ANOTHER STOREY: THE REAL POTENTIAL FOR ESTATE DENSIFICATION

Kat Hanna
Ann Oduwaiye
Pete Redman

ANOTHER STOREY: THE REAL POTENTIAL FOR ESTATE DENSIFICATION

Kat Hanna, Ann Oduwaiye, Pete Redman

Published by *Centre for London*, September 2016

Published by:
Centre for London 2016

1 Plough Place
London EC4A 1DE
T: 020 3757 5555
hello@centreforlondon.org
www.centreforlondon.org
Company Number: 8414909
Charity Number: 1151435

Typeset by Soapbox, www.soapbox.co.uk

Centre for London is a politically independent, not-for-profit think tank focused on the big challenges facing London. Through its research and events, the Centre acts as a critical friend to London's leaders and policymakers, promotes a wider understanding of the challenges facing London, and develops long-term, rigorous and radical policy solutions for the capital. It looks for support from a mixture of private, voluntary and public sector funders and works collaboratively with its supporters, drawing on their experience and expertise. Launched in 2011, the Centre is quickly developing relationships with sister organisations across the globe. Find out more about our work at www.centreforlondon.org.

Centre for London is a registered charity and a company limited by guarantee. Company Number: 8414909. Charity Number: 1151435.

ABOUT THE AUTHORS

Kat Hanna
Kat is Research Manager at Centre for London. Her research interests include housing, technology and the geography of innovation. Kat has worked in London politics and policy for the past five years, and started her career as an intern at Centre for London. She rejoined the team after working as a parliamentary researcher and as Public Affairs Manager at London Chamber of Commerce.

Ann Oduwaiye
Ann is Research Intern at Centre for London. She is studying for a Master's degree in City Design and Social Science at the London School of Economics and Political Science. She also has a BA degree in Architecture from the University of Cambridge. In her final year, she spent time in Detroit, Michigan, researching housing and inequality. Ann is a lifelong south Londoner, and has previously worked as an architectural assistant, as well as an administrator. She has also volunteered for a number of charitable institutions in London. She is interested in equity in relation to housing, transport, and the public realm.

Pete Redman
A Centre for London associate, Pete Redman has worked in social housing for 40 years. He has led housing associations and local authority services in London, Leeds and Birmingham, including the Notting Hill Housing Group, where he pioneered the development of mixed-tenure communities and championed the debate for higher-density development in central London in the 1990s. He is an Honorary Fellow of RIBA, and was Chair of the RIBA Housing Client Forum, Chair of the London Housing Federation, and a founder member of Design for Homes. Pete is currently engaged in housing policy development, and is a member of the Housing Studies Association and

the Highbury Group on housing supply. His research concentrates on housing market dynamics, house price volatility, and the role of social housing within the overall housing market.

ACKNOWLEDGEMENTS

We are grateful to all those who have given us their expert advice and feedback on the project, and in particular our Advisory Group: Gareth Crawford, Head of Development at Home Group; Dominic Curran, Senior Policy Officer at Greater London Authority; Michael Hill, Group Procurement Director at Countryside Properties; Anne Power, Professor of Social Policy at the London School of Economics and Political Science; Andy von Bradsky, Consultant Architect at von Bradsky Enterprises; and Kate Webb, Head of Policy at Shelter.

This project would not have been possible without the generosity of our sponsors, and we would like to thank Countryside Properties and Home Group for their support.

Our thanks also go to our colleagues at Centre for London, particularly to Richard Brown and Ben Rogers. We would like to thank our former Centre for London colleague Brell Wilson for his invaluable support in the early stages of analysis. The views in this report are nevertheless solely those of the authors, and any errors and omissions remain our own.

FOREWORD

Countryside Properties and Home Group both have a very long track record of working in partnership with local authorities to regenerate housing estates. Between us we are currently working on a very substantial programme, with an established and growing number of joint ventures between our organisations.

In the last few years the focus of estate regeneration has widened to include the contribution that such projects can make to increasing housing supply. The current London Housing Strategy, for example, highlights the "vast development potential in London's existing affordable housing estates".

Despite this interest in estate densification, we were concerned that information on the physical capacity of London's housing estates to generate additional homes and the likely financial viability of such schemes was lacking. We were therefore delighted to support Centre for London's proposal for a project examining this issue in more detail.

It should be emphasised that the objective here has been to assess the *theoretical* contribution that London's local authority housing estates could make to increasing the housing supply. We are very aware that no successful densification project can take place without the political will of the local authority, the necessary financial resources, and the support of existing residents. We believe that, when done well, estate densification projects can be hugely successful and beneficial for existing residents, local businesses and the local authority. We very much welcome this report's focus on the need for clarity and transparency regarding the financing of estate densification projects – and we equally welcome the GLA's decision to produce a guide for London's local authorities on the principles of successful estate regeneration.

We are encouraged by the first part of this report which indicates a physical capacity to provide between 80,000 and 160,000 additional new homes. This could

make a significant contribution to London's housing stock – up to 20 per cent of London's annual additional housing target.

The findings of the second part of the report are more challenging, and highlight the extent to which national policy can make estate densification a highly complex and increasingly costly process. Indeed, it is clear that the densification of many low-density estates in the outer suburbs will not be possible without public subsidy.

If there is just one conclusion to draw from this very valuable report, it is that the enormous potential of estate regeneration can only be optimised by looking very hard at the financial mechanics of delivering it. This means looking in more detail at how such schemes can be funded, whether through cross-subsidy, including local-authority-led joint ventures, or public funding.

We are confident that this report will make a meaningful contribution to the policy debate, and form the basis of further discussions to come.

Richard Cherry
Chief Executive, Partnerships, Countryside Properties

Mark Henderson
Chief Executive, Home Group

EXECUTIVE SUMMARY

London is in the midst of a housing crisis, as the city faces a need for some 49,000 additional homes a year. This shortage of homes is intrinsically linked to a shortage of land, particularly land that is developable, deliverable, and close to transport infrastructure. Building on the green belt is not supported by government or the Mayor of London, and brownfield land is in limited supply. Hence, densification of existing land uses will play an increasingly important role in coming years.

Given the single land ownership of housing estates, several reports have suggested that densification of these estates – through infill, or demolition and rebuilding – could be an important source of new capacity. Our report seeks to assess the potential and the financial viability of such densification projects.

Our research began with an analysis of large housing estates in four London boroughs: Lewisham, Barking and Dagenham, Waltham Forest, and Hounslow. Using census data to identify areas with a concentration of social tenants, we cross-referenced these with various maps to identify housing estates of over 200 homes or more. This process identified some 17,500 homes across 36 large estates. We then calculated the density of these estates, and compared this to surrounding ward areas and London Plan density guidelines.

With the exception of those in Lewisham, large estates were as dense as their average ward densities. This is not say that these estates constitute the best possible use of land, but for suburban estates in particular, density levels are not significantly lower than surrounding areas.

Using the London Plan density guidelines, we then calculated the potential for estate densification by turning up the dial to either 'urban' or 'central' levels. *We found that three out of the four boroughs could gain*

an uplift of at least 50 per cent by increasing the density of large estates to SRQ 'urban' levels.[i]

Densifying estates up to the SRQ 'central' setting would produce substantial housing gains in all boroughs except Waltham Forest, which already has an average large-estate density double that of Lewisham. The other three boroughs have the potential to double their current estate housing capacities – in fact, estate densification could increase Barking and Dagenham's total housing stock by 10 per cent.[1]

We then used these findings to generate an estimate of the number of additional homes that could be delivered across London. *We estimate that densification of large estates has the potential to add between 80,000 and 160,000 homes to London.* Given the long lead time of such projects, and based on recent outputs, *we estimate that this could add between 4,000 and 8,000 homes to London each year – up to 20 per cent of London's annual additional housing target.*[ii, 2]

London's housing shortage needs to be tackled strategically, and densification also needs to take into account design quality and social considerations. One must also take into account that introducing 'central' level densities to estates could severely change neighbourhood characteristics, particularly in parts of Outer London.

Design is not the only challenge. In order for estate densification to deliver additional homes while ensuring that the supply of affordable housing is maintained or increased, it is also essential that projects are financially viable – that is, that they can cover their costs. The

i. The Sustainable Residential Quality (SRQ) density matrix forms part of the London Plan's policy on the density of new housing, setting density ranges on the basis of public transport accessibility and neighbourhood setting (defined as 'suburban', 'urban' and 'central').
ii. This is based on the figure of 42,000 new homes a year, for the next 20 years, as stated in the Mayor's Housing Strategy (prepared under the previous Mayor, Boris Johnson). These estimates do not include homes gained through infill on estates.

second part of this report uses financial modelling to examine the financial viability of estate densification projects, and the principal factors that influence this.

Using a scenario based on costs and values for a two-hectare estate, with 180 dwellings remodelled into 360 dwellings as our base case, our sensitivity analysis shows that by far the most influential factors are the following:

1—The before- and after-values of the housing stock.

2—The potential for increase in density.

3—The tenure mix at the beginning and at the completion of the regeneration.

The effects of these variables are summarised below:

Initial housing values	High initial values reduce potential viability. If stock is in good condition and meets modern standards, the cost of buyback of dwellings sold through Right to Buy or other disposals will increase.
Final housing values	High final values increase potential viability primarily due to higher value achieved through market sales, but also through the improved value of the affordable housing created (and Direct Rent Subsidy[iii] available on it).
Increase in density	We have taken as a given that projects will lead to an increase in absolute numbers of affordable housing units on the estate. Density increases, beyond that minimum, increase viability, by delivering a greater number of dwellings that can be sold on the open market, and potentially releasing resources for affordable housing subsidy, investment in local services, and environmental improvements.

iii. Direct Rent Subsidy is the difference between the social rent and market rent values of a property, which is made up through government subsidy and afforded to the social housing provider.

Tenure mix at the beginning	Where dwellings have been sold prior to the Initial Demolition Notice, usually through Right to Buy, this decreases viability owing to the cost of buying these back and compensating owners. Our base case assumes the London average of 40 per cent of the estate in private ownership: higher in suburban estates of semi-detached housing, and lower in Inner London apartments.
Tenure mix at completion	High proportions of affordable housing decrease viability, owing to the higher subsidy required through developer obligations (S106) and the lower number of market housing units with which to generate this subsidy.

We calculated that the base case project could double the number of homes on site, increase the asset value of the estate by three to four times, and increase household spending power in the neighbourhood by four to five times. This provides benefits to the local economy, and also to the local authority (on the basis of increased council tax revenue). However, once projects begin to deviate from the base case in terms of starting values, densities and current tenure mix, the complexities of estate densification become apparent. Our modelling shows, for example, that the gains to a local authority of densifying a low-density suburban estate are far lower than the preparation costs – in particular, the costs of buying out those who have bought their property through Right to Buy.

