and Local Information Partnership, (2006) National Land use Database of Previously Development Land Scoping Study: Brief to Researchers, CLIP

³⁰ Ibid

³¹ Sinnett, D. Carmichael, L. Williams, K. Miner, P. (2014) From Wasted Spaces to Living Places, Campaign to Protect Rural England

However, there were problems with NLUD. Data was collected by local authorities and submitted to English Partnerships (later the Homes and Communities Agency) who compiled a national database. A lack of clear guidance meant that there was a high level of subjective judgement on the part of local authorities about the types of sites that should be included in submissions, and what the most appropriate uses should be for these sites. Some local authorities, it is claimed, may have chosen to 'downplay the extent of brownfield land in their areas, whereas some may have wanted to go the other way'²⁹ to reflect pro- or anti-development agendas. There was also evidence of 'thresholding' in the submission of data by local authorities, where smaller brownfield sites (below 0.5 hectares) were excluded from consideration.³⁰ Issues of data collection for NLUD are considered in more detail in CPRE's 2014 report 'From Wasted Spaces to Living Places.'³¹

Since 2010, there has been no obligation for national or local government to collect information on brownfield sites for NLUD. Sites considered suitable for housing development are now identified in Strategic Housing Land Availability Assessments (SHLAAs), where more detailed analysis of individual sites may be carried out. However, SHLAAs are largely based on sites brought forward by developers, and often do not report whether a site is brownfield. SHLAAs are inconsistent in terms of presentation, style and format,³² making aggregation of data above the local level problematic, and some consider the feasibility of individual housing sites in isolation without fully considering the potential impact of a development on the wider environment.

Currently, the lack of a structured approach to data collection means that brownfield sites are considered in isolation and this is not promoting development that is meeting the needs of communities in terms of use, design and housing mix. Reforming data collection relating to brownfield sites could encourage more appropriate and better quality development.

³² Ibid



2.2 Prioritising brownfield sites for development: reforming information collection

Current methods for assessing the contribution that brownfield (and other sites) could make to delivering housing (and other development) do not go far enough in identifying the types of development that need to be provided, and realistically distributing it amongst available sites. The European Commission promotes 'brownfield land indexing schemes' which aim to analyse brownfield sites over a wide area and identify priority sites that can be considered for further assessment with the ultimate aim of redevelopment. Research has indicated that such schemes can offer a structured approach to analysis that encourages development that better responds to the needs of communities.³³ Such a method would set out a more coherent, consistent and detailed approach to data collection on selected sites than is currently the case with SHLAAs, which are erratic in their format and data collection process.

Plotting the location of every identified brownfield recorded on GIS maps covering local authority or strategic housing market areas can increase understanding about the nature of sites available. Assessing sites over a wide area can directly aid decisions on the most appropriate uses for sites and allow the prioritisation of individual sites for development.

Indexing schemes promote a more detailed data collection and area-wide evaluation process by local authorities than currently exists. Such schemes consider collecting data on three key factors in establishing the most appropriate use, development mix and design for individual sites.³⁴ These are:

- Socio-economic factors: data can indicate the best use of a site (such as amounts of employment or residential development needed) and can indicate the most suitable housing mix (such as a need for larger or smaller units, ratio of market to affordable housing etc) that should be implemented on a site.
- Smart growth factors: data can indicate the connectivity of a site. Assessment of this data will feed into identifying the best development mix of a site, and give an indication of the level of funding that will be required to set up sustainable transport systems.
- Environmental factors: data can indicate the level of remediation that will need to take place on a site, the potential risks of construction and signal the additional construction costs. It can also give an indication of the biodiversity value of a site.

³³ Chrysochoou, M. Brown, K., Dahal, G. et al. (2012) A GIS and indexing scheme to screen brownfields for area-wide redevelopment planning. *Landscape and Urban Planning* 105:187- 198.

³⁴ European Commission (2013) Science for Environment Policy Brownfield Regeneration, Issue 39, Science Communication Unit, University of the West of England

The table below sets out key variables that could be collected and assessed in order to prioritise individual brownfield sites for development, aid decisions about the most appropriate use for a site, and hence ease the development process.

Indexing and Prioritising Brownfield Sites for Responsive Development: Potential Indices and Variables³⁵

³⁵ Ibid

Indices	Variables
<p>Socio-economic index:</p> <p>To understand how potential development on a brownfield site would impact upon a neighbourhood or community and to assess its potential for economic growth.</p>	<p>Property values (economic performance of an area)</p> <p>Unemployment (whether an area is in need of employment uses)</p> <p>Population density (demographic structure of the population in an area)</p>
<p>Smart growth index:</p> <p>To understand the liveability of an area, taking into account accessibility to utilities, transport, proximity of employment opportunities and existing housing.</p>	<p>Intersection density (level of road connectivity of a site and surrounding neighbourhood)</p> <p>Utility service area (site's potential connectivity to existing electricity and water mains)</p> <p>Employment and housing balance (the existing balance of uses in an area surrounding a potential development site)</p> <p>Bus transit (how well a site is connected to bus transit can inform transport requirements)</p> <p>Rail transit (how well a site is connected to rail transit can inform transport requirements)</p> <p>Rail potential (whether a site could be potentially connected to existing rail services via the creation of a new station)</p>

