Greater London Authority

London Plan Viability Study

December 2017

Three Dragons
Turner & Townsend
Housing Futures Ltd

In association with
Troy Planning + Design

This report is not a formal land valuation or scheme appraisal. It has been prepared using the GLA Development Appraisal Toolkit and is based on borough level data supplied by GLA, consultant team inputs and quoted published data sources. The toolkit provides a review of the development economics of illustrative schemes and the results depend on the data inputs provided. This analysis should not be used for individual scheme appraisal.

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Three Dragons
Turner & Townsend
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EXECUTIVE SUMMARY

Purpose of the study

1. The central purpose of the London Plan Viability Study is to provide the GLA with:

   "…*a robust evidence base to support the new London Plan and will supplement the GLA's Strategic Housing Land Availability Assessment (SHLAA) by providing a more detailed understanding of the viability and deliverability of sites across London*."

2. A viability assessment is required to ensure the deliverability of the London Plan which will run from 2019 to 2041. This principle is set out in the National Planning Policy Framework (NPPF) which advises that cumulative effects of policy should not combine to render plans unviable and that:

   '… the sites and the scale of development identified in the plan should not be subject to such a scale of obligations and policy burdens that their ability to be developed viably is threatened. To ensure viability, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, provide competitive returns to a willing land owner and willing developer to enable the development to be deliverable.'[1]

Approach to the testing

3. A deliverable plan is one where the overall scale of development identified in the plan should be viable. Reflecting national guidance, the viability of the main range of development types likely to come forward over the life of the London Plan have been tested[2]. These are for residential development (for sale and Build to Rent, 'other residential' (specialist housing for elderly households, student and Shared Living accommodation), mixed use schemes (residential and commercial uses on the same site and non-residential uses (including office and industrial schemes and hotels). The testing used a series of case studies, representative of the main types of development likely over the life of the Plan. The residential case studies were from 8 to 750 dwellings and at densities from 64 dwellings per hectare (dph) to 450 dph, with building heights up to 15 storeys. Also tested were mixed used schemes with up to 1500 units as well as other non-residential uses.

4. The full range of costs and values of development were drawn up, using the best available evidence. Alongside generic development costs e.g. build costs, professional fees, cost of finance, this included a review of the policies in the draft London Plan that are likely to have an impact on viability (for some or all site types). These policies included delivery of affordable housing, environmental standards, parking and cycle storage provision, accessibility standards and size of dwellings. The costs of the Community Infrastructure Levy (including MCIL2) and S106 payments were also taken into account.

5. The viability testing undertaken followed national guidance in assessing the residual value of the case study schemes (their total revenue less costs) and comparing this with a series of benchmark land values, ensuring a competitive return for developers and landowners.

6. The analysis of the values and costs of development in London highlighted significant variations across the city and 5 value bands were identified for residential development (A to E, highest to

1 DCLG, 2012, NPPF Para 173

2 PPG Paragraph: 006 Reference ID: 10-006-20140306

lowest) and three value areas for non-residential uses (central, inner and outer – again highest to lowest). Build and associated development costs also varied in line with the value bands/areas. Account was also taken of the impact of the height of buildings on costs and values – both increasing with the number of storeys.

Results of the testing

7. The testing undertaken for the **residential schemes (sale and Build to Rent)** explored the impact of a range of alternative types and amounts of affordable housing (at 50%, 35% and 20%) reflecting draft Plan policy. This sets out a threshold of 35% for schemes to follow a Fast Track Route where they meet other policy requirements to the satisfaction of the local authority. The equivalent threshold for residential development on public land and industrial land is 50%.
8. The affordable housing types tested are in accordance with the Mayor's policies and were:
    - London Affordable Rent (LAR)
    - London Living Rent (LLR)
    - London Shared Ownership (LSO)
    - Discount Market Rent (DMR)
9. In the highest value bands (A and B) schemes are generally viable at 50% affordable housing without grant, particularly for sites with low/ mid benchmark land values. In the lower value band C, there are scheme types also viable at 50% affordable housing although the Build to Rent schemes are typically less viable. In value bands D and E viability is more varied although this is as much related to the typology and built form as the affordable housing required. 35% affordable housing is viable across the value bands depending on scheme type and tenure. The provision of affordable housing grant increases delivery in some cases in the mid/ lower value bands.
10. Some types of development are more viable than others and this varies between value bands e.g. the higher density schemes are more viable in the higher value bands; and the lower density schemes are more viable in the lower value bands, based on current day values. It may be possible to deliver more viable developments (including at higher densities) by using a lower-rise form of development and/ or in areas with better transport accessibility; and this would allow more certainty around affordable housing provision where values are lower.
11. Build to Rent can be slightly less viable than for sale although Build to Rent is supported by the policy requirement for Discounted Market Rent rather than low cost rented affordable housing. Most Build to Rent case studies can support 35% affordable housing providing both DMR and LLRs at the levels tested, except where values are at their lowest.
12. Testing of the **other residential accommodation** shows that student accommodation and Shared Living schemes are viable at the policy threshold of 35% affordable housing[3].
13. Sheltered and extra care housing is viable with 35% affordable housing in Value Band C, but viability is more challenging in lower value areas.
14. **Mixed use schemes,** which are predominantly residential-led, demonstrate similar viability to the equivalent standard residential schemes, with relatively strong viability in the higher and mid value bands but reduced viability in lower value bands. Only schemes with lower density and/ or a different built form to these longer-term mixed-use schemes are likely to be viable in E.