Summary of recommendations:

• The analysis in this report has highlighted the need for more accurate information regarding the location and density of London's estates.

– A full analysis of where London's existing estates are, and their current densities, should be used to inform the next iteration of the London Plan. The Mayor should use this analysis to identify the potential for estate densification.

• Our analysis has also shown that the capacity for estate densification is often overstated, both in terms of the number of additional units that could be gained, and the density of existing estates compared to their surrounding areas.

– Densification should not stop at the edge of housing estates. We recommend an approach that combines densification both of estates and other uses such as privately owned residential land and publicly held land such as car parks. Estate densification also needs to be carried out in a way that integrates the densified site with the surrounding urban fabric, adopting a mixture of block types and increasing in density nearer to urban centres and transport hubs.

• Our modelling has shown that in a number of cases, estate densification is not viable, particularly in low-density suburban areas.

– Where suburban, low-density estates are densified, this should be supported by a programme of gap funding if necessary. This could be through a combination of central government grant, housing association cross-subsidy, private finance through stock transfer, and local authority contribution.

• Our modelling has shown that there is a clear difference between the amount of compensation given to tenants and that given to owners, and that no one household will experience the same range of impacts.

– Home Loss Payments should be increased to ensure the fair treatment of tenants in the demolition and densification process. There may

also be a case for varying the amount depending on the length of time in the dwelling; its value; and whether the move is outside or within the estate.[iv]

iv. There also needs to be some flexibility in how such a payment is made. Such payments need to avoid causing e.g. corresponding reductions in benefits, but they should also be prevented from being used to pay off debts, or to assist with a house purchase combined with other subsidies such as Help to Buy. They should also account in some way for the value of Direct Rent Subsidy given up, if a tenant is not rehoused into affordable housing.

1
INTRODUCTION

For the past 100 years, London's housing estates have made a vital contribution to London's housing stock. This is evident not only in the capital's built form, but also in the role played by estates in providing housing that is affordable.

London is in the midst of a crisis, as the city is faced with a shortage of over 60,000 homes a year.[3] This shortage of homes is intrinsically linked to a shortage of land, particularly land that is developable, deliverable, and close to transport infrastructure. Building on the green belt is not supported by government or the Mayor of London, and brownfield land is in limited supply. Hence, densification of existing land uses will play an increasingly important role in coming years.

The potential of estate densification, in particular, has been the subject of much discussion – and in many instances, enthusiasm.

There is also vast development potential in London's existing affordable housing estates. There are over 100 estate regeneration projects underway at various stages across the capital, comprising a pipeline of over 35,000 new and re-provided homes over the next ten to fifteen years.[4]

Estate densification is appealing from a policy perspective due to the ability of estates to provide land for redevelopment. Many estates are the only remaining parts of the capital offering land that is largely owned by local authorities. The fact that this land has already been used for housing means that issues such as land remediation or contamination rarely occur, and sites are often well served by existing transport links. A number of reports have argued that despite their often excellent locations, many of London's estates are not using land in the most efficient way. Density is often low even when buildings are high, with tower blocks surrounded by 'dead space' such as utility areas, car parking and poor-quality green space. As such, London's housing estates could be a valuable publicly owned development opportunity at a time of housing shortage.

Building on many reports that have set out the theory behind the densification of London's estates, this report seeks to understand the potential for estate densification in more detail by addressing the following questions:

- What do we know about the existing density of London's estates, and what capacity do they have for densification?

- 'What factors affect the public and private sector costs of estate renewal, and what does this mean for the financial viability of estate densification?'

The first question will be addressed using analysis of large estates across four London boroughs, assessing the relative density of large estates in comparison to their surrounding wards and borough neighbourhood characteristics. The second will be framed by an analysis of how the costs and benefits of estate development are shared between the public and private sectors.

Densification and Regeneration

From the outset, it is worth defining the primary terms of this analysis:

Densification is the process by which the number of dwellings per hectare is increased. This can be accomplished through a number of means, including infill, and demolition and rebuild.

Regeneration refers to a more comprehensive transformation, often associated with social programmes and outcomes, as well as physical redevelopment. While estate regeneration does not necessarily always include demolition and rebuilding, the term is now frequently associated with such forms of comprehensive redevelopment. For the purposes of this report, we will use the term 'redevelopment', which covers the spectrum of intervention from incremental infill to demolition and rebuild. However, for the purposes of modelling the capacity for estate densification, we will focus on the latter.

Infill Development

Estate refurbishment projects have often been accompanied by building on parts of the estate land which are ineffectively used, for example vacant garage sites. As an option for redevelopment, infill can be desirable as it involves less upheaval and rehousing cost compared to estate demolition and rebuild. As such, many councils (and housing associations) have scoured their neighbourhoods for spare land in their ownership for infill development.

However, the remaining opportunities for further, less disruptive, infill at higher densities are relatively low. Even where they exist their contribution to intensification may not be particularly significant. An estate with 10 per cent of its land available for new housing which is built out at double the density of the existing housing will only increase the average density by 10 per cent.

Though infill has unlocked additional housing supply in recent decades, problems can arise for those estates with older buildings which might be coming to the end of their useful life. The recent infill developments will have many decades of future use and these may restrict the best use of the surrounding land to maximise housing numbers.

A number of policy initiatives focusing on estate regeneration base their case not only on the inefficient use of land found on many estates, but also on the poor condition of estates and the socio-economic problems associated with them.

Some estates have, from time to time, come to be seen as areas of concentration of social problems, from poverty and worklessness to poor health and high crime rates. There is also evidence that many estates, both in London and other cities, have an increasing concentration of deprivation and socio-economic exclusion that is often linked to 'residualisation'. This is the process by which estates have come to house only low-income households, often due to a combination of policy, social and economic factors, and in contrast with the mixed-income communities that were envisioned when these estates were first built. In 1979, around 20 per cent of the richest 10 per cent of households in the UK lived in social housing. By 2004–2005, this figure was barely one per cent. The proportion of those in the richest 30 per cent living in social housing also dropped by around 20 per cent.[5]

This process of 'sorting' is also linked to the impact of Right to Buy, which saw a number of those who purchased their homes move out and sublet them, leaving behind lower-income households. Another factor that has contributed to residualisation is the need for local authority allocations policies to reflect the high demand for (and short supply of) subsidised housing. As a result, criteria are increasingly focused on those in the most extreme need, rather than on entitlement claims that reflect local roots and social/economic contribution.[6]

There is further evidence that indicates that levels of economic exclusion are particularly bad on estates lacking access to transport, amenities, and employment opportunities. This serves to entrench barriers to labour market entry, and contributes to perceptions of certain estates as undesirable places to live. The need to address this social and economic exclusion features in many of the discussions surrounding estate densification and regeneration. In an article for the *Sunday Times*, Prime Minister David Cameron argued that some housing estates are "actually entrenching poverty in Britain – isolating and entrapping many of our families and communities", with the worst estates featuring "brutal high-rise towers and dark alleyways that are a gift to criminals and drug dealers".[v]

While this report will not focus on the design of estates, and the bearing that this may or may not have on the social outcomes of its residents, it is important to distinguish between the case for estate redevelopment as a source of public land that can provide much-needed housing, and the motivation to address the socio-economic issues associated with many of London's estates. As identified in *Altered Estates*, a recent report

v. The link between estates, deprivation, crime, and anti-social behaviour is a long-standing and highly contested feature of the debate. In *Utopia on Trial*, British academic Alice Coleman highlighted the negative effects of estate design, including the tendency for walkways to become "escape routes for hooligans and criminals" and for play areas to attract anti-social behaviour and vandalism.

by four leading London architecture practices, there is no reason why estate renewal projects cannot do both.[7] It is possible, although not necessarily straightforward, for estate renewal to add to London's housing supply through densification, while at the same time improving the housing conditions for existing tenants. However, not all estates have potential for densification, and those that do are not necessarily in need of renewal to improve conditions for tenants.

Not without controversy – why getting the figures right matters

A number of local authorities and developers have carried out estate densifications that are deemed to have been successful in improving living conditions for residents, improving the public realm and amenities, and in adding to London's housing stock.

Rayners Lane, Harrow: Tenant engagement and delivery on commitment

The 2016 LSE Housing and Communities Report analysed the social impact of the redevelopment of the Rayners Lane estate in Harrow.[8] In 2002, tenants unanimously voted in favour of its stock transfer from Harrow to Home Group. Home commenced redeveloping the estate in 2003, with the final phase due to be completed in 2018.[vi]

LSE Housing and Communities highlighted that Home, as a social landlord acting as the developer, had a significant social impact on Rayners Lane. Home focused on existing residents and social rent homes throughout the redevelopment process: for example, 370 tenants and stakeholders were interviewed during the planning process, and this heavily influenced the neighbourhood plan. The Beacon Community Centre was also central to this new plan and has begun hosting a range of activities and services for Rayners Lane residents. Home have set up the Rayners Lane Estate Committee, which is composed of a range of stakeholders. The committee oversaw the redevelopment, and now takes care of its management.

539 existing homes on Rayners Lane were demolished and replaced with 800 new homes of mixed tenures, and 434 existing tenants were rehoused in new social rent homes before construction started on all other tenures. 40 additional social tenants have moved to the site.[9] Government subsidies gave Home Group the freedom to build their desired number of social rent homes, without relying on cross-subsidy from private sales.

vi. Home Group, information retrieved August 2016.

The LSE report analysed data from interviews with stakeholders, Home's quality of life survey, and their own tenant surveys. It found that 70 per cent of all residents are now satisfied with living on Rayners Lane, with large rooms being noted as a great advantage for residents. Researchers also found that residents still have key concerns regarding parking on the estate, as well as personal issues such as finances and health. Using the benefits model designed by the Housing Associations Charitable Trust (HACT), LSE Housing and Communities converted their survey findings into monetary values. The social return on Home Group's investment was estimated at a ratio of 10:1 – net social benefits in return for Home's current investment in the ongoing maintenance of the estate. This calculation however does not include the cost of demolition and rebuilding.

However, other projects have been more controversial. While each estate redevelopment is unique, the most frequent criticism is that estate renewal leads to a net loss in social housing and an increase in market housing. This is sometimes attacked by opponents of estate redevelopment as the 'social cleansing' of working-class tenants, through the loss of social housing (by no means a feature of all estate densification projects), disruption, and the decanting of tenants. Such claims have featured heavily in a number of high-profile campaigns and media features, such as the 35 per cent Campaign and Focus E15, both of which have formed in response to specific estate redevelopment projects.