Indices	Variables
<p>Environmental index:</p> <p>To understand the potential environmental and other physical constraints affecting development of the site, facilitating mitigation where appropriate.</p>	<p>Past use of site (likelihood of serious contamination of a site)</p> <p>Soil permeability (impact that contamination could have on the surrounding environment)</p> <p>Planning status of the site (suitability of development of a site from an environmental perspective, for example if a site is on or adjacent to protected land)</p> <p>Proximity to watercourses (level of surface and ground water in close proximity to sites as water is the key pathway by which contamination can travel from sites to reach potentially sensitive areas)</p> <p>Proximity to sensitivity receptors (whether development of the site may negatively affect biodiverse areas on site or in the surrounding areas)</p> <p>Characterisation as floodplain or wetland (whether the site is on or in close proximity to a floodplain or wetland)</p>

Currently, the lack of data collection on brownfield sites is hindering their redevelopment. Re-establishing the national land use database and mapping the location of brownfield sites can aid the prioritisation of such sites for redevelopment. The key benefit of reforming data collection to follow the principles of a 'brownfield indexing' scheme is that it can establish the most appropriate use, development mix and design for individual brownfield sites better than the current system of speculative development. Much of the information is collected already by local authorities but due to the 'fragmented nature of local government organisations' it is often not accessible to policy makers.³⁶ The added understanding gained by the collection and assessment of this evidence can allow local authorities to take a proactive role in enabling better quality development on brownfield land than has previously taken place on some sites in recent years.

³⁶ Pennell, C. (2015) Dare to Share: Putting the Data into Data-Driven Services, Ovum

3.0 Density policy and brownfield land: the need for a new approach

³⁷ Office of the Deputy Prime Minister (2000) Planning Policy Guidance 3: Housing, London: HMSO.

³⁸ Department for Communities and Local Government (2006) Planning Policy Statement 3, DCLG

³⁹ RIBA (2009) Improving Housing Quality Unlocking the Market, Royal Institute of British Architect

⁴⁰ Government Statistics (2010) Land Use Statistics (Previously Developed Land), UK Government

3.1 The impact of previous national targets

National or top-down density targets were a feature of national planning policy during the 2000s. 'PPG3: Housing', (published in 2000) advocated densities of 30-50 dwellings per hectare (dph).³⁷ This was replaced by PPS3 (published 2006) which set a national indicative minimum of 30 dwellings per hectare with higher densities expected in city centres.³⁸ The setting of these national targets contributed to a big increase in the density of new housing developed. In 1989, the overall average density of housing was 23dph and this increased to 43 dph in 2011. The average density of housing on brownfield land increased to 53dph and many schemes particularly in city centres, were delivered to higher densities of around 100dph.³⁹

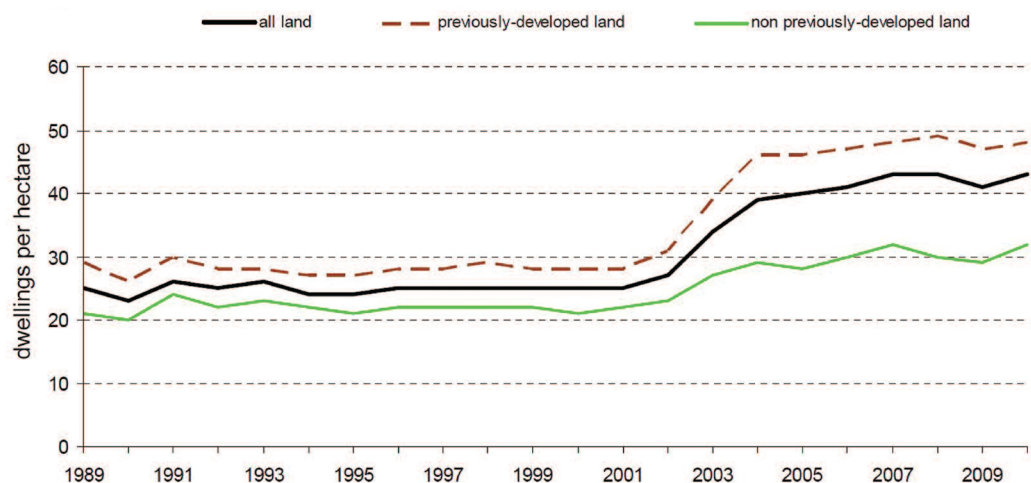
Housing density levels: previously developed land and non previously developed land⁴⁰

⁴¹ Monk, S. and Tunstall, R. (2011) Why is it so difficult to create 'really good places?' New affordable housing in England. University of York

⁴² Adams, D. and Payne, D. (2011) 'Business as usual? – Exploring the design response of UK speculative house builders to the brownfield development challenge'. In S. Tiesdell and D. Adams (Eds): Urban Design in the Real Estate Development Process

⁴³ DLP Consulting (2010) Update to Planning Policy Statement 3: Housing Client Brief, DLP Consulting

⁴⁴ National House building Council (2014) New Homes Statistics Review: Quarter 2 2014, NHBC



Density targets also contributed to a marked change in the type of housing unit delivered, away from houses and towards flats.⁴¹ The density targets set out in PPS3 were not taken forwards into the National Planning Policy Framework in 2012⁴² because, according to the new Government, they had contributed to a lack of family sized homes that were needed by local communities.⁴³ This resulted in a fall in the proportion of new flats registered by house builders.⁴⁴

Local authorities are now expected to decide what level of density is appropriate for their area, and to work with developers to deliver the right mix of homes for the local community. However, due to perceived viability issues on brownfield sites, developers frequently argue that they need to deliver development with a high number of smaller housing units and be as efficient as possible with building materials to generate required profit levels.⁴⁵ This results in ongoing high-density development of sites with an unresponsive housing mix despite the intention of policy to avoid this. While high-density developments may be appropriate on some brownfield sites, many would benefit from a more diverse housing mix that catered for local need.