[3] For Shared Living this is taken as an off-site contribution and for student accommodation, at a percentage of units at a lower rent.

15. Forecasts of future values and build costs have been tested which indicate the potential for improvements in viability across residential and mixed-use development types within the plan period.

16. **Non-residential development** of the types tested is viable across London when policy requirements are accounted for including CIL, energy standards and affordable workspace, as well as the other standard development costs. The inclusion of affordable workspace makes little difference to viability in most cases. Some non-residential uses are able to out-bid other less valuable uses for sites and that this will vary between value areas.

17. Most budget and luxury hotel case study schemes tested were viable with some exceptions, in line with market trends. For budget hotels, where a larger room format is not viable, a smaller room format may be viable.

Delivery of the Plan

18. The underlying message of the viability testing is that most development types can meet the policy requirements of the draft London Plan. The study also highlights that the viability of individual schemes which face viability challenges, and are genuinely unable to meet the full range of policy requirements, may need to be considered. The draft Plan allows for this for residential schemes through a Viability Tested Route for applications where there are clear circumstances preventing delivery.

19. As required by the NPPF it can be concluded that the standards and policies of the London Plan should not put its implementation at serious risk and should facilitate development throughout the economic cycle. The GLA monitors the policies of the London Plan through the Annual Monitoring Report process and will keep the policies of the plan under review.

1 Introduction

1.1 Study objectives

1.1.1 Three Dragons, Turner & Townsend, Housing Futures Ltd and Troy Planning and Design were commissioned by the Greater London Authority (GLA) to undertake a viability assessment that will:

> *'.....provide a robust evidence base to support the new London Plan and will supplement the GLA's Strategic Housing Land Availability Assessment (SHLAA) by providing a more detailed understanding of the viability and deliverability of sites across London.'*

1.1.2 The study has five sub-objectives:

- examine the likely cumulative viability impact of the proposed policies and standards in the Plan (and including CIL);
- provide a broad strategic understanding of viability across London based on current and projected market trends;
- test the viability and deliverability of an appropriate range of sample sites across London;
- model various scenarios in relation to planning policy requirements, grant availability and economic trends;
- draw on expert evidence relating to assumptions and inputs that impact on viability;
- viability testing is to include residential, non-residential and mixed uses.

1.1.3 The main purpose of a plan viability (or PV) assessment is to provide evidence to show that the requirements of the National Planning Policy Framework (NPPF) are met. That is, the policy requirements in a plan should not threaten the development viability of the plan as a whole. The objective of this study is to assess whether the policies of the draft London Plan are realistic and provide high level assurance that the Plan is viable.

1.2 London Plan

1.2.1 Under the legislation establishing the GLA, the Mayor is required to publish a Spatial Development Strategy (SDS) - known as the London Plan, and keep it under review. The London Plan currently being prepared will run from 2019 to 2041.

1.2.2 Quoting from the draft Plan itself, "The London Plan is the overall strategic plan for London. It sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 year." The document brings together the geographical and locational aspects of the Mayor's other strategies - including those dealing with:

- transport
- green and open environment
- economic development
- housing
- heritage and culture

- social infrastructure
- sustainable infrastructure
- design

1.2.3 The Plan will form part of the statutory development plan for London alongside local development plans prepared by boroughs. Local plans are also subject to viability testing under national policy and guidance.

1.2.4 The London Plan will be subject to a three-month public consultation period from the end of November 2017. The Plan will be subject to Examination in Public in Autumn 2018 and is scheduled for publication in late 2019.