Balfron Tower, Tower Hamlets

The Balfron Tower refurbishment is a joint venture scheme involving Poplar Housing and Regeneration Community Association (Poplar HARCA), Telford Homes, and Londonewcastle. It is part of the wider redevelopment of the adjacent Brownfield Estate in Poplar. The Tower is Grade II* listed, and was built in 1967. In 2007, residents voted in favour of a stock transfer from Tower Hamlets council to Poplar HARCA. At the time, approximately 75 per cent of all homes in the Tower were for social rent; the rest were Right to Buy leasehold properties.[10] As part of the stock transfer, Poplar HARCA were legally required to refurbish Balfron Tower. The transfer agreement also contained a provision for Poplar HARCA to sell 130 properties in Balfron Tower and neighbouring Carradale House to cross-subsidise the refurbishment works.[vii]

Poplar HARCA decided to commence with the decant and refurbishment of Carradale House in 2008. In 2014 it was confirmed that Balfron Tower would be a leaseholder-only block, and no social rent tenants had the right to return.[11] The sale of Balfron properties has allowed Poplar HARCA to build and renovate over 500 social homes; they have also made significant investments in the Brownfield Estate and Carradale House. 71 out of 102 social rent tenants were rehoused in other Poplar HARCA properties nearby;[12] the majority of these homes were new build and often larger than residents' former homes. Other former tenants moved to social rent properties elsewhere in Tower Hamlets.

Property guardians are now living in Balfron Tower as part of the decant phase.

One response to the controversy surrounding estate regeneration is to focus on the process of community engagement and consultation. The rationale behind this is that better consultation early in the process – and greater transparency around the aims of renewal – can build trust between communities, local authorities, housing associations, and developers. This topic has been covered in depth in Centre for London's *STOPPED* report.[13]

vii. Poplar HARCA, information retrieved August 2016.

2
AN OVERVIEW OF SOCIAL HOUSING IN LONDON

London's estates not only play a vital role in providing social housing, but also embody a rich heritage of social progressiveness and architectural innovation. A number of London's estates have gained iconic status, such as the Balfron Tower in Tower Hamlets and the Alexandra Road estate in Camden. Much has been written on the rich history of London's social housing estates, and rather than provide a detailed account, this chapter will set out key milestones in the development, design and renewal of housing estates in London.

Timeline of Social Housing Milestones and Policies

London's First Estates
London's first estate, funded by the philanthropist George Peabody, was completed in Spitalfields in 1864. A number of estates were built by the Peabody Trust in the late 1800s and early 1900s, including at Westminster and Bethnal Green. Other notable philanthropists who built some of London's early estates include Sir Edward Guinness and Octavia Hill. London's first state-funded social housing, the Boundary Estate, was built in Shoreditch in 1890.

The Inter-War Years
The Housing and Town Planning Act was passed in 1919, and is commonly associated with the 'Homes fit for Heroes' initiative, which aimed to pick up the pace of construction to provide homes for returning soldiers. These inter-war estates were often characterised by a low-density suburban design (often as low as 12 houses per acre) on greenfield land, or small blocks of four to six storeys built on slum clearance land in more central locations, such as Cressingham Gardens in Lambeth and Excalibur Estate in Lewisham. Estates built following slum clearance tended to have much higher densities.

The Post-War Estates
After almost a million houses were destroyed or damaged during the WW2, Labour and Conservative

governments alike sought to rebuild housing across London and other cities. In the first ten years following WW2, local authorities were responsible for building some 75 per cent of homes. In contrast to the suburban densities of many pre-war estates, the post-war estates placed more emphasis on the town, the 'neighbourhood unit', and mixed development, including maisonettes, point blocks and two-storey homes. Many of these design principles featured in the 1944 Dudley Report and 1944 Design Manual, which promoted densities of 120 homes per acre in central locations and 30 homes per acre in suburban locations. Examples of such estates in London include the Somerfield Estate in Hackney, Churchill Gardens in Westminster, and the Alton Estate in Roehampton.

The 1954 Housing Repairs and Rent Act added an emphasis to slum clearance as well as the post-war rebuild.

The 1956 Housing Subsidies Act introduced subsidies for each storey built above six storeys in a bid to stimulate the construction of flats, particularly in inner cities where higher densities were considered necessary to replace homes lost through slum clearance. Industrial methods of 'systems building', associated with both speed of erection and construction quality, were encouraged in order to meet ambitious housing targets.

The Retreat from High Rise

The 1967 Housing Subsidies Act abolished the subsidies awarded to developments for each storey above six storeys. This followed a range of government reviews that decried the "inhuman scale" of many industrially built developments, and structural problems compounded by water penetration. The 1968 gas explosion at Ronan Point, a 22-storey block in Newham, in which four people died, raised further concerns about the quality of some industrial construction methods.

The 1974 Housing Finance Act reduced council housing subsidy and replaced controlled rents with 'fair' rents – in effect a rent increase. It also legislated

for a major increase in the funding provided to housing associations, shifting the responsibility for developing and maintaining council houses away from local authorities and towards housing associations.

The 1979–1995 Priority Estates Project (PEP): A live experiment in which 20 estates, prioritised on the basis of their problematic design and inadequate management, were granted localised estate-based management in an attempt to improve conditions. A strong emphasis was put on tenant engagement, local housing management, and on training organisations and individuals in the hands-on skills required.

The 1980 Housing Act and Right to Buy: This Act enabled council tenants who had lived in their homes for a minimum of three years to buy their property at a discounted rate (33 per cent discount of the market price for a house and 44 per cent for a flat, with tenants of over 20 years being eligible for a 50 per cent discount). The impacts of Right to Buy have been widely debated, with major outcomes including an increase in home ownership, and the eventual transfer of council homes to private landlords.

Estate Redevelopment

The 1985 Department of Environment Estate Action (EA) initiative: This initiative aimed at developing partnerships between national government and local authorities to invest in the physical upgrading of estates while improving management and maintenance. This was followed by the establishing of Housing Action Trusts (HATs) in 1988. These non-departmental public bodies (not dissimilar to Urban Development Corporations) aimed to take over local authority housing within a designated area in order to improve the housing stock and the quality of the environment. Emphasis was also given to increasing diversity of tenure in areas with high concentrations of council tenants. Three HATs were established across London:

1—Stonebridge, in Brent.

2—Tredegar, Morpeth and LeFevre estates in Tower Hamlets.

3—Oliver Close, Boundary Road, Cathall Close and Chingford Hall in Waltham Forest.

The 1994 Single Regeneration Budget: the SRB combined a number of previously existing programmes that focused on economic, physical and social regeneration, including housing programmes. By consolidating initiatives from a range of government departments, the SRB aimed to make it easier for local areas to secure resources for regeneration. An estimated £26bn was spent between 1994 and 2001 – £5.6bn from the SRB itself and the remainder from local authorities, EU funds, and the public and private sectors.[14]

The 1998 New Deal for Communities had a strong focus on transforming neighbourhoods physically, as well as delivering social programmes, based on the experience of the 20 estates involved in the PEP (1979–1995, above). Housing and physical environment projects accounted for the largest share (32 per cent), followed by community (18 per cent) and education projects (17 per cent). Four local authorities in London took part in the first round of partnerships in 1998, and a further six in the second round in 1999. Notable examples include the Aylesbury Estate in Southwark and the Ocean Estate in Tower Hamlets.

First established in 2001, the National Strategy for Neighbourhood Renewal aimed to address deprivation and inequality, through a combination of initiatives focused on the physical transformation of neighbourhoods (including the Neighbourhood Renewal Fund and Decent Homes Programmes) and others which targeted socio-economic outcomes (such as Sure Start).

The Estate Regeneration Fund (ERF) was announced in 2014, to fund 3 major regeneration projects.

In January 2016, Prime Minister David Cameron announced the intention to regenerate 100 of the country's most run- down housing estates with "attractive and safe homes". The announcement included a further £140 million fund and the setting up of an advisory panel. Co-chaired by Lord Heseltine and former Housing Minister Brandon Lewis, the remit of the panel is to look at how the "layout of estates can be best used to deliver more quality homes that people can buy and rent" and "ensure that there are strong protections in place for existing residents so they will always be given the right to return to their communities". It is worth noting that this fund was announced under the government's Life Chances initiative, with a focus on improving stock conditions and tackling deprivation and exclusion on estates, rather than creating additional units.

Market Estate, Islington

Built in 1967 and located in Islington, Market Estate was a housing estate made of 271 flats and maisonettes. The estate was designed as six large blocks around two courtyards – a classic post-war design with long internal access corridors and large external paved areas covering a 300-space underground garage.

In the 1990s, Islington Council invested to stop the estate's decline, but were unable to stem some of the crime and anti-social behaviour in the common parts of the estate. The council brought in Hyde Housing to manage the estate, and in the course or repairs, a young boy was killed by a steel door falling on him. After this incident, residents formed the Market Estate Tenants and Residents Association (METRA) and campaigned for its redevelopment.

In 2004, ownership was transferred to Southern Housing Group via a stock transfer to enable the redevelopment to take place. After lengthy consultation with the residents and the council, a decision was made to completely rebuild and regenerate the estate, now known as Parkside Place, at a total project cost of £70m. Each existing household has been rehoused in the new 421 home development facing the much improved Caledonian Park. The neighbourhood now contains a mix of private and social rent housing. The Group also invested £1m of the budget to create new play areas for children and new gardens. Three years on from completing the project, the outdoor facilities are well used and have an open and

welcoming feel.[viii] The Rayners Lane development was modelled closely on this scheme; both received major government subsidies, which is very rare nowadays.

This timeline illustrates the way that London's social housing estates evolved and were remodelled over the past 100 years. Despite their philanthropic origins, London's social housing estates owe much to state investment and intervention, particularly between and after the world wars. This changed in the latter half of the 20th century, with a shift of emphasis to physical and social conditions on London's estates, and on ensuring their integration with surrounding areas. More recently, policy has tended to focus on home ownership as a means of providing housing, and it is only in the past few years (and indeed mainly within London) that estate redevelopment has been linked to increasing the overall supply of housing. It is important to view these policies in the context of trends in supply and demand, in home ownership, and in attitudes towards government-funded housing. It is equally important that current policies are viewed in the context of potential uncertainty around investment and development following the vote to leave the EU in June 2016.

At the time of writing, there are indications that many developers are re-evaluating projects following the Brexit vote. While this does not mean that these projects will not go ahead, this hiatus, alongside a potential impact on labour availability and materials costs, may slow down London's development pipeline. There is little reason to believe, however, that the popularity of estate redevelopment as a means of increasing the housing supply will diminish.

The next chapter of this report sets out the potential for estate densification across London's housing estates.

viii. Southern Housing, statement retrieved August 2016.

3
SPATIAL AND DENSITY ANALYSIS

In this chapter, we set out the findings of our spatial and density analysis. This analysis aims at addressing the following questions:

1—How does the density of London's existing large estates compare to surrounding ward densities and borough densities?

2—How dense are London's existing large estates, and how does this density relate to the London Plan density guidelines?