3.2 Housing density: definition and discussion

CPRE London's Towards a Liveable London research paper, published in 2014, argued that density was more than simply about buildings or dwellings. Density needs to take account of various dimensions that 'relate to design, quality of life in a neighbourhood, social and spatial crowding, accessibility to work and amenities.'⁴⁶ In the past, the measurement of density has been intrinsically linked to issues such as overcrowding and urban sprawl. In response to these problems, policy makers have sought to control densities by focusing on prescribing minimum and/or maximum density standards.

In relation to housing and planning, density has historically been seen from two perspectives. From a supply side perspective, it concerns the form of required densities in the delivery of new housing. Secondly, from a demand side perspective, it can be seen as the structure of population that actually live in the existing housing stock. The first can be seen as a regulatory requirement; the second is the outcome of demand as constrained by regulation.⁴⁷ The objective of such measures is to control the number of dwellings, or residents, living on a site.⁴⁸

Both perspectives can be measured numerically. From the supply side perspective, density can be measured as the number of dwellings, bed spaces or habitable rooms per hectare.⁴⁹ This measure may be expressed as gross or net, where gross density includes open space, roads and other buildings on a site, and net density refers only to the land occupied by dwellings. From a demand side perspective, density is usually measured as population density or the number of people living in an area (ie, measured in people per hectare).⁵⁰

⁴⁵ Payne, S. (2013) Pioneers, Pragmatists & Sceptics: Speculative Housebuilders and Brownfield Development in the Early 21st Century. *Town Planning Review*, 84 (1). 37 - 62

⁴⁶ Campaign to Protect Rural England: London Branch (2014) Towards a Liveable London, CPRE London

⁴⁷ Whitehead, C. (2008), The Density Debate: A Personal View, East Thames Housing Group, London.

⁴⁸ Berghauser Pont, M. and Haupt, P. (2009) Space Density and Urban Form. University of Delft.

⁴⁹ Dempsey, N., Brown, C., & Bramley, G. (2012) The key to sustainable urban development in UK cities? The influence of density on social sustainability. *Progress in Planning*, 77(3), 89-141.

⁵⁰ Williams, K. (2009) Space per person in the UK: A review of densities, trends, experiences and optimum levels. *Land Use Policy*, 26 (Supple). pp. 83-92.

- ⁵¹ Pafka, E. (2013) Nothing Gained by only Counting Dwellings per Hectare: A hundred years of confusing urban densities, State of Australian Cities Conference, Sydney, 2013, University of Melbourne
- ⁵² Town and Country Planning Association, (2002) Statement on Residential Densities, TCPA
- ⁵³ Griffiths, D. (2009). Density targets: Measuring everything except that which makes life worthwhile? 10th International Cities Town Centres & Communities Society Conference. Deakin University: Geelong.
- ⁵⁴ Dovey, K. and E. Pafka (2013). "The urban density assemblage: Modelling multiple measures."
- ⁵⁵ Van Loon, P. P., & De Graaf, R. (2011) Sustainability and urban density a decision based design approach. In Management and Innovation for a Sustainable Built Environment; MISBE 2011,(June 20-23) CIB International Conference, Amsterdam. Delft University of Technology
- ⁵⁶ Clarke, P. (2007) Metricity: Exploring New Measures of Urban Density, Research carried out at the Helen Hamlyn Centre, October 2006 - July 2007
- ⁵⁷ Lozano, E. (1990) Density in communities, or the most important factor in building urbanity. In: M. Larice & E. Macdonald, (2007) The urban design reader. Oxon: Routledge. pp. 312-327. Urban Design International

Both these measures are problematic. Measuring density from a supply side perspective via dwellings per hectare does not account for the size of dwellings, mix of uses or size of households, factors that can change significantly over time.⁵¹ A perception can be created that an area has a high or low residential density due to the form of the dwellings when in reality this conclusion cannot be justified in terms of the actual population of an area.⁵² However, measuring the number of people living per hectare may also be inaccurate as the result can be impacted upon by variations in building types, areas without residential use, and under-occupation of or overcrowding within individual dwellings.⁵³

There is no national or international consensus on which definition of housing density should be used to give the most helpful measurement for planning purposes. It is likely that measuring both dwellings per hectare and population per hectare will continue to be used in policy formation because they are relatively simple to calculate and can relate more directly to opportunities for collecting, aggregating or updating data.⁵⁴ However, a multivariable measure of density could help create better designed developments on brownfield sites.

3.3 Rethinking density policy to ensure better design on brownfield sites

When considering suitable brownfield sites for development, traditional measures of density may be perceived as 'too elastic a concept that poorly reflects the spatial properties of urban areas'.⁵⁵ Many brownfield sites are developed with a mix of uses and while quantitative measurements can provide useful information about specific sites, they isolate surrounding areas and have little regard to the diversity of household type or demographic or user need.⁵⁶ Arguably, any single numerical measure of density is limited and does not reflect the complexities of creating successful urban environments. As outlined above, a key problem with defining density as a numerical value is the poor relationship between density and building type. Often on a single site, the same levels of density can be obtained with different building types as illustrated above right.⁵⁷

Three areas of 75 dwellings per hectare, illustrating why dwellings per hectare can be a misleading measure of density⁵⁸

⁵⁸ Fernandez Per, A., and Mozas, J. (2007). DBOOK. Density, data, diagrams, dwellings. Vitoria-Gasteiz



A solution to this issue is a move away from single measurements of density towards a multi-variable measurement.⁵⁹ The key benefit of a multivariable measure of density is that resulting policies formed can address the particular challenges and complexities of urban growth. Academic research from the Netherlands⁶⁰ and Australia⁶¹ has called for density measurements that combine a number of factors to ensure that schemes relate to their wider environment.