1.3 Structure of this document

1.3.1 This report appraises the viability a range of typologies of residential and non-residential development across London. Schemes are tested at current (late 2017) costs and values with sensitivity testing of future changes in costs and prices, using published forecasts where available. The approach to viability testing and its accordance with government guidance is summarised in Chapters 2 and 4, while Chapter 8 explains the approach taken to setting benchmark land values. Chapter 3 reviews market conditions. Key assumptions underlying the report are set out in Chapters 5-7 with the full testing results and policy conclusions presented in Chapters 9-14.

2 Requirements of viability assessment

2.1 National policy context

National framework

2.1.1 The National Planning Policy Framework (NPPF) recognises that the 'developer funding pot' or residual value is finite and decisions on how this funding is distributed between affordable housing, infrastructure, and other policy requirements have to be considered as a whole, they cannot be separated out.

2.1.2 The NPPF advises that cumulative effects of policy should not combine to render plans unviable:

> *'Pursuing sustainable development requires careful attention to viability and costs in plan-making and decision-taking. Plans should be deliverable. Therefore, the sites and the scale of development identified in the plan should not be subject to such a scale of obligations and policy burdens that their ability to be developed viably is threatened. To ensure viability, the costs of any requirements likely to be applied to development, such as requirements for affordable housing, standards, infrastructure contributions or other requirements should, when taking account of the normal cost of development and mitigation, provide competitive returns to a willing land owner and willing developer to enable the development to be deliverable.'*[4]

2.1.3 It goes on to state that:

> *'Local planning authorities should set out their policy on local standards in the Local Plan, including requirements for affordable housing. They should assess the likely cumulative impacts on development in their area of all existing and proposed local standards, supplementary planning documents and policies that support the development plan, when added to nationally required standards. In order to be appropriate, the cumulative impact of these standards and policies should not put implementation of the plan at serious risk, and should facilitate development throughout the economic cycle. Evidence supporting the assessment should be proportionate, using only appropriate available evidence.*[5]

2.1.4 With regard to non-residential development, the NPPF states that local planning authorities,

> *'…..should have a clear understanding of business needs within the economic markets operating in and across their area. To achieve this, they should… understand their changing needs and identify and address barriers to investment, including a lack of housing, infrastructure or viability.'*

2.1.5 The NPPF does not state that all sites must be viable now in order to appear in the plan. Instead, the NPPF is concerned to ensure that the bulk of the development is not rendered unviable by unrealistic policy costs. To ensure deliverable plans, the overall scale of development identified in the plan should be viable and not rendered unviable by the cumulative impact of policy requirements or obligations. In a free market, where development is largely undertaken by the private sector, the local planning authority can seek to provide suitable sites to meet the needs of sustainable development. It is not within the local planning authority's control to ensure delivery actually takes place; this will depend on the willingness of a developer

4 DCLG, 2012, NPPF Para 173

5 DCLG, 2012, NPPF Para 174

to invest and a landowner to release the land. This can also be influenced by a range of factors other than viability including construction capacity constraints and business decisions regarding the rate that new properties are brought to the market.

Deliverability and developability considerations in the NPPF

2.1.6 The NPPF requires sites identified to be assessed for their potential to deliver over a 20-year plan period. In order to be deliverable sites must be available, suitable and achievable[6] and this study tests the economic viability of the sites which will help to determine achievability. Viability, in this context, is on a standardised basis and does not take into account the individual circumstances of the developers or landowners of a specific site.

2.1.7 The NPPF creates the two concepts of 'deliverability' (which applies to residential sites which are expected in years 0-5 of the plan) and 'developability' (which applies to year 6 of the plan onwards). The NPPF defines these two terms as follows:

> *'To be deliverable, sites should be available now, offer a suitable location for development now, and be achievable, with a realistic prospect that housing will be delivered on the site within five years and in particular that development of the site is viable.*
>
> *To be developable, sites expected from year 6 onwards should be able to demonstrate a 'reasonable prospect that the site is available and could be viably developed at the point envisaged'.*

2.1.8 This study deals with the viability element only, the assessment of availability, suitability, and achievability, including the timely delivery of infrastructure are dealt with separately through the 2017 London Strategic Land Availability Assessment (SHLAA) and transport modelling being undertaken by Transport for London.

2.1.9 The NPPF advises that a more flexible approach may be taken to the sites coming forward from year 6 onwards. These sites might not be viable now and might instead only become viable at a future point in time (e.g. when a lease for the land expires, or future use values become attractive). This recognises the impact of economic cycles and variations in values and policy changes over time.