3—How many additional units would be gained by bringing estate density up to 'urban' density levels?

4—How many additional units would be gained by bringing estate density up to 'central' density levels?

We identified a sample of four London boroughs: Barking and Dagenham, Hounslow, Lewisham, and Waltham Forest. When combined, these account for approximately 13 per cent of London's social housing stock (See Appendix A for the full list of sample borough criteria). We analysed the density of large estates – those comprising at least 200 dwellings. It should be borne in mind that these assessments were desk-based, and detailed design and planning work would be needed to translate indicative potential into reality, especially in order to achieve improvements in conditions for current residents as well as provision of space for newcomers.

Roughly 17,500 dwelling units have been identified in these boroughs' 36 large estates. Large estates in Barking and Dagenham, Lewisham, and Hounslow all had similar densities, with an average of 86 dwellings per hectare (dpha). However, large estates in Waltham Forest had an average density of 167 dwellings per hectare.

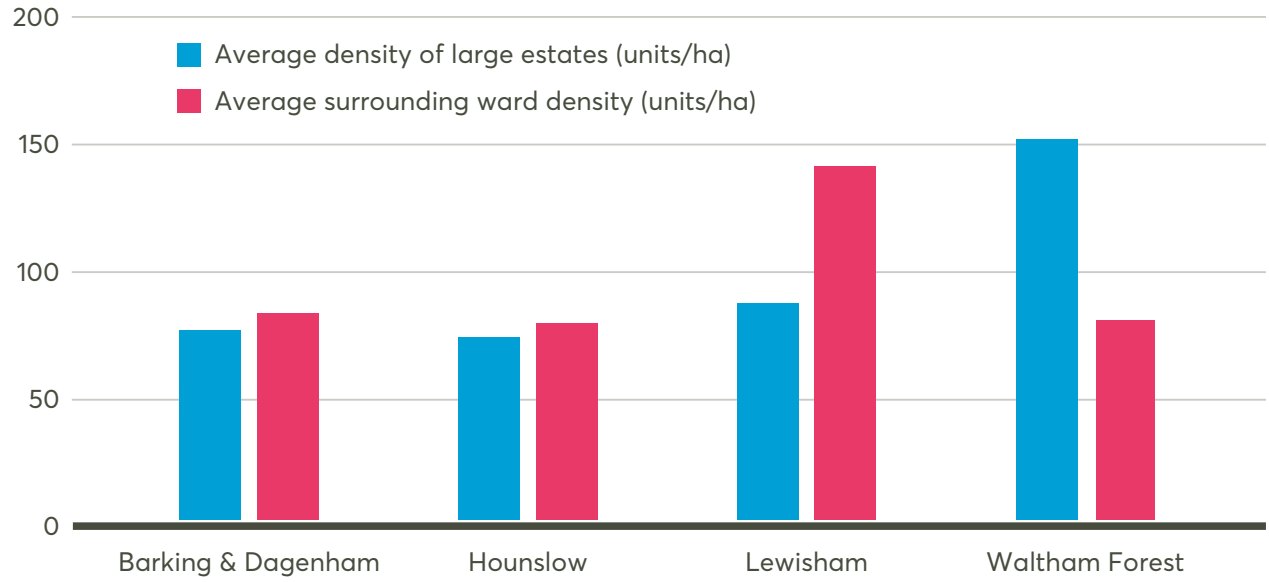
In all four boroughs, estates were generally denser than their average borough residential densities. With

the exception of those in Lewisham, large estates were roughly as dense or denser than the wards they are part of.[15] This is not to say that these estates constitute the best possible use of land, but to highlight that in three out of the four boroughs, the density of large estates is not significantly lower than that of the surrounding area.

Table 1: Summary of current capacities and densities

Borough	Total homes on large estates	Average density of large estates (dpha)	Average surrounding ward density (dpha)
Barking and Dagenham	4,668	83	90
Hounslow	4,379	80	86
Lewisham	6,415	95	155
Waltham Forest	2,106	167	88

Figure 1: Density comparisons of the four boroughs and their large estates



Comparing estates to London Density guidelines

The Sustainable Residential Quality (SRQ) density matrix forms part of the London Plan's policy on the density of new housing, setting density ranges on the basis of public transport accessibility and neighbourhood setting (defined as 'suburban', 'urban'

and 'central'). The SRQ matrix has been used to test the scope for estate densification beyond the levels of estates' surrounding wards.

The assessment reflects transport accessibility, but has made some assumptions in terms of setting. Planning guidance suggests that larger sites like these can, in any case, 'define their own setting'.[16] We used an average dwelling size of 3.1–3.7 habitable rooms per unit, allowing for a good proportion of family homes.

We estimated the uplift (in number of homes) that could be achieved on large estates in London if they were raised to the upper limits of both 'urban' and 'central' densities, at an average PTAL of 2–3. These densities are 145 and 210 dwellings per hectare respectively. The former is similar to the current average new build density in London of 153 dwellings per hectare.[ix] Our four-borough sample gives us an estate density average of 90 dwellings per hectare, showing there is scope for densification by both measures.

Scenario one: 'Urban' Density Settings

When comparing densities using the SRQ 'urban' setting, our modelling shows that there is some scope for increasing density. Densifying all large estates in the four sampled boroughs to the upper limit of the SRQ 'urban' level could theoretically provide around 10,000 new homes.

Densification of Hounslow estates could yield the largest number of new homes. Upwards of 3,500 homes could be added to these estates, which is an 81 per cent uplift on their current large estate capacity. Barking and Dagenham could gain almost as many homes. Lewisham has the potential to achieve a 52 per cent uplift, providing 3,300 new homes for the borough. Only 22 per cent of estates in Waltham Forest could be densified in this scenario, providing fewer than 500 new homes.

ix. Figure estimated from data found on London Development Database.

Table 2: Summary of densities and potential unit gain if large estates are raised to maximum 'urban' density

Borough	Average density of large estates (dpha)	Number of large estates that could be densified to maximum 'urban' density	Percentage uplift on large estate capacities in each borough if raised to maximum 'urban' density	Uplift, in number of homes, on large estates if raised to maximum 'urban' density (% borough total)
Barking and Dagenham	83	5 (71%)	74%	3,473 (5%)
Hounslow	77	7 (70%)	81%	3,526 (4%)
Lewisham	95	12 (86%)	52%	3,327 (3%)
Waltham Forest	167	1 (20%)	22%	456 (1%)

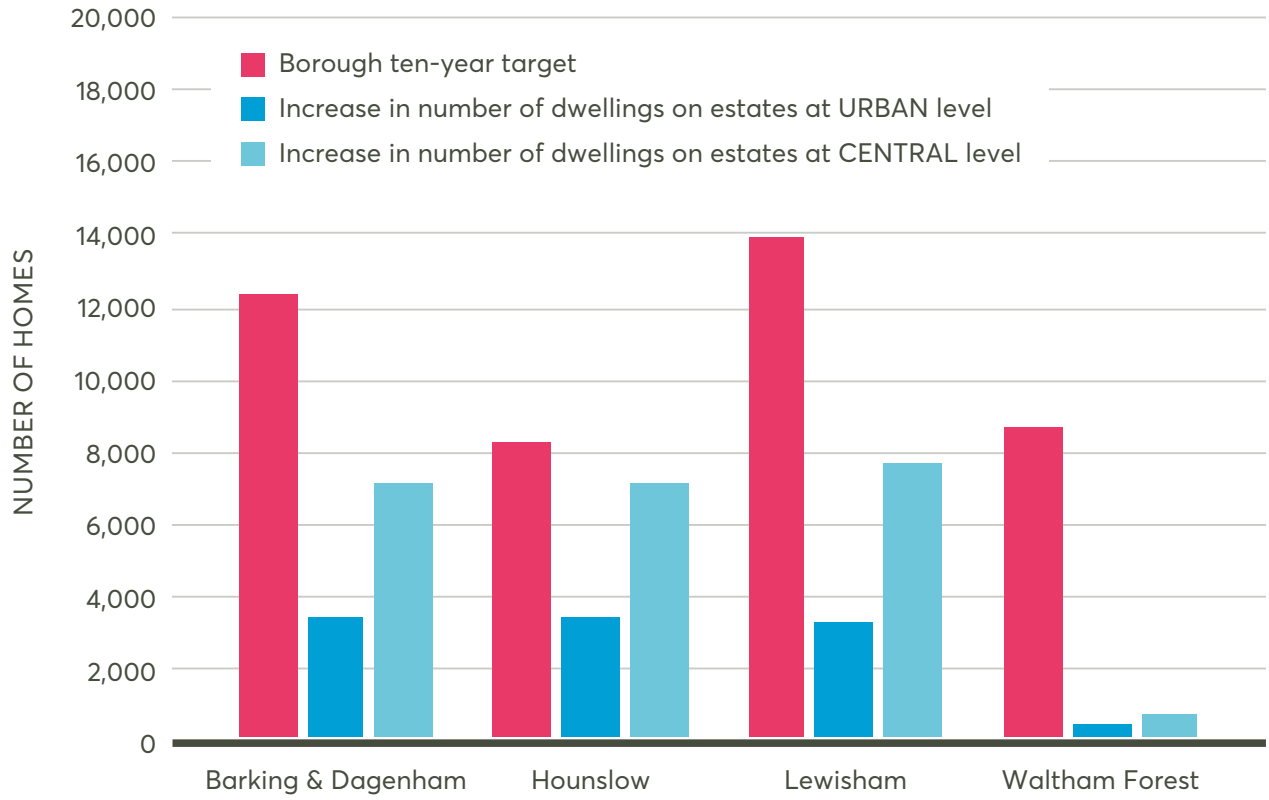
Scenario two: 'Central' Density Settings

Our modelling suggests that densifying estates up to the SRQ 'central' setting could produce substantial housing gains of over 20,000 new homes in the four boroughs, with Waltham Forest again providing the least scope. The other three boroughs have the potential to double their current estate housing capacities – in fact, estate densification could increase Barking and Dagenham's total housing stock by 10 per cent.[17] If we assume the current borough ratio of total homes to social rented homes is replicated with the additional homes on large estates, 13 per cent of the current local authority waiting list in Barking and Dagenham could be housed.[18] Figure 2 shows that at 'central' level, densification on estates in all boroughs except Waltham Forest could meet at least half of their boroughs' ten-year minimum housebuilding target, and could fulfil Hounslow's ten-year need almost entirely.[19]

Table 3: Summary of densities and potential unit gain if large estates are raised to maximum 'central' density

Borough	Average density of large estates (units/ha)	Number of large estates that could be densified to maximum 'central' density	Percentage uplift on large estate capacities in each borough if raised to maximum 'central' density	Uplift, in number of homes, on large estates if raised to maximum 'central' density (% borough total)
Barking and Dagenham	83	5 (71%)	153%	7,123 (10%)
Hounslow	77	9 (90%)	161%	7,070 (7%)
Lewisham	95	12 (86%)	120%	7,695 (6%)
Waltham Forest	167	1 (20%)	36%	750 (1%)

Figure 2: GLA housebuilding target by borough compared to potential uplift (in number of dwellings) on large estates if raised to maximum 'urban' and 'central' densities



Reaching a London figure

Using our four-borough sample, we have also produced an estimate for the additional homes that could be created through an increase in densification of large estates in London to both 'urban' and 'central' densities. Overall, our model has picked up between 20 and 40 per cent of socially rented housing in each borough.[x]

Using the values from Table 3, we calculated the total uplift (in number of homes) at both 'urban' and 'central' densities as a percentage of the total number of dwellings socially rented from the local authority in the four boroughs.[20] We then used this percentage to calculate the uplift on all London boroughs, using their social housing stock as a proxy for the number of housing estates they accommodate. We then calculated the London total uplift at both 'urban' and 'central' densities, and used those values as our upper and lower bounds respectively. A detailed methodology can be found in Appendix A.