⁵⁹ Pafka, E. (2013) Nothing Gained by only Counting Dwellings per Hectare: A hundred years of confusing urban densities, State of Australian Cities Conference, Sydney, 2013, University of Melbourne

⁶⁰ Berghauser Pont, M. and Haupt, P. (2009) Space Density and Urban Form, University of Delft.

⁶¹ Pafka, E. (2013) Nothing Gained by only Counting Dwellings per Hectare: A hundred years of confusing urban densities, State of Australian Cities Conference, Sydney, 2013, University of Melbourne

3.4 A multivariable measure to prescribe suitable guideline densities in London

In England, currently only the Greater London Authority has an approach that assesses different variables to indicate acceptable densities on development sites. The London Plan uses a matrix of three such variables: the local context and character of different urban areas, public transport capacity and the number of habitable rooms per unit.⁶²

⁶² Greater London Authority (2011) The London Plan – Spatial Development Strategy for Greater London, GLA

To assess local context and character, the matrix divides London's urban environment into three segments:

- **Central:** Areas with very dense development, a mix of different uses, large building footprints and typically buildings of four to six storeys, located within 800 metres (reasonable walking distance) of an International, Metropolitan or Major town centre.
- **Urban:** Areas with predominantly dense development such as terraced houses, mansion blocks, a mix of different uses, medium building footprints and typically buildings of two to four storeys, located within 800 metres of a district centre or, along main arterial routes
- **Suburban:** Areas with predominantly lower density development such as detached and semi-detached houses, predominantly residential, small building footprints and typically buildings of two to three storeys

Public transport capacity is measured using Public Transport Accessibility Levels (PTALs) which effectively measure a combination of how close public transport services are from a given point and the frequency of services plus walking times and waiting times.⁶³ PTALs range from levels 1 to 6 where 6 represents the highest level of accessibility. Broadly, policy considers high-density development more acceptable in areas with strong transportation links.

⁶³ Transport for London, (2006) Transport Assessment Best Practice Guidance Document, TFL

Habitable rooms per hectare gives an indication of the actual living capacity of an area or site. There is no statutory definition of 'habitable rooms'. Some London local authorities, such as Merton and Tower Hamlets, have defined habitable rooms as a room within a dwelling, 'the primary use of which is for living, sleeping or dining and includes kitchens larger than 13 square metres. This definition includes living rooms, bedrooms and dining rooms but excludes halls, corridors, bathrooms and lavatories.'⁶⁴ This gives an accurate reflection of the amount of residential floor-space being proposed and helps give an indication of suitable densities for developments with larger or smaller unit types. Higher density development with smaller units is considered more suitable in central areas.

⁶⁴ Merton Council (2003) Glossary of Planning Terms and Abbreviations, Merton Council



The London plan: density matrix (habitable rooms and dwellings per hectare)⁶⁵

⁶⁵ Greater London Authority (2011) The London Plan – Spatial Development Strategy for Greater London, GLA

Setting	Public Transport Accessibility Level (PTAL)		
	0 to 1	2 to 3	4 to 6
Suburban	150-200 hr/ha	150-250 hr/ha	200-350 hr/ha
3.8-4.6 hr/unit	35-55 u/ha	35-65 u/ha	45-90 u/ha
3.1-3.7 hr/unit	40-65 u/ha	40-80 u/ha	55-115 u/ha
2.7-3.0 hr/unit	50-75 u/ha	50-95 u/ha	70-130 u/ha
Urban	150-250 hr/ha	200-450 hr/ha	200-700 hr/ha
3.8-4.6 hr/unit	35-65 u/ha	45-120 u/ha	45-185 u/ha
3.1-3.7 hr/unit	40-80 u/ha	55-145 u/ha	55-225 u/ha
2.7-3.0 hr/unit	50-95 u/ha	70-170 u/ha	70-260 u/ha
Central	150-300 hr/ha	300-650 hr/ha	650-1100 hr/ha
3.8-4.6 hr/unit	35-80 u/ha	65-170 u/ha	140-290 u/ha
3.1-3.7 hr/unit	40-100 u/ha	80-210 u/ha	175-355 u/ha
2.7-3.0 hr/unit	50-110 u/hr	100-240 u/ha	215-405 u/ha

Suitable guideline densities, assessed as dwellings per hectare, are set out in a matrix within the London Plan. Together, the assessment of density via the use of these three variables gives a better indication of density levels than those calculated on a crude measure such as dwellings or population per hectare. The indicative targets give local authorities flexibility to assess sites on an individual basis and guide developers as to what an acceptable density may be on an individual site.

However, there are criticisms of this method of assessing density. Firstly, there is no built-in mechanism for assessing the form and tenure of housing and often what is provided does not match what is needed by the local community. The method has been little studied or challenged in academia and there are potential issues with the accuracy of PTALs as a measure of public transport capacity, such as not factoring in cycle accessibility.⁶⁶

⁶⁶ Huxford, R. (2014) Tall Buildings and Density Debate: Notes and reflections of an event organised by Urban Design London, Urban Design London

Brownfield development is often mixed-use and the London Density Matrix fails to assess the relationship between residential development and other uses on a site. Previous research has found that to better explore this relationship, density policy should be formed around four principles:⁶⁷

⁶⁷ Clarke, P. (2007) *Metricity: Exploring New Measures of Urban Density*, Research carried out at the Helen Hamlyn Centre, October 2006 - July 2007