Planning Practice Guidance

2.1.10 Planning Practice Guidance[7] (PPG) provides further detail about how the NPPF should be applied. PPG contains general principles for understanding viability. It also notes that there is a range of sector-led guidance available[8]. In order to understand viability, a realistic understanding of the costs and the value of development is required and direct engagement with development sector may be helpful[9]. Evidence should be proportionate to ensure plans are underpinned by a broad understanding of viability, with further detail where viability may be marginal or for strategic sites with high infrastructure investment[10]. However not every site requires testing and site typologies may be used to determine policy[11].

2.1.11 PPG requires that a buffer should be allowed, and that current costs and values should be used for at least the first five years of the plan period (except where known regulation/policy changes

6 NPPF para 159

7 DCLG, Planning Practice Guidance

8 PPG Paragraph: 002 Reference ID: 10-002-20140306

9 PPG Paragraph: 004 Reference ID: 10-004-20140306

10 PPG Paragraph: 005 Reference ID: 10-005-20140306

11 PPG Paragraph: 006 Reference ID: 10-006-20140306

are to take place)[12]. Generally, values should be based on comparable, market information, using average figures and informed by specific local evidence[13]. For an area wide viability assessment, a broad assessment of costs is required, based on robust evidence which is reflective of local market conditions. All development costs should be taken into account, including infrastructure and policy costs as well as the standard development costs[14].

2.1.12 Land values should reflect emerging policy requirements and planning obligations, and provide a competitive return to willing developers and land owners. Where possible land values should be informed by comparable, market-based evidence but excluding transactions above the market norm[15]. Assumptions about brownfield land values should clearly reflect the levels of mitigation and investment required to bring sites back into use[16].

2.2 Other guidance on viability testing for development

2.2.1 Guidance has been published to assist practitioners in undertaking viability studies for policy making purposes – "Viability Testing Local Plans - Advice for planning practitioners"[17]. The Foreword to the Advice for planning practitioners includes support from DCLG, the LGA, the HBF, PINS and POS. PINS and the POS18 state that:

> *'The Planning Inspectorate and Planning Officers Society welcome this advice on viability testing of Local Plans. The use of this approach will help enable local authorities to meet their obligations under NPPF when their plan is examined.'*

2.2.2 The approach to viability testing adopted for this study follows the principles set out in the Advice. As with PPG, the Advice re-iterates that the plan testing can provide high level assurance that the policies are viable.

2.2.3 The Advice also comments on how viability testing should deal with potential future changes in market conditions and other costs and values and, in line with PPG, states that:

> *'The most straightforward way to assess plan policies for the first five years is to work on the basis of current costs and values'. (page 26)*
>
> But that:
>
> *'The one exception to the use of current costs and current values should be recognition of significant national regulatory changes to be implemented…' (page 26)*

2.3 A shifting policy context

2.3.1 At the time of preparing this report, central government has signaled a number of potential policy changes that will likely have an impact on development viability generally and the wider role of viability testing and local plans.

12 PPG Paragraph: 008 Reference ID: 10-008-20140306

13 PPG Paragraph: 012 Reference ID: 10-012-20140306

14 PPG Paragraph: 013 Reference ID: 10-013-20140306

15 PPG Paragraph: 014 Reference ID: 10-014-20140306

16 PPG Paragraph: 025 Reference ID: 10-025-20140306

17 The guide was published in June 2012 and is the work of the Local Housing Delivery Group, chaired by Sir John Harman, which is a cross-industry group, supported by the Local Government Association and the Home Builders Federation.

18 Acronyms for the following organisations - Department of Communities and Local Government, LGA Environment and Housing Board, Home Builders Federation, Planning Inspectorate, Planning Officers Society

2.3.2 The Housing White Paper[19] set out a proposed revised definition of affordable housing (see Annex to the White Paper at Box 4). This broadens the definition to include affordable private rent housing. This assessment includes types of affordable housing (Discounted Market Rent) consistent with the proposed new and broader definition of affordable housing.

2.3.3 The other major potential change signaled in the Housing White Paper that could affect local plan viability is to the Community Infrastructure Levy and to the way charges are set at the local level (in the case of London there is both a pan London Mayoral CIL charge and variable charges set by the individual boroughs). In 2016 the government published the review of CIL undertaken by a team led by Liz Peace.[20] This set out an alternative approach to assessing CIL charges, recommending that they are, in future, based on a national formula that reflects local market values. The Review also recognised that Combined Authorities should be enabled to set up additional Mayoral Strategic Infrastructure tariffs such as in the case of London. The CIL review team concluded, in relation to the London Mayoral CIL that, '*Despite some early complaints, this seemed to end up being broadly acceptable to all and indeed was frequently cited as a success story*.' [21]

2.3.4 The 2017 Autumn Budget announced that DCLG will consult on proposals to speed up the CIL process, allow rates to be set that reflect the uplift in land values, and change the basis of CIL indexation, as well as other proposals regarding section 106 pooling and cross local authority strategic infrastructure tariffs (based on the London Mayoral CIL). These proposals do not suggest any immediate changes to the way CIL is operated and the current study therefore assumes CIL charges (Mayoral and borough based) will operate on the current system, including proposed Mayoral CIL2 rates. The GLA will need to consider any changes introduced by government in due course to determine if the changes appear to have a significant potential impact on scheme viability.