We estimate that estate densification has the potential to add between 80,000 and 160,000 homes to London's large estates.

The speed at which a redevelopment project can proceed will depend on a range of factors, the most significant are: the time it takes an authority to decide on redevelopment, to rehouse the residents, and for the developer to build out at a rate the market can absorb. The base case we modelled takes 11 years from start to finish.

If all the large estates that are capable of densification were to be redeveloped then it would take at least 10 years for all of these projects to start. The last output of additional housing could be 20 years away. It is

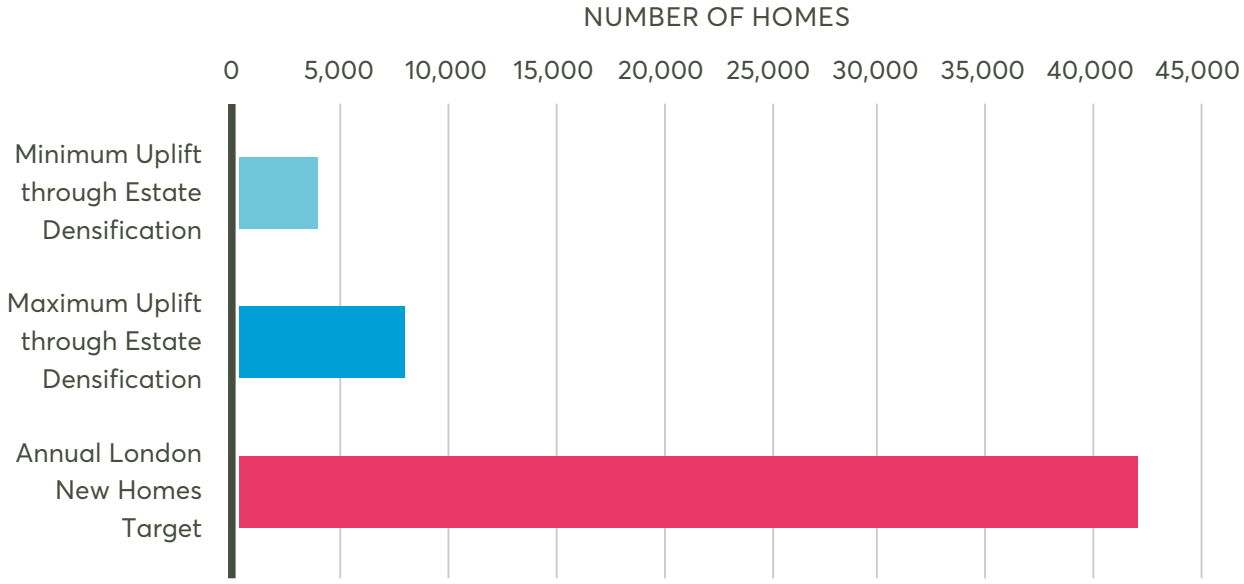
x. We are aware that the identified housing stock includes Right to Buy homes, but we have chosen not to factor the proportion of Right to Buy homes into the 'Number of dwellings rented from local authority', as we have found the ratio of Right to Buy to social homes is similar for all boroughs sampled (ranging between 50 and 60 per cent).

for this reason that we have divided the total potential of additional housing by 20 to get an approximate annual contribution to London's growth needs.

> *We estimate that estate densification has the potential to add between 4,000 and 8,000 homes to London's large estates each year – up to 20 per cent of London's annual additional housing target.*[xi]

It is also important to note that, for the majority of sites, the uplift potential will likely be closer to the lower bound, as 'central' densities will be reserved for town centres. Our London range does not include medium to small estates, although we do envisage that there will be more scope for densification, varying borough by borough, if they are included. We hope to cover this in more depth in a future Centre for London report.

Figure 3: The potential annual uplift range from densification compared to the GLA's yearly housebuilding target



xi. This is based on the figure of 42,000 new homes a year, for the next 20 years, as stated in the Mayor's Housing Strategy (prepared under the previous Mayor, Boris Johnson). These estimates do not include homes gained through infill on estates.

Urban opportunity

London's housing shortage needs to be tackled strategically, incorporating densification, good design, and social considerations. As has been shown, London's large estates have the potential to make significant contributions to this solution. Introducing 'central' (or even 'urban') level densities to large estates in Outer London boroughs would likely involve major changes to neighbourhood characteristics, and would need to be carefully considered in both the design and community consultation.

At the same time, it should be noted that less than half of all new developments in London are within their suggested density ranges, with 51 per cent of residential approvals granted to developments above their given density range.[21] In order for the SRQ matrix to become a more effective and more widely used development tool, it needs to take account of more sophisticated approaches to reflecting London's changing urban form, and the linking of density and transport. It is important that the matrix acknowledges the growing importance of densification, alongside new build, as a means of creating additional housing units in London.

Since many estates are not at a particularly low density (especially in comparison to surrounding areas), our analysis suggests that densification should not stop at the edge of housing estates. The reasons are twofold. First, a more integrated approach would forestall perceptions that estates are being 'singled out' for redevelopment. An approach that combines densification both of estates and other housing or land use can help open up the debate in terms of how we view different parts of London and the role that these areas should play in boosting the capital's housing supply. Second, estate densification also needs to be carried out in a way that integrates the densified site with the surrounding urban fabric, adopting a mixture of block types and an increase in density nearer to urban centres and transport hubs.

High Path, South Wimbledon: Designing for Context

In 2010 Merton Council transferred 9,500 homes to Circle Housing Merton Priory. Three neighbourhoods were identified for possible regeneration, and consultation with residents of High Path, Eastfields and Ravensbury began in July 2013. Following stock condition surveys, extensive community consultation and a residents' survey, Circle Housing decided to proceed with its regeneration proposals by preparing initial planning applications for the first new homes.

The Residents' Offer, published in May 2015, is central to those regeneration plans. It confirms the financial compensation and housing options available to social renting tenants, resident homeowners and landlords if regeneration goes ahead. This includes the guarantee of replacement homes for Circle Housing tenants and resident homeowners, and a right to return to their neighbourhood.

Built between the 1950s and 1980s, High Path currently comprises 608 homes including tower blocks, maisonettes, flats and terraced housing. The High Path master plan, produced by PRP Architects with input from local residents and stakeholders (including youth groups and schools), proposes around 1,670 new homes in total.

The placemaking principles underpinning the plans will deliver high-quality homes that are energy-efficient and adaptable, and which will make better use of existing space within a neighbourhood that is sensitive to heights and housing typologies. New retail and employment space will be built alongside extensive community facilities and a new urban park linking High Path to its surroundings. The phasing plan allows for existing residents to be rehoused without the need for temporary relocation.

Subject to planning, the transformation of High Path will begin in 2017 and is scheduled for completion in 2028.

The potential for housing growth in the borough is further strengthened by the arrival of Crossrail 2, and Circle Housing is committed to working with Merton Council to explore the potential for further densification of existing neighbourhoods.[xii]

As noted in Appendix A, our uplift estimation for London's estates should be used with caution. Alongside the methodological caveats to our approach, the numbers we arrive at are illustrative, and do not account for the financial viability of potential densification schemes. The next chapter of this report looks at the financial feasibility of estate redevelopment.

xii. Circle Housing, statement retrieved August 2016.

4
THE COSTS OF ESTATE DENSIFICATION

The previous chapter of this report set out the indicative potential for densifying London's largest estates. In this chapter, we look in more detail at the viability of such an approach.

Estate densification is a complex and long-term project. To be viable, the value of the redeveloped estate must exceed the original value of the estate plus the cost of change. If this is not the case, the project will need to justify some form of subsidy. These costs include the costs of demolition; of compensating and rehousing existing residents; of building new homes, infrastructure and public realm; of providing social infrastructure such as schools and health centres; of meeting other planning obligations; of paying interest on loans; and of providing a return for developers. Final values include the values of new affordable, market-rented and for-sale housing, which will be phased over the lifetime of the project. Other costs and benefits – such as those related to upheaval of people's lives and improvement of living conditions – are also important, although they are not typically included in viability assessments.

The Viability Model for Estate Densification

What follows are the results of a fully costed model of the demolition and rebuild of estates, setting out the key variables determining the costs and benefits of extensive estate densification projects involving demolition and rebuilding. This includes the costs and value of emptying, demolishing and rebuilding a London local authority housing estate. The model is based on the financial viability models used by planning authorities to assess developers' obligations for contributions to infrastructure and affordable housing. The main difference between this model and typical viability models is in the early consultation and decanting phases undertaken by a council before the site and empty buildings are handed over to a developer. Not all appraisals take account of all of these early costs. These include the substantial costs of rehousing, home loss, and compensation for the original tenants and

owners; the real economic cost to the local authority of managing the process, consulting with residents, providing alternative accommodation, and looking after a gradually emptying estate until it is handed over to the developer; and the cost of rebuilding. Table 4 lists the identified headings in full so that this can act as a checklist for future estate regeneration appraisals.

The model also recognises the long timescale involved from a decision to regenerate through to final occupation of all the new dwellings – in the base case this is estimated at 11 years.[xiii] In the base case, density has been doubled from the London average estate existing density (90 dpha) to 20 per cent more than the London average density of new residential developments of more than 50 dwellings completed in the last 5 years (153 dpha).

The model uses discounted cash flow techniques to bring all costs and sales values back to a single point in time, thus aiding direct comparisons between schemes of very different (and sometimes very long) timescales. The model also automatically populates the cash flow, primarily based on scheme initiation timescales, leaseholder buy-back rates, rehousing rates, and sales rates.