- **Intensity:** the measure of an urban environment's socio-economic needs. Density policy and use classification may restrict the appropriate mix and provision of spaces in urban areas and a new typology that reflects the current conditions of people's behaviour and user needs is required.
- **Amenity:** the measure of an urban environment's demographic needs. There is a need to measure household characteristics, diversity and user needs in separate urban areas.
- **Autonomy:** the measure of an urban environment's democratic needs. Aligning user needs with the local provision of employment and services by improving consultation can feed into what communities view as suitable type and density of a development in an urban area.
- **Frequency:** the measure of an urban environment's dynamic and mobile population. This examines the need for accessible mobility for transport uses in urban areas. Density policy should take into account accessibility to public transport.⁶⁸

⁶⁸ Ibid

The benefit of a multivariable measure is that urban designers and policy makers are able to better describe different urban environments and prescribe development. However, while incorporating all of these factors is desirable, no matrix has yet been created that can integrate each of these principles, and more research would need to be required to formulate such a matrix.

Despite the criticisms of the London Density Matrix, other urban areas in England can investigate the creation of similar density guidelines formed around the variables of urban context, public transport capacity and habitable rooms per unit/hectare. Ideally, additional variables such as employment density, dwelling type and tenure, site coverage, floor area ratio and building form could be included in a matrix.⁶⁹ The creation of such a matrix would aid in the development of brownfield land that better responds to existing urban environments and the needs of communities.

⁶⁹ Griffiths, D. (2009). *Density targets: Measuring everything except that which makes life worthwhile?* 10th International Cities Town Centres & Communities Society Conference. Deakin University, Geelong.

4.0 Best practice development on large-scale brownfield sites

Large-scale brownfield sites can be turned into successful sustainable neighbourhoods that provide a mix of housing and other uses. Recent analysis has shown that there are at least 64 brownfield sites of 40 or more hectares in England.⁷⁰ Although not all of these sites will be suitable for development, many of them are in locations where entirely new neighbourhoods can be created.

Successful large-scale development of this type has taken place in other parts of Europe. This section identifies the case study of Vauban in Freiburg, Germany, and considers the lessons that can be learnt from its success and assesses whether these can be implemented on large-scale strategic brownfield sites in England.

⁷⁰ National Land Use Database, (2014) National Land Use Database of Previously Developed Land, UK Government

⁷¹ Coates, G. (2013) The Sustainable Urban District of Vauban In Freiburg, Germany, *International Journal of Design & Nature and Ecodynamics*, Volume 8: 2013

⁷² Field, S. and Foletta, N. (2011) Europe's Vibrant New Low Car(bon) Communities, Institute for Transportation and Development Policy.

Best Practice Brownfield Design: Case Study 1.

The Creation of a Sustainable Urban District in Vauban, Freiburg, Germany^{71 72}

- Vauban is built on a 40ha former military base on the southern edge of Freiburg. Construction of the new neighbourhood started in 1998, and currently has a population of 5,000 in 2,000 homes. Previous academic research considers the development to be a flagship for sustainable brownfield development.
- Vauban's success is a result of the unique planning of the development. Exemplar public participation was encouraged with the city authorities working closely with grass-roots leaders. This led to the establishment of a mixed group to lead the master-plan of the development called Forum Vauban. The creation of such a group allowed expanded public participation, drawing together a wide range of interested citizens, future residents and planners to set and help achieve the key goals of the development.
- The key objective of the development was to create a sustainable high-density neighbourhood with a mix of housing, space for small businesses and public services such as schools and recreational areas. To ensure that this objective was implemented Forum Vauban drew together the views of citizens, future residents and local government on how the development should be shaped. They then held a competition to select a master-plan design that best represented these aspirations.

The Creation of a Sustainable Urban District in Vauban, Freiburg, Germany

- A main principle of the Vauban development was to promote alternatives to car use. At the start of construction, the city's existing tram service was extended into the heart of the neighbourhood. German legislation (the Baden Württemberg land law) usually requires every home to have access to a parking space. However, the development was able to negotiate a compromise



- resulting in a parking ratio of less than 0.5 spaces per housing unit, with parking located in garages on the edge of the development. A legal framework was created in which residents are offered a space in these garages at a high financial cost. Residents can opt out of paying this fee by signing a legal declaration stating that they will not own a car and these measures have led to car ownership rates of just 150 cars per 1,000 people.
- Vauban's housing mix has successfully responded to the needs of the community. A key reason for success was the model of housing development used. Risk-averse volume developers were 'unwilling to invest' in residential development that did not provide car parking and set high environmental standards. Instead, Forum Vauban set up building co-operatives formed of 'architects, builders, residents and financiers' with each being sold small plots of land on which to build housing consistent with the densities and minimum energy standards set out in the master plan. These co-operatives were successful, with this model of development accounting for the majority of the residential and mixed-use buildings developed in the district.
 - The creation of building co-operatives also meant that the housing mix has rigidly adhered to that set out in the master-plan, which aimed to meet the needs of different segments of the local community. Much of the housing is mid-rise, mid-density with the ground-floor in other uses. No single-family detached housing has been developed in the district. Approximately 10% of the housing in Vauban is socially rented and a large proportion is aimed at students and single parent households.

4.1 Key lessons from Vauban

1. Improving frameworks for participatory planning will enable inclusive and responsive design

Participatory planning is important in ensuring that the design of a development best responds to the needs of communities. Vauban's extended framework of citizen participation through the 'Forum Vauban' was able to set the design goals and lead the development process in the creation of the new neighbourhood. For this reason, unique design concepts in the development, such as the preference for alternative transport modes to the car and high ecological building standards, were able to come to fruition.