2.3.5 In September 2017, the government published a consultation paper, "Planning for the right homes in the right places". Amongst other topics, the consultation paper set out a proposed approach to viability testing, potentially to enhance the role of testing undertaken in support of the preparation of local plans (including the London Plan). The consultation paper states that:

> *'Stakeholders have told us that the use of viability assessments in planning permission negotiations has expanded to a degree that it causes complexity and uncertainty and results in fewer contributions for infrastructure and affordable housing than required by local policies Viability assessments can be complex. In simple terms a site is viable if the value generated by its development is more than the cost of developing it. However, the range and complexity of variables in assessing this are such that the process is seen as being susceptible to gaming; and is often viewed with suspicion by authorities, communities and other observers. In particular, estimating future values and costs can be manipulated to reflect a range of outcomes. Furthermore, appraisals are often not published on the grounds of commercial confidentiality. This means that the process is neither easily understood nor transparent.'*[22]

2.3.6 In addressing this issue, the government proposes that local planning authorities should set out the types and thresholds for affordable housing contributions required; the infrastructure needed to deliver the plan; and expectations for how these will be funded; and the contributions

19 Housing White Paper, "Fixing our broken housing market", DCLG, February 2017

20 A New Approach to Developer Contributions, A Report by the CIL Review Team, October 2016

21 Op cit para 3.3.5

[22] Planning for the right homes in the right places, DCLG Consultation Paper, September 2017, para 105-106

developers will be expected to make. A further proposal is that 'where policy requirements have been tested for their viability, the issue should not usually need to be tested again at the planning application stage.'[23]

2.3.7 If this proposal is taken forward, it will put more emphasis on ensuring plan policies are comprehensively tested as part of the evidence base supporting a new local plan. The current study has followed the spirit of this potential change, with a rigorous review of the policies in the draft London Plan that could impact on viability.

2.3.8 A revised NPPF is expected to be published for consultation early in 2018 setting out the government's proposed approach following the Housing White Paper and other recent consultations.

2.4 Local guidance

2.4.1 The Mayor of London has published guidance which has also informed elements of this study.

2.4.2 The Affordable Housing and Viability Supplementary Planning Guidance 2017 [24] updates earlier guidance on viability in the Housing SPG 2016.

2.4.3 The 2017 SPD introduces a threshold approach to affordable housing, identifying schemes suitable for a Fast Track approach and those that will need to follow a Viability Tested Route. Fast Track schemes are not required to submit viability information and are, in summary, schemes which meet or exceed 35 per cent affordable housing provision on-site without public subsidy whilst meeting other Plan requirements. Schemes which do not meet the 35 per cent affordable housing threshold, or require public subsidy to do so, are required to submit detailed viability information. The aim of this approach is to provide certainty and consistency, as well as clear incentives for developers to increase affordable housing delivered through the planning system.

2.4.4 The threshold approach is also reflected in the draft London Plan which allows for site specific viability testing where there are circumstances creating barriers to delivery. Affordable housing delivery has been tested for a range of sites and value areas as a part of this study. Affordable housing tenures and the impact of grant on affordable housing delivery have been tested in line with the Mayor's Affordable Homes Programme Funding Guidance 2016-21 (November 2016).

2.4.5 The impact of public subsidy is assessed in this study through a series of sensitivity tests. The SPD sets out that i) where developer-led schemes can provide or exceed 40 per cent affordable housing (with grant) then the fixed grant per unit will be available on all affordable housing units in the scheme) and ii) where developer-led schemes are delivering less than 40 per cent, grant will only be available for the additional affordable homes over and above the baseline level of affordable housing shown as being viable.