Our base case is based on London averages for costs and values for a two-hectare estate (or phase of a larger estate) with 180 dwellings remodelled into 360 dwellings, and including a small increase in the number of affordable homes. In all the scenarios we tested, we assumed that the numbers of affordable dwellings after redevelopment always exceeded the original number of affordable homes, in some cases by quite a margin. The new affordable dwellings mix can also be varied in the model. Our base case specified 30 per cent low-rent/social-rent (at 55 per cent of the market rent for those dwellings), 30 per cent Affordable Rent (at 70 per cent of market rents), and 40 per cent shared ownership.

xiii. Time periods, especially lead-in times, can be reduced by phasing.

The model assumed that there was no subsidy from central government, from within the council or from the rest of the social housing stock, no grant to housing associations, and no cross-subsidy from the existing stock or market activities of housing associations.

The resultant total scheme surplus or deficit for the whole period (from initiation and rehousing to occupancy of the completed redevelopment) is shown is shown in Table 4. This is compared to the residual land value of the developer's scheme. If the residual land value is sufficient to repay the council its full costs, then the whole scheme is considered viable. If not, then a deficit arises either because the developer's scheme is not viable (this was rare in our scenarios), or because the council's upfront costs were high, or both. In these cases, a subsidy might be justified.

Applying the Estates Viability model: the results

In other words, the value of the redeveloped estate must exceed the original value of the estate plus the cost of change. If this is not the case, the project will need to justify some form of subsidy.

In the base case, demolition and rebuilding would result in the following outcomes:[xiv]

- Double the number of homes on the estate.
- Make better use of scarce land for housing.
- Increase the asset value of the estate by between three and four times.

xiv. If the original dwellings are capable of being maintained and given a prolonged life at a reasonable cost, then rebuild is not justified, either on the basis of need for improvement or increased density, unless very high values can be obtained for the new market housing.

Table 4: Summary table for base case (£000's)

Council costs	
Scheme preparation	270
Formal resident consultation	72
Project management	90
Additional housing management costs	144
Community engagement	36
Alternative accommodation	7,001
Compensation to tenants	1,317
Buy back of market housing	18,000
Compensation to owners	2,979
On site security	162
Lost rental income	1,599
Debt repayment	2,376
Financing costs	4,390
Sub-total	**38,436**

Developer costs	
Demolition costs	1,350
Market housing construction and fees	48,705
Affordable housing construction and fees	20,865
Infrastructure obligations	8,569
Marketing and transaction costs	3,099
Financing costs	9,234
Risk and profit	23,250
	-
	-
	-
	-
	-
	-
Sub-total	**115,072**

Council receipts	
Nomination rights to new affordable housing	24,683
Infrastructure assets	5,999
Sub-total	**30,682**
NET COST TO COUNCIL	**-7,754**

Developer receipts	
Market housing sales	111,150
Affordable housing receipts	11,676
Sub-total	**122,826**
RESIDUAL LAND VALUE	**7,754**

The key variables in the Estates Viability model
A sensitivity analysis shows that by far the most significant variables affecting viability are, in decreasing order of magnitude:

- The before- and after-values of the housing stock.
- The potential for increase in density.
- The tenure mix at the beginning and at the completion of the regeneration.

The main effect of each of these key variables is described below:

Initial housing values	High initial values *reduce* potential viability. If stock is in good condition and meets modern standards, the cost of buyback of dwellings sold through Right to Buy or other disposals will increase.
Final housing values	High final values *increase* potential viability, primarily due to higher value achieved through market sales, but also through the improved value of the affordable housing created (and the Direct Rent Subsidy available on it).[xv]
Increase in density	We have taken as a given that projects will lead to an *increase* in absolute numbers of affordable housing units on the estate. Density increases, beyond that minimum, *increase* viability, by allowing a greater number of dwellings that can be sold on the open market, and potentially releasing resources for affordable housing subsidy, investment in local services, and environmental improvements.

xv. Direct Rent Subsidy is effectively the difference between the annual market rent that would have applied to the dwelling (without subsidy) and the actual rent charged (through low rent, social-rent or Affordable Rent). This difference is made up through government subsidy and afforded to the social housing provider.

Tenure mix at the beginning	Where dwellings that have been sold prior to the Initial Demolition Notice, usually through Right to Buy, this *decreases* viability owing to the cost of buying these back and compensating owners. Our base case assumes the London average of 40 per cent of the estate in private ownership: higher in suburban estates of semi-detached housing, and lower in Inner London apartments.
Tenure mix at completion	High proportions of affordable housing *decrease* viability, owing to the higher subsidy required through developer obligations (S106) and the lower number of market housing units with which to generate this subsidy.

Combinations of changes to these variables have a very significant effect both on viability of the new development and on the ability of the authority to recover its input costs. The model has a high sensitivity to changes in any or all of these variables. Market conditions also impact strongly on final sales values and are almost certainly going to vary during the long development period.

Other variables with moderately high sensitivity on viability are in reducing order of impact: build costs, sales rates, rent levels on affordable housing, and rehousing rates. Amongst the low-sensitivity variables are the form of development vehicle used (for example profit-sharing joint venture partnerships), the extent of sales into the Private Rented Sector, the extent of challenge from existing owners, and compensation to tenants for upheaval. We explore this last factor in more detail below.

It is likely that returns will be maximised with higher density increases on Inner London estates in higher value locations.

Suburban low-density estates

Given that many of Inner London's estates have recently been redeveloped, there is growing interest in the viability of densification in suburban, low-density estates – for example, at levels of 35–50 dwellings per hectare. This is particularly relevant in light of the need to increase the supply of housing, and the fact that little

redevelopment activity has been concentrated to date on the suburban low-density housing estates in Outer London. Applying the model to a suburban estate is a good way of highlighting the sensitivities demonstrated by the viability model. In the cases tested, the key variables were less favourable compared to the base case, for the following reasons:

- Initial values were closer to final values.

- Density increases of more than double were unlikely to be appropriate or acceptable.

- Right-to-Buy sales could represent 70 per cent of the dwellings, far more than the London average.

While the development phases are viable once the scheme is decanted, the gains for the local authority in residual land-value receipt from the new development (and other gains) were far lower than the preparation costs, and in particular the costs of buying out the owners.

Subsidy for gap funding low-density suburban estate regeneration

The difference in recovery of costs by the local authority on these estates could be expressed as a subsidy required, from other sources, for each new affordable dwelling. This could be in the order of an additional £100,000 per affordable dwelling provided.

The potential sources of subsidy are considered below:

A	**Sunk costs within the local authority**	This has clearly been a factor in earlier regeneration projects. Debt on the demolished dwellings is borne by the remaining council housing stock. Furthermore, the cost of alternative accommodation is often ignored. The additional project management cost, extra housing management, community engagement, rent losses, and the security costs of the emptying estate are all 'absorbed' within the Housing Revenue Account. In effect, reduced services to the rest of the council tenants subsidise the estate regeneration. There are clearly limits to the volume of regeneration activity that any local authority can bear in this way.
B	**Capital allocations**	In the past, major expenditure on estates has been supported by increased capital allocations by way of central government permission for extra borrowing. The interest payments on this debt were included in the Housing Revenue Account subsidy calculation. This route is no longer available following the HRA Settlement (2012). Debt levels are capped and where additional borrowing is possible this has to be supported by net rental income after operating costs.
C	**Stock transfer**	Stock transfers to housing associations enable the increased debt to be treated as private finance. But the level of extra debt that could be supported is well below the subsidy requirement of this case study for suburban estate regeneration.
D	**Social housing assistance**	In the last few years there has been a move away from housing association grants being used to subsidise affordable housing generated from developer obligations. The case for no grant with S106 is even stronger for affordable housing created through estate regeneration. There seems little point in grant-aiding a housing association to pay more to a developer so that that developer can pay more for the land from the public sector. It would be better to transfer resources within the public sector.
E	**Cross-subsidy**	Housing associations are becoming skilled at generating cross-subsidy from market activity, shared ownership sales and surpluses generated on historic stock. The sums are increasing each year. However, a great deal of this is used to cross-subsidise new housing development and is earmarked for current and coming investment programmes. There is, however, potential in the medium term future to apply some of this cross-subsidy to estate regeneration activity that increases supply.
F	**Central government grant to the authority**	There is potential for returning to a form of gap funding. In the past, mechanisms such as the Estate Renewal Challenge Fund, City Grant, Single Regeneration Budgets, and the New Deal for Communities all recognised the need for gap funding in regeneration. At present there is no such programme.
G	**Government loans**	The availability of government loans (such as the Estate Renewal Fund of £140 million announced in early 2016) may help in some cases where viability is weak and the developer is unable to raise development finance. However, the number of such cases will be small, as in most cases the developer will have sufficient creditworthiness and project collateral to borrow development period finance from the capital markets on similar or better terms. The availability of government debt (or government guarantees) may enable some marginal schemes to proceed.

Source A above looks increasingly unlikely in the future as councils are forced to account for their own housing costs and will need to undertake more comprehensive cost/benefit analysis of regeneration schemes. Councils may, however, be willing to invest in projects which improve the economy in their neighbourhoods.

Source B is no longer available. It is very unlikely that the HRA Settlement will be reversed.

A combination of sources C, E and F is more likely to be realistic.

If we are to make the most of the densification potential of low-density suburban estates, and the social and economic regeneration associated with these schemes, then there is a strong case for government, councils and housing associations allocating additional resources to these projects. This case is strengthened by the commitment of Mayor Sadiq Khan to a principle of no net loss of social housing through estate regeneration.[22]

Recommendation: We recommend that gap funding for a programme to support densification on low-density suburban estates could combine some or all of the following: central government grant, housing association cross-subsidy, private finance through stock transfer, and local authority contribution.

Home Loss Payment for tenants and owners

In addition to demonstrating the variables affecting viability, this model highlights the difference in compensation awarded to tenants and owners, and the impact that this has on the costs of estate densification.

The costs of upheaval for residents are met in two ways. Tenants and owners who have to move are eligible for Disturbance Compensation, and for Home Loss Payments. Home Loss Payments are a statutory compensation to tenants or owner-occupiers who have lived in their property for a minimum of twelve months

and are required to move home permanently as a result of redevelopment or demolition of their home. They are a compensation for the upheaval.

Disturbance payments are a compensation for the actual direct costs incurred by a displaced household. Items such as reasonable costs for removals, legal services, and disconnection/reconnection of utilities are reimbursed or met by the authority or association.

This study's financial modelling showed a distinct difference between the amounts received by tenants and owners. Both are entitled to repayment of the direct costs associated with moving – for example, the physical removal, disconnection and reconnection of utilities, and replacement of curtains and carpets. Owners receive more due to the fees, and Stamp Duty, associated with buying their new accommodation.