Successful public participation in development hinges on having a legal framework that identifies land for development, requires community engagement throughout the planning and implementation process of a project and incorporates adequate resources to ensure that representative views can be given effective voice.⁷³ The Vauban example encapsulated all of these factors with a mix of public and private funding that enabled five people to be employed to collate the views of communities and, effectively, represent them.

If we are to encourage higher quality development on strategic brownfield sites in England, local government and developers need to play a more active role in engaging communities throughout the development process.⁷⁴ It is important that resources are shared to help create citizens associations like Forum Vauban that can give a coherent and representative community vision for the development of a site. Learning from these methods can also inform best practice in neighbourhood planning, as championed by central government.

Neighbourhood planning techniques also provide the opportunity to go further than just facilitating citizen participation towards truly collaborative planning with residents working in partnership with developers and service providers, similar to the '*baugruppen*' building cooperatives described overleaf.

⁷³ Knox, P. (2012) Palimpsests: Biographies of 50 City Districts. International Case Studies of Urban Change

⁷⁴ Civic Voice (2015) Collaborative Planning For All, Civic Voice

2. New models of development can lead to a responsive and innovative mix of housing options

One of the unique features of Vauban is the model of development. It has been praised for its diversity in residential built form and facades, from single-family terraced housing to mid-rise apartment blocks. The diversity and success of housing in Vauban is the result of the innovative development model where land was divided into small plots and sold to small building co-operatives called *baugruppen*. These comprised between 3 and 21 households, and enabled future residents to be responsible for the detailed design of their property, employing the expertise of individual architects and specialist builders to ease the development process.⁷⁵ This model enabled prospective residents to specify the design to accommodate their own needs and ensure development was more likely to meet specific environmental and social objectives.

⁷⁵ Knox, P. (2012) Palimpsests: Biographies of 50 City Districts. International Case Studies of Urban Change

A similar development model could be implemented on large-scale brownfield sites in England. Land could be divided into small parcels with future residents given greater responsibility to form building co-operatives with specialist architects and builders. This type of model could ensure that housing is more responsive in design than much of the current residential development in England. The UK currently has the lowest level of custom- and self-build housing completions in Europe,⁷⁶ and the lack of diversity in the house building sector is part of the reason for low construction rates in England.⁷⁷ The Government is keen to promote custom- and self-build housing and improve the representation of smaller house builders: the Vauban model of residential development could deliver multiple objectives with regard to housing development, rebalancing the house-building sector and regenerating brownfield sites.

⁷⁶ Ash, C.; Birkbeck, D.; Brown, B.; Cerulli, C.; Stevenson, F. (2013) Motivating Collective Custom Build Report Sheffield: University of Sheffield

⁷⁷ Burroughs, L. (2014), Increasing Diversity in the House Building Sector, CPRE

3. Design which prioritises alternative forms of transport

Vauban has been successful in promoting alternative modes of transport to the car. This success has stemmed from the creation of strong transport alternatives and a 'carrot and stick' approach to reducing car ownership. Vauban's innovative design was based around preventing parking on residential streets. However, without the prioritisation of other forms of transport planned at an early stage of planning and construction, designing the site to discourage car use may not have been successful. At an early stage of master planning, Vauban was linked to Freiberg's main tram-line, which now runs through the centre of the development; no home is more than 400 metres away from a stop, giving residents increased and easy connectivity with the rest of the city, reducing car dependency.

Streets are designed to minimise car use with no parking allowed in front of dwellings. Instead, cars are parked in multi-storey car parks on the periphery of the development. Charging high fees for car storage and use, and the design of safe pedestrian and cycle routes has meant that many residents are happy to sign a legal agreement to not own a car. However, car-free residents have access to the Freiberg car club, which also gives members a free pass for all forms of public transport in the city. This approach to reducing car use has worked with car ownership rates at just 15%.

The key lesson from Vauban is that development designed to discourage car use can only work where there are accessible and viable alternatives. These need to be planned in at the earliest possible stage. It shows that a 'carrot and stick' approach that penalises the use of cars and promotes alternative measures of transport can be successful in reducing car ownership. However, people who choose to avoid car ownership may occasionally need access to a vehicle, and an organised car club scheme can address this need.

5.0 Best practice development on small-scale urban brownfield sites

Due to the constantly evolving nature of English urban areas, small-scale brownfield sites (of approximately two hectares and under) regularly become available for development. Often, these sites are not identified in the plan-making process, but cumulatively can support large numbers of dwellings to meet housing demand and need. Such small-scale development can be highly visible and iconic or can go almost unnoticed. Development of these sites can add to the character of urban areas, ensuring the vitality of a neighbourhood's services, defining streetscape and increasing the intensity of urban life.⁷⁸

⁷⁸ Lvroljks, L. Mulvihill, D. Beunderman, J. (2006) Design Catalogue: Successful Examples of Urban Development in Europe. London Development Agency & Government Office for London

Best Practice Brownfield Design: Case Study 2.