2.5 Principles of viability testing

2.5.1 The "Advice for planning practitioners" summarises viability as follows:

'An individual development can be said to be viable if, after taking account of all costs, including central and local government policy and regulatory costs and the cost and availability of development finance, the scheme provides a competitive return to the developer to ensure that development takes place and generates a land value sufficient to persuade the land

[23] Ibid, para 113
24 GLA, Published August 2017

owner to sell the land for the development proposed. If these conditions are not met, a scheme will not be delivered.' (page 14)

2.5.2 Reflecting this definition of viability, and as specifically recommended by the Advice for planning practitioners, we have adopted a residual value approach to our analysis. Residual value is the value of the completed development (known as the Gross Development Value or GDV) less the costs of undertaking the development. The residual value is then available to pay for the land. The value of the scheme includes both the value of the market housing and affordable housing (and other non-residential values). Scheme costs include the costs of building the development, plus professional fees, marketing and legal costs, scheme finance and a return to the developer. Scheme costs also include CIL and planning obligations

2.5.3 The residual value of a scheme is then compared with a benchmark land value. If the residual value is less than the benchmark value, then the scheme is less likely to be brought forward for development and is considered unviable for testing purposes. If the residual value exceeds the benchmark, then it can be considered viable in terms of policy testing. This is a standard approach, which is advocated by the Harman Report.

2.5.4 This study draws on a range of evidence sources including land registry transaction data, market reports and databases, evidence from previous developments and area and site-specific viability assessments. Residential values and profit targets have been compiled by Housing Futures Ltd, non-residential values by Three Dragons, build costs by Turner & Townsend, with other elements compiled by Three Dragons in discussion with the project team and the GLA drawing on their knowledge and information as strategic planning authority for London.

2.5.5 The residual land value assessments carried out in this study to model the viability of case studies have been undertaken using the GLA's Development Appraisal Toolkit. The range of development scenarios in London is so extensive that it is not possible to model each of these. In line with national guidance set out in the PPG, typical typologies have been developed and tested using a range of value and cost assumptions, to give a broad understanding of viability across London.

2.5.6 The approach to testing is based on a market-led approach and assuming a private developer. It is important to note that other models of development are likely to be subject to a different set of characteristics and assumptions. For example, Registered Providers (RPs) and public sector organisations can have access to lower cost finance, as well as land or various forms of subsidy and require lower levels of profit, all of which aids viability. Registered Providers may also benefit from funding and other support from the Mayor.

3 Market conditions

3.1 Overview

3.1.1 Market conditions in London remain buoyant with market values and rents of both residential and non-residential development generally higher than elsewhere in England. Following significant increases in residential values from 2012/13, following the financial crisis, Brexit has introduced a measure of uncertainty into the market. Some commentators point to a recent slowing of the residential market particularly for high value properties, however market reports indicate that further value growth is anticipated within the early years of the plan period.

3.1.2 This Chapter of the report provides a brief overview of current market conditions and then reviews available forecasts of market change.

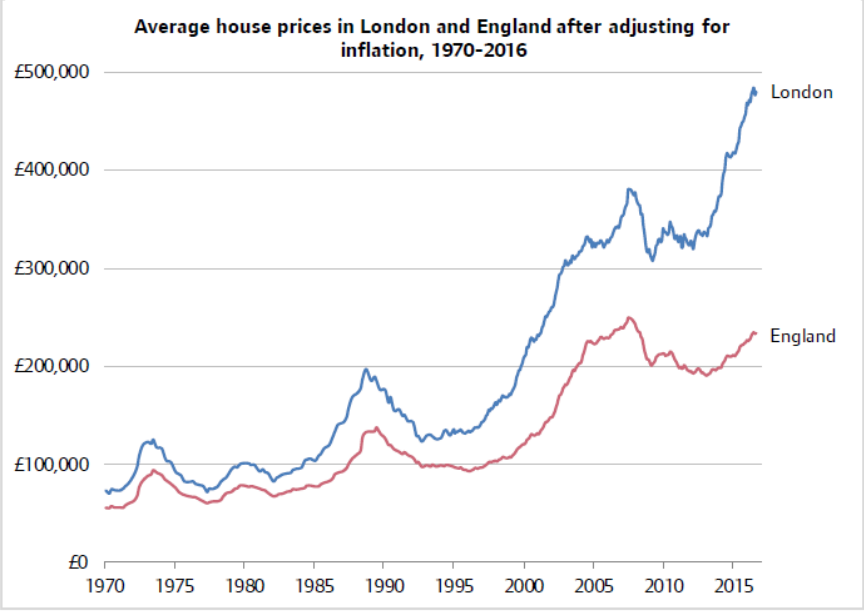
3.2 The housing market

Sale housing

3.2.1 Analysis of the London housing market draws on the GLA's own evidence prepared for the London Plan Review namely, "Housing in London: 2017- The evidence base for the Mayor's Housing Strategy", published in February 2017[25]. Housing in London provides a comprehensive review of the London market which we draw on for this Chapter of the report alongside other relevant sources.