There are other costs of upheaval which are harder to quantify, such as stress or the effect of moving children to new schools. These are recognised through the Home Loss Payment, which is £5,300[xvi] for each tenant household and 10 per cent of dwelling value (up to a maximum of £53,000) for owners who have to move. In London these work out to be very different amounts. In the base case the displaced owner would receive £25,000 by way of Home Loss Payment, whereas the displaced tenant only receives £5,300.

We looked further at this discrepancy by identifying all the different impacts that can occur through displacement. We valued each impact in social value terms, using work by Daniel Fujiwara of the LSE for the Housing Association Charitable Trust (2014) as a base line.[23] We recognised that some aspects of a move can be beneficial – for example, most displaced tenants will benefit from being in better quality homes and some will benefit from moving near to better schools. We then took account of the reduced negative impact of moving to a new dwelling within the estate, which involves far

xvi. This amount is prescribed by statute and reviewed periodically by Regulation.

less upheaval. Finally, we estimated the frequency with which the average household would experience the impact. For example, only a proportion of households will be affected by the need to move schools. The full list and the estimated money value of each social impact is shown in Appendix B.

We then made an estimate of how many households might experience each impact. The resultant aggregate figure is a weighted total for an imaginary average household. Not all owners are resident, and some residents are rehoused in a new dwelling on the same estate, thus experiencing much less upheaval.

We also made an attempt at scoring positive impacts. One of these will vary considerably, namely the 'value' of moving to a better home. Some residents will be rehoused in dwellings with a much greater rent subsidy, reflecting the higher cost or value of a newer, better quality dwelling. But many will move into other council or housing association stock of similar quality to their old home with little gain in 'value' in this respect.

The range is wide but we have tried to be comprehensive. The impact of changing dentist is very low. The impact of earlier death can be a real and unfortunate result of displacement, especially for older people, but is rare. While no one household will experience the same range of impacts as another, our conclusion is that an assessed impact value of upheaval through rehousing from a London estate due to regeneration is in the order of £15,000 to £20,000 per average resident. Given the current statutory Home Loss Payment for tenants is £5,300, there is a case for Home Loss Payments for tenants to be increased three- or four-fold.

There may also be a case for varying the amount depending on the length of time in the dwelling; its value; and whether the move is outside or within the estate.[xvii]

Recommendation: Home Loss Payments should be increased to ensure the fair treatment of tenants in the demolition and densification process. There may also be a case for varying the amount depending on the length of time in the dwelling; its value; and whether the move is outside or within the estate.

Implications and summary

While discussion of estate densification often centres around design and community engagement, understanding the financial dynamics of estate densification is vital to understanding what the potential for densification actually means in practice. While the consultation process is important, more open dialogue is needed surrounding the financial realities which often inform decisions around tenant compensation, estate density, tenure mix and timescale. This is particularly important at a time where local authorities are experiencing severe financial constraints. By improving the transparency around these costs, as well as the benefits accrued by unit sales, it is possible to develop more informed consultation and decisions about the viability and desirability of estate renewal. It is particularly important to have a better understanding of how these costs and rewards are shared between the public and private sectors. This understanding is

xvii. There also needs to be some flexibility in how such a payment is made. Such payments need to avoid causing e.g. corresponding reductions in benefits, but they should also be prevented from being used to pay off debts, or to assist with a house purchase combined with other subsidies such as Help to Buy. They should also account in some way for the value of Direct Rent Subsidy given up, if a tenant is not rehoused into affordable housing.

important, not just in improving trust between the various stakeholders involved in estate renewal, but in understanding the variables that affect the costs of projects.

This analysis of costs should be viewed in the context of national and regional housing policy. The commitment of the Mayor of London to achieving no net loss of social housing is one such example. A number of national policies risk further compromising the viability of estate regeneration. This includes the introduction of Starter Homes, and the expansion of Right to Buy.[xviii]

xviii. The impact of Right to Buy on estates is particularly significant outside of London, where unscrupulous investors do shady deals with those who have exercised their Right to Buy, gain a rental income from private renting, do not invest in improvements and run the property into the ground as it loses value.

CONCLUSION AND RECOM-MENDATIONS

We undertook this research project with the aim of gaining a more detailed understanding of the potential for estate densification in London. The outcome is a report that combines spatial analysis to assess the theoretical potential for densification, with financial modelling setting out how the viability of estate densification stacks up.

Our spatial analysis highlighted the following findings:

Within the four boroughs studied, it is generally not the case that large estates are any less dense than their surrounding wards, and a quarter of all large estates in the boroughs sampled are already at or above the upper bound of the central density setting. This is not to say that densification is not justified, but it should be noted that in many instances, densifying estates would mean rebuilding at a substantially higher density than the surrounding area.

Nonetheless, London Plan guidance for new build housing density suggests that there is significant potential for estate densification to add to London's housing supply. We estimate that across London, between 80,000 and 160,000 new homes could be added London's housing stock. However, it would take an estimated 10 years to start to tackle all the large estates, and a minimum of another 10 years to complete each project. We estimate that estate densification has the potential to add between 4,000 and 8,000 homes a year – up to 20 per cent of London's annual additional housing target.[xix]

Given the capacity for estate densification identified in this report, it is important that it is featured in the new London Plan. *This should include a full analysis of where London's existing large estates are, and their current densities.* It is apparent from estimates made in a number of reports that the supply potential of estate densification has sometimes been exaggerated.

xix. These estimates do not include homes gained through infill on estates.

Estate densification may be justifiable on the grounds that having a single land owner may make the process more straightforward, but not necessarily on the basis that these estates in their current form use land any less efficiently than their surrounding neighbourhoods. *As a result, the Mayor should continue to identify the potential for estate densification, while further exploring potential for densification on alternative land uses such as privately held residential land and publicly held land like car parks.*

A sensitivity analysis shows that the most significant variables impacting viability are the before- and after-values of the housing stock, the potential for increase in density, and the tenure mix at the beginning and at the completion of the regeneration.

The financial modelling included in this report demonstrates that many densification projects on large estates require some form of government subsidy. Viability is particularly difficult in estates with low density, and in the suburbs, where high proportions of Right to Buy properties have increased costs. The provision of sub-market housing also has a significant impact on the viability of projects. In short, if we want to use estate densification as a means of creating additional homes, a proportion of which are at sub-market prices, investment is required. In their current form, the loans provided by central government via the Estate Regeneration Fund are not sufficient. *If estate densification is to both deliver additional units and ensure provision of sub-market housing in such situations, more grant funding is required. In such cases, we recommend that projects are supported by a programme of gap funding. This could be a combination of central government grant, housing association cross-subsidy, private finance through stock transfer, and local authority contribution.*

While this report has not focused on community consultation, this remains a hugely important part of the estate densification process. We welcome the Mayor of London's commitment to produce a charter

for good redevelopment. We recommend that the Mayor should work with resident groups, as well as the broader community, local authorities, and developers in doing so. These guidelines should focus not only on community engagement, but also on the full and transparent costing of projects prior to this consultation process. This would ensure that all parties are entering discussions with as much knowledge as possible about the costs and benefits of estate redevelopment.

As was noted earlier in this report, the redevelopment of large estates primarily on the basis of densification rather than regeneration (the aim of the latter being to reverse stock decline and improve the socio-economic exclusion of residents) is a new phenomenon in public policy. It is also a policy development largely confined to London, where the need to increase the housing supply is at its most acute. This report has shown that the potential for estate densification is significant (though maybe less dramatic than some commentators have suggested); and that realising this potential requires a step change in the funding of such projects.

APPENDIX A: SPATIAL AND DENSITY ANALYSIS – METHODOLOGY

We looked at large estates in four London boroughs to assess their potential for densification. Calculating the density of these large estates allowed us to compare the density of estates with that of their surrounding wards, and with the levels recommended in planning policy. It should be borne in mind that these assessments were desk-based, and detailed design and planning work would be needed to translate indicative potential into reality – especially in order to achieve improvements in conditions for current residents as well as provision of additional homes for newcomers.

Selecting boroughs

We selected Barking and Dagenham, Hounslow, Lewisham, and Waltham Forest as our sample boroughs. This selection was based on the following criteria:

1—Including four London boroughs that contain approximately 13 per cent (four out of the 32 London boroughs) of London's social housing stock when combined.

2—Including a mix of Inner, middle, and Outer London boroughs, as their social housing stocks have different configurations and, we anticipate, different densities.

3—Excluding boroughs that have had large stock transfers to housing associations (on the assumption that these are already being more proactively managed).

4—Excluding those boroughs that have already been most active in estate redevelopment.

Analysis

Finding high concentrations of social housing
We extracted data using the 2011 Census from Neighbourhood Statistics and the Lower Layer Super Output Area (LSOA) Atlas.[24] For all LSOAs in each borough, we recorded the total dwellings, the percentage of socially rented dwellings (from local authorities), and residential land use areas (domestic buildings plus domestic gardens). As a proxy for estates, LSOAs with over 32 per cent local authority-rented homes and at least 200 dwellings were examined more closely. The dwellings per hectare of their wards were also calculated for those particular LSOAs.

Locating estates
Google Maps and mapping software were used to manually search for estates within all identified LSOA's with over 32 per cent socially rented, council-owned homes. Only estates with over 200 homes were recorded. We identified sites that looked like estates (e.g. large blocks, green spaces and concrete playgrounds, as well as car parks and garages). For reliability, Google Street View was a second point of reference; many council estates had large signs at their edges, displaying council logos and site maps, which were used to confirm their identity. For Lewisham there was also a list of estates (provided by the borough in response to a 2010 Freedom of Information request). In order to verify findings, we checked this list after manually identifying the estates. No such data was publicly available for Barking and Dagenham, Hounslow, or Waltham Forest.

Using mapping software, we measured the land use area of each estate (in hectares). We took measurements from the pavements around estates, and we included roads that fell within the estate completely. Non-residential buildings that were within estates were also included. The number of dwellings on each estate was verified on *WhatAddress*.[25] The density of each

individual large estate (in dwellings per hectare) was then calculated.

Finding the capacity for densification
First, estate densities were based on the density of the ward they are situated in. If estates fell across ward boundaries, the density was based on the ward in which the majority of the estate is situated.

Second, the density matrix was used as a benchmark on which to calculate the capacity for densification.

The density matrix

The Sustainable Residential Quality (SRQ) density matrix is a guideline set out in the London Plan. Taking into account other policy variations, the matrix includes wide density ranges. The density matrix is sensitive to variations in built form, massing, and PTAL. Its output values are in habitable rooms per unit, and dwellings per hectare. It is primarily intended for new developments.