Pocket, London, England ^{79 80 81}

- Pocket is a specialist house builder that focuses on developing small-scale brownfield infill sites in urban areas, currently based in London, but planning to expand across the south of England. Pocket are aiming to deliver between 400 and 500 units per year, and a typical development ranges from 25 to 50 flats on small-scale brownfield sites.
- Pocket specifically targets small-scale urban sites where a standard house builder would look to provide little or no affordable housing. Such sites can be publicly or privately owned. The company will then negotiate with the local authority to develop a scheme of predominantly one-bedroom, 400 square foot flats (122 square metres).
- Homes are targeted at those who earn too much to qualify for social housing, but who are priced out of the open market. Homes are developed and available for purchase at a discount of at least 20% less than market value. Pocket's homes are discounted in perpetuity because they retain a restrictive covenant that only allows the property to be sold to other people who live or work in the borough, don't own another property and earn under £66,000 per annum. This prevents purchase by investors, who cannot buy a unit without infringing the lease.
- Pocket's 'third-way' development model that provides housing that is priced lower than open market housing but is less restrictive than social housing has helped them receive financial backing from the Greater London Authority. A loan of over £20 million pounds has been provided to enable the construction of more Pocket units.
- The target market of Pocket's one-bedroom flats is typically single person households looking to buy for the first time. A careful design process ensures that the flats respond to users' requirements with intelligent design solutions that make the best possible use of space, with factors such as built-in storage and underfloor heating to free up wall space. Working with a range of specialist architects and contractors ensures that Pocket's developments are designed to complement the existing urban form of neighbourhoods, while also making a distinctive contribution that enhances the character of the area.



77-79 Fermoy Road W9: An award winning Pocket development comprising of 32 affordable one-bedroom apartments on the site of a former print works. The scheme demonstrates Pocket's business approach as outlined above: to take small-scale infill sites and develop high quality apartments which can help meet local housing need.

⁷⁹ Property Week, (2014) Interview in Property Week With Marc Vlessing 21/03/14,

⁸⁰ Construction Manager, (2014) London's Micro flats Planned for Bristol, Article 15/08/2014,

⁸¹ Architects Journal (2013) Use all available space, Interview with Marc Vlessing 13/09/13, Architects Journal Magazine.

5.1 Key lessons for successful small-scale brownfield development in urban areas

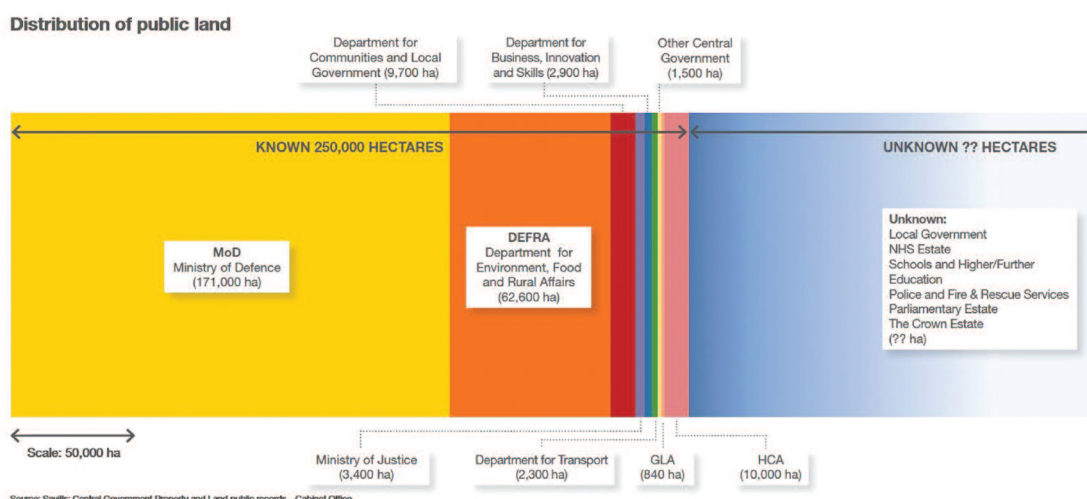
1. The creation of a register of publicly owned land can increase small-scale brownfield development

Creating a register of suitable publicly owned small-scale brownfield sites can enable an increase in high quality development. Recent research by Savills has revealed that publicly owned land has the capacity to provide approximately two million homes across England. They estimate that central government alone owns 8,200ha of land in urban areas which tend to be most readily developable and potentially suitable for medium- to high-density development. In the urban fringe, central government owns a further 4,100ha and these smaller sites can deliver up to a couple of years' worth of supply quickly with little need for new infrastructure provision.⁸²

⁸² Savills, (2014) Spotlight on Public Land: Unearthing Potential, Savills Research.

The distribution of public land in England⁸³

⁸³ Ibid



⁸⁴ Thomson, A. and Wilkes T. (2014) Public Land, Public Good, Localis

Not all public sector land available for development is likely to be suitable for just housing alone and unsustainable, monotype development should be avoided.⁸⁴ Obligating public sector bodies to identify, map and assess the land they own is a key step in encouraging redevelopment, and a clear register of public sector land ownership will help enable much needed residential development in suitable locations.

2. Requiring public bodies to make suitable sites available for development will increase small-scale brownfield development

⁸⁵ Burroughs, L. (2014) Removing Obstacles to Brownfield Development, CPRE

Public sector bodies that own land should be required to take the lead on enabling development on smaller brownfield sites. Other than the lack of income from unused land in their ownership, public sector bodies are not penalised if they retain developable land. There is the opportunity to levy taxation on the completed value of housing on unused sites that are suitable for residential development. This might take the form of charging council tax on the completed value of the housing that could be built on these sites if development remains uncompleted.⁸⁵

⁸⁶ Future of London, (2014) COCos: More than a flavour of the month, Future of London

To enable development on suitable sites, local authorities should also access all funding streams available to them to help fund new development on suitable sites. Local authorities are now better able to obtain increased funding for housing delivery borrowing against their housing revenue accounts. While many local authorities have not yet borrowed up to maximum cap levels, some, such as Ealing Borough Council, have been successful in using this method to increase affordable housing supply on suitable sites in their ownership.⁸⁶ In the coming years many more local authorities are expected to borrow more money to fund housing development.⁸⁷ Issuing guidelines for local authorities based on the previous successes can simplify this process.