3.2.2 Average house prices in London in 2016 were more than five times their 1970 level, after adjusting for inflation. Prices in London have increased at a much faster pace than elsewhere in the country and the 'value gap' is now far greater than it was historically.

Figure 3.1: Long term trends in house prices – London and England compared



[25] For further information on the housing market See also Economic Evidence Base for London 2016, GLA

3.2.3 London's average house price was £475,000 in September 2016, according to the new UK House Price Index. By September 2017 the average residential value had risen to £484,000.[26]

3.2.4 Prices are not uniform across London with average house prices higher in Inner West London and lowest in Outer East London. These differences were analysed in detail for this study, to identify areas of London with comparable values. We derived five market value bands which are described in detail in Chapter 5.

Build to Rent/Private Rent

3.2.5 Average private rents in London rose 2.4% in the year to November 2016, according to the ONS experimental index of private rents, down from a peak growth rate of 4.3% in August 2015 and slightly below the 2.5% rate of growth in the rest of England. When adjusted for inflation the recent fall in rental growth is sharper still.

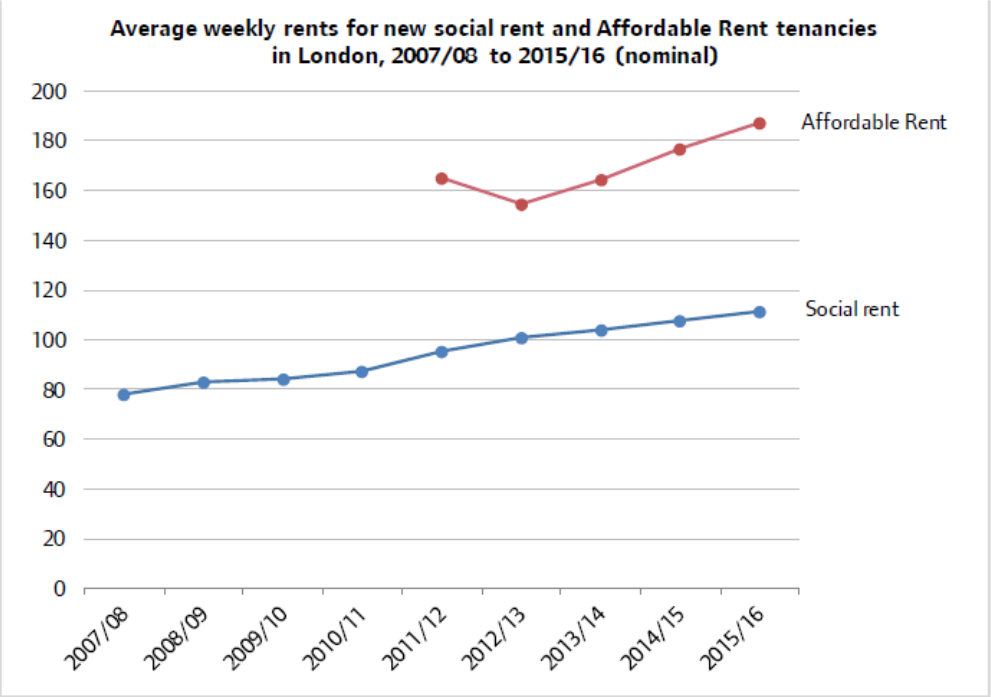
3.2.6 The median monthly market rent for a two-bedroom home in London in November 2016 was £1,500. Using a different source of data, pcm rents were, by the end of Quarter 2 2017, for studios £1100, 1 beds: £1390, 2 beds £1700, 3 beds £2430[27]. The ONS data highlights variations in rents across London. More than half of London boroughs had a median below this level with the lowest median monthly rent for a two-bedroom home at £1,000 in Bexley. This compares with a median rent in Kensington and Chelsea more than three times higher than the lowest median rent at £3,033. As with the sale values, this Viability Study has reflected variations in rental values across London, using the same five value bands as for market housing.

Affordable Housing - Social and Affordable Rents

3.2.7 Affordable Rent was introduced in London (following a national policy change) in 2011/12. Affordable Rent is capped at 80% of open market rent and rents are therefore typically higher than traditional social rents. But for both affordable rented tenures, rents have increased over the recent past, more so for Affordable Rent than for social rent. The Mayor has introduced London Affordable Rent based on formula rent cap figures for social rents and which have been used as the basis for testing in this study.