Two key variables affect the matrix: Public Transport Accessibility Levels (PTALs) and their neighbourhood typology. PTAL is a measurement of an area's connectivity, for example the distance to a bus stop or train station. It is measured from six to zero, with six being the highest, and zero being the lowest. An area's setting is classified as either 'central', 'urban', or 'suburban'. 'Central' neighbourhoods are dense, mixed-use areas with tall buildings, and are normally located near the city centre. 'Urban' areas are located near district centres, with buildings up to four storeys. They include buildings such as terraced houses, and low-rise apartment blocks. Dwellings in 'suburban' areas are usually limited to three storeys, and contain housing types such as detached and semi-detached. In order to calculate density in the London Plan, net residential site area is used – this includes non-residential land uses on sites, such as car parks, internal roads, and open spaces, but it does not include adjoining roads and paths.

We estimated that there were 3.1–3.7 habitable rooms per dwelling, allowing for a good proportion of family homes to be included.

Density Matrix for 3.1–3.7 Habitable Rooms

Setting	PTAL 0–1	2–3	4–6
'Suburban'	40–65 u/ha	40–80 u/ha	55–115 u/ha
'Urban'	40–80 u/ha	55–145 u/ha	55–225 u/ha
'Central'	40–100 u/ha	80–210 u/ha	175–355 u/ha

Source: Greater London Authority

Two scenarios were set out: one in which all estate densities were to be raised to the upper limit of the 'urban' level, and the second in which all estate densities were to be raised to the upper limit of the 'central' level. For both scenarios ('urban' and 'central'), the land-use area of each large estate was multiplied by the upper bound of the density matrix range at the mid-level PTAL (2–3). The potential increase in number of dwellings on each estate was noted.

Finding London's capacity

We calculated the total number of homes that could be added to large estates in the four selected boroughs at 'urban' and 'central' settings. Our method for finding London's total potential uplift was as follows:

1—We calculated the total uplift (in number of dwellings) in our sample.

2—We calculated the total uplift as a percentage of the total 'number of dwellings socially rented from local authority' in the four boroughs.[26]

3—We multiplied this percentage by the 'number of dwellings socially rented from local authority' for each of the 33 Greater London boroughs, and calculated the total.

4—Our value for 'urban' was the lower limit for our range, and our value for 'central' was the upper limit.

5—We estimate that densification of this scale in London could take up to 20 years to complete (see Chapter 3), and therefore estimated the annual uplift range (in number of homes) that could be achieved by dividing our upper and lower limits by 20.

Methodological limitations

1—Finding high concentrations of social housing: Under our methodology, potential large estates in LSOAs with less than 32 per cent social dwellings rented from the local authority have been omitted from this study.

2—Locating estates:

i) Estates were mapped by eye, so it is possible that smaller estates have been omitted.

ii) Using our methodology, it was not possible to decipher which estates were actually council-owned, and how many socially rented dwellings were within those estates.

iii) The areas calculated are not precise, therefore all values are rounded to at least 1.

iv) The gross area of each estate was measured, not just the net built area, or net residential area. Therefore the gross calculated densities are likely to be lower than those for individual blocks or land parcels.

v) We did not differentiate between current estates that have been or are being densified right now, and estates that have not been densified.

3—Finding the capacity for densification:

i) Some estates cannot be accurately compared to a single LSOA, ward or even borough, as they run over the boundaries.

ii) We assumed that all densified estates contained 3.1–3.7 habitable rooms per hectare.

iii) We assumed that bringing all estates to maximum 'central' or even maximum 'urban' densities will be appropriate – in terms of neighbourhood character, access to resources and services etc.

iv) We have only focused on the homes that could be added through estate densification, and have not included other estate services such as shops or community centres in our density calculations.

4—Finding London's capacity:

i) We have decided to weight boroughs according to their social housing stock as a proxy for the number of housing estates. This does not take into account the differing configuration of social housing in different boroughs, or the extent to which redevelopment has already taken place.

ii) Right to Buy has not been factored into the 'number of dwellings socially rented from local authority', because our sample showed that the proportion of Right to Buy to socially rented dwellings is roughly the same for London boroughs. Our sample demonstrated a range between 50 to just over 60 per cent of the dwellings remaining in council ownership.

Caveats

1—Our London total assumes that there is unlimited funding for the schemes, and that all schemes are financially viable.

2—Within our 20-year timeline estimate, there are likely to be three or four years of no homes being built, as well as housebuilding peaks later on.

3—In some boroughs there will be densification capacity in smaller estates, but we have not taken those into account for the purpose of this report.

4—Our estimates do not take into account the financial viability of estate densification projects, nor do they take into account the political feasibility of introducing higher densities.

APPENDIX B: INDIRECT COSTS TO EXISTING RESIDENTS

The list below shows the impacts of upheaval that may be difficult to quantify. It identifies most of the main headings, but as individual circumstances vary so much it is very hard to be fully comprehensive, and most displaced households only experience some, not all, of these impacts.

Indirect costs for displaced residents

Impact duration over one year or event within first year	**% households affected**		**"impact value" each type**		**Impact per displaced household**
Type of indirect negative impact	**Lower estimate**	**Upper estimate**	**Lower estimate**	**Upper estimate**	**Mid-range**
Finding new GP, Dentist	25%	50%	£250	£500	£156
Change in social landlord	15%	35%	£500	£1,000	£213
Change in travel times, e.g. to work	33%	50%	£750	£1,000	£374
Moving childrens' school, reorganising child care	15%	25%	£750	£2,000	£306
Loss of local connection, local knowledge of neighbourhood	66%	100%	£1,000	£3,000	£1,830
Temporary sense of exclusion in new community	25%	75%	£1,500	£4,000	£1,688
Time and stress associated with move	80%	100%	£2,000	£5,000	£3,300
Change in home security/ break-in after move	1%	5%	£2,500	£5,000	£138
Fear on part-empty estate	15%	25%	£3,000	£7,500	£1,163
Increased ill health	10%	25%	£25,000	£50,000	£7,500
Earlier death	1%	3%	£100,000	£150,000	£2,750
Total negative impact value					**£19,416**
					c. £20,000
Type of indirect positive impact					
Better accommodation	25%	75%	0	0	£0
Better schools and neighbourhood	20%	50%	£2,500	£5,000	£1,500
Fresh start	10%	25%	£10,000	£25,000	£3,625
Total net impact					**£5,125**
					c. £5,000

ENDNOTES

1. Office for National Statistics. (2015). *Table 100 Dwelling stock: Number of Dwellings by Tenure and district: England*. Retrieved 20 June 2016, from: www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants
2. Ibid.
3. Ibid, p52.
4. Hills, J. (2007). *Ends and Means: The Future Roles of Social Housing in England*, p87. ESRC Research Centre for Analysis of Social Exclusion. [Figure 9.1]. Retrieved 26 May 2016, from: http://eprints.lse.ac.uk/5568/1/Ends_and_Means_The_future_roles_of_social_housing_in_England_1.pdf
5. Gregory, J. & Todd, J. (2012). *Home-work: Helping London's Social Tenants into Employment*. Centre for London. Retrieved 26 May 2016, from: www.demos.co.uk/files/CFL_HOME-WORK_REPORT.pdf?1354730430
6. HTA, Levitt Bernstein, Pollard Thomas Edwards, & PRP. (2016). *Altered Estates: How to reconcile competing interest in estate regeneration*. Retrieved 23 June 2016, from: www.alteredestates.co.uk
7. Belotti, A., Power, A. & Provon, B. (2016). Moving on without moving out: The impacts of regeneration on the Rayners Lane Estate. *LSE Housing*, pp6, 8–9, 88. Retrieved 1 July 2016, from: www.homegroup.org.uk/Media/News/Home-Group-news/Research-shows-significant-social-return-on-investment-for-London-regeneration-project
8. Home Group. (n.d.). *Rayners Lane Harrow*. Retrieved on 5 July 2016, from: www.homegroup.org.uk/Corporate/Development-Partners/Enterprise-and-Development-case-studies/Rayners-Lane-Harrow
9. Roberts, D. (2015). *Balfron Tower: A building archive*. Retrieved 9 July 2016, from: www.balfrontower.org
10. Poplar HARCA. (2014). *Making Poplar a Better Place to Live: Annual Report 2013–2014*, p19. Retrieved 11 July 2016, from: www.poplarharca.co.uk/sites/default/files/1630_PH%20AnnualReport%20final_(v8d)_dps_28oct14.pdf
11. Roberts. (2015).
12. Bossetti, N. & Sims, S. (2016). *STOPPED: Why people oppose residential development in their backyard*, pp23–25, 39–41, 50–51. Centre for London. Retrieved 16 August 2016, from: http://centreforlondon.org/publication/opposition-housing-developments

13. Rhodes, J. & Tyler, P. (2007). *The Single Regeneration Budget: Final Evaluation*. University of Cambridge Department of Land Economy. Retrieved 27 May 2016, from: www.landecon.cam.ac.uk/pdf-files/cv/pete-tyler/SRB_RESEARCHSUMMARY_2007.pdf
14. Office for National Statistics. (2011). *Neighbourhood Statistics: Dwellings; Land Use Statistics; Tenure – Households*. Retrieved 11 April 2016, from: www.neighbourhood.statistics.gov.uk/dissemination/Download1.do
15. Mayor of London. (2016a). *Housing Supplementary Guidance*, pp44, 50 [para 1.3.37]. Retrieved 27 June 2016, from: www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/housing-supplementary
16. Office for National Statistics. (2015).
17. Department for Communities and Local Government. (2015). *Households on Local Authority Waiting List*. Retrieved 23 June 2016, from: www.gov.uk/government/statistical-data-sets/live-tables-on-rents-lettings-and-tenancies
18. Mayor of London. (2016b). *London plan annual monitoring report 12, 2014–15*, p69 [Table 3.1]. Retrieved 20 July 2016, from: www.london.gov.uk/sites/default/files/amr12.pdf
19. Office for National Statistics. (2015).
20. Mayor of London. (2016b).
21. Sadiq for London. (2016). *Homes for Londoners*. Retrieved 25 August 2016, from: www.sadiq.london/homes_for_londoners_manifesto
22. Fujiwara, D. (2014). *Measuring the Social Impact of Community Investment: A Guide to using the Wellbeing Valuation Approach*. HACT. www.hact.org.uk/social-value-publications
23. Office for National Statistics. (2011); London Data Store. (2014). *LSOA Atlas*. Retrieved 11 April 2016, from: http://data.london.gov.uk/dataset/lsoa-atlas
24. WhatAddress. (2014). Retrieved 11 April 2016, from: www.whataddress.co.uk
25. Office for National Statistics. (2015).

London's social housing estates are commonly identified as an important source for new housing supply. Yet we know surprisingly little about their location, density or capacity. This report assesses the capacity for densification offered by London's large estates, and the extent to which densification – through demolition and rebuilding – can help meet London's housing needs. We also examine the factors affecting the financial viability of estate redevelopment projects, and set out the need for a greater understanding of how the costs of estate densification can be weighed.

This publication has been generously supported by Countryside Properties and Home Group.

ISBN 978-0-9932416-8-0

CENTRE FOR LONDON