⁸⁷ Perry, J. (2014) Where is housing heading? Why is it important to change local authority borrowing rules? The Chartered Institute of Housing

⁸⁸ Manchester City Council (2014) Manchester's innovative Housing Investment Fund given green light, Manchester City Council

Working with other organisations can also enable development on suitable sites owned by public bodies. An example of this is the recent joint venture partnership formed between Manchester City Council and the Greater Manchester Pension Fund. The development model uses five available sites owned by Manchester City Council and the Homes and Communities Agency, while Greater Manchester Pension Fund finances the build. The aim is to stimulate house building, while reducing the usual risks associated with a development. The model ensures that the sites have a tenure mix that responds to demand and need particular to the locations of the sites.⁸⁸ Local authorities are key landowners in many areas with high demand and need for housing and they could work more with developers, investors and housing associations to make suitable small-scale brownfield land available for responsive residential development.

3. A flexible approach to space standards that meets local requirements

The debate around space standards is not new, and has been especially relevant since the abolition of the Parker Morris space standards in the 1980s. These recommended standards of floor-space dictated the size of rooms according to the number of people living within the home and the number of storeys. The space standards were deleted in the belief that market forces would ensure that homes responded to consumer demand in design. The average size of house has been shrinking ever since their deletion.⁸⁹ While many see a universal, centrally set approach to space standards as key to improving the design of dwellings, such a prescriptive policy can also have negative impacts. For example, increasing room and dwelling size will increase build costs and in turn this may influence viability, leading to less units being delivered and adding to the affordability crisis.⁹⁰

Consumer choice is key, and a prescriptive one-size-fits-all approach to space standards may not produce housing to meet the needs of all segments of the community. Instead, design should be the main consideration in the debate over space standards. In the Netherlands, strict building regulations set out in the *Bouwebesluit* (Dutch building regulations) ensure that important factors such as storage space are incorporated into building plans and once these strict standards have been adhered to, architects are free to be innovative with design.⁹¹ These strict design standards mean that the units provided meet the needs of consumers, but also that there are no rigid space standards for individual rooms or units.

In England, a potential solution is for Government to set guidelines for the desired size of units, broken down by the number of occupiers. A 'kite mark system' could indicate whether the design of a home meets an advised minimum size for a certain number of occupants. An increase in such consumer information may make the market more perceptive and encourage a longer-term improvement in standards.⁹² However, it is the responsibility of local authorities to assess what type of housing needs to be provided in their areas and the nature of dwellings should respond directly to this. For example, in urban areas with high employment there is likely to be a high demand from single- or two-person professional households where well-designed, high-density smaller flats may be the most appropriate form of housing.

⁸⁹ Roberts-Hughes, R (2011) *The Case for Space: The Size of England's New Homes*, RIBA

⁹⁰ Slaughter, M and Vlessing, M. (2014) *Debate of the Week: Should we have space standards*, Building Magazine 28/3/2014

⁹¹ Ibid

⁹² Royal institute of British Architects (2009) *Improving Housing Quality: Unlocking the Market*, RIBA

6.0 Conclusion

The aim of this paper has been to consider policy recommendations to ensure new development on brownfield land is more responsive to the needs and aspirations of the population than has previously been the case. Ensuring that brownfield development meets local needs and does not harm the character and amenity of the area will address many criticisms of poor design and 'town cramming' applied to recent schemes.

There are significant numbers of brownfield sites suitable for residential development and these come in a variety of locations and sizes. The lack of access to information on brownfield sites is a significant obstacle to their development. Measures can be implemented that obligate local authorities to collect data on all brownfield sites within their urban areas. This data should not be just site specific, but also consider the relationship with surrounding areas in order to determine the most appropriate uses and development mix on individual brownfield sites. Current approaches to measuring residential density are not ensuring high quality design on brownfield sites. To improve design quality, density policy should move away from unsophisticated measures such as dwellings per hectare to a multivariable measure of density. These types of measures can ensure the uses and types of housing delivered on brownfield land are more responsive to the needs of communities and ensure that design relates better to its surrounding environments.

Many brownfield sites in England are of a large scale and need to be planned in a comprehensive way. To encourage exemplar neighbourhood design on large-scale sites, frameworks for participatory planning, custom- and self-build housing development and the ability to design development that reduces the use of the car, need to be improved.

To better enable development on small-scale brownfield sites in urban areas, public sector bodies need to register suitable land for development and be required to work with housing developers to enable reuse. A flexible approach to space standards, accompanied by strict building regulations to ensure quality, is also required if the full potential of these small-scale urban sites is going to be realised.

7.0 Recommendations

The research conducted for this report leads CPRE to make the following conclusion for policy and practice at local and national levels:

1. Reform and improve the data collection and analysis of brownfield sites in order to inform the future uses and housing mix in new development.
2. Implement a multi-variable measure to better prescribe suitable guideline development densities and use mixes in urban areas.
3. Create structures to improve participatory planning, enable custom- and self-build housing and prioritise development that discourages car use on large-scale brownfield development sites.
4. Increase and improve development on small-scale brownfield sites by creating a register of publicly owned sites that are suitable for development, requiring public sector bodies to enable development on these sites and employing a flexible approach to space standards.

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- influencing national and local planning policy relating to housing
- promoting appropriate brownfield development
- promoting examples of sustainable urban and rural development and good practice
- influencing the approach of the Government towards the countryside and planning

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