[26] Land Registry House Price Index. The September average value was very similar to the HPI value for June/July – the date for the values used in this report for the viability testing undertaken
[27] Quarterly Analysis: Build to Rent, Molior August 2017

Figure 3.2: Affordable and social rents 2007/08- 2015/16



3.2.8 The Mayor introduced London Living Rent earlier in 2016 and is described by the GLA as, '….***a*** *new type of affordable housing for middle-income Londoners.'* Ward-specific rent levels for London Living Rent homes are based on one-third of median gross household income for the local borough. These have been included as one type of affordable housing in the viability testing undertaken.

3.3 Commercial uses

3.3.1 "The Economic Evidence Base for London 2016" (Produced by the GLA) provides a high-level summary of rental values per annum for different types of activities across London's prime property markets - as follows:

- In 2016 office rents ranged between £430 and £1,300 per square metre (£40 to £120 per square foot);
- Industrial rents ranged between £118 and £172 per square metre (£11 to £16 per square foot) across London's different submarkets;
- Retail rents for 'Band A' (shopfront) space ranged between £4,800 and £18,800 per square metre (£450-£1750 per square foot) in the main central London shopping areas.

3.3.2 Unlike office and retail space which tends to cluster centrally, industrial and warehousing space in London tends to concentrate in particular 'wedges' or 'pockets' with easy access to markets in and out of London. The spatial variations in non-residential uses (as with residential space) have been assessed in detail in order to test the viability of different types of non-residential developments, in different value areas of London.

3.4 Forecasts of future market change

Policy guidance on the use of forecasts

3.4.1 Planning guidance set out in PPG states, 'Current costs and values should be considered when assessing the viability of plan policy. Policies should be deliverable and should not be based on an expectation of future rises in values at least for the first 5 years of the plan period.' [28] However, when considering individual proposals, and where a scheme requires phased delivery over the medium and longer term, local planning authorities can take into account, '…..changes in the value of development and changes in costs of delivery'. PPG states that where forecasts are used, they should be, '…..based on relevant market data……agreed between the applicant and local planning authority wherever possible.'[29]

3.4.2 Testing the impact of potential changes in costs/values is therefore not required for plan making purposes. However, given the length of the life of the London Plan, a series of sensitivity tests were undertaken for a sample of schemes, to assess the impact of potential changes in costs and values over the medium term, the development period would be 10 years or more (i.e. to 2027 and beyond). The basis for the sensitivity testing is set out below.

Residential – market values

3.4.3 There is a number of sources of forecasts of market values we have reviewed to arrive at a view of future change in market values.

3.4.4 The Office for Budget Responsibility (March 2017) considers that there will be continuing upward pressure on prices nationally with prices rising faster than average earnings, at about 5.3% per annum 2017 to 2021 (using a simple average). However, OBR does not produce separate forecasts for London, where the market has seen more rapid price increases in the past. We therefore reviewed the forecasts of a number of (London based) commentators to assess their views of likely future changes. Some commentators provide forecasts for different 'bands' within London but these will vary between commentator, so drawing overall conclusions has to be treated with caution. The latest published forecasts (at the time of writing) of commercial organisations commentating on future London prices are set out in the table below.

[28] PPG Paragraph: 008 Reference ID: 10-008-20140306
[29] Paragraph: 017 Reference ID: 10-017-20140306

Table 3.1: Forecasts of House Price Change

		2018	2019	2020	2021	Average 2018-21[30]
Savills (October 2017)	General London	3.0%	4.5%	2.0%	1.0%	2.6%
Savills (October 2017)	Central London	0.0%	8.0%	5.0%	6.5%	4.9%
Savills (October 2017)	Other prime London	0.0%	6.0%	4.0%	5.0%	3.8%
Savills (October 2017)	Suburban London	0.0%	5.5%	4.0%	6.0%	3.9%
Knight Frank (May 2017)	General London	2.0%	2.5%	3.0%	5.5%	3.3%
Knight Frank (May 2017)	Prime Central London E	3.5%	3.0%	3.5%	4.0%	3.5%
Knight Frank (May 2017)	Prime Central London W	1.5%	2.0%	3.0%	3.5%	2.5%
Knight Frank (May 2017)	Prime Outer London	2.5%	3.0%	3.0%	4.0%	3.1%
OBR (March 2017)	UK	4.0%	4.4%	4.5%	4.6%	4.4%
CBRE (2016)	London	4.0%	6.0%	6.0%		5.3%
CBRE (2016)	Prime Central London	5.0%	6.0%	6.0%		5.7%
BNP (2016)	London	1.8%	1.8%	1.8%		1.8%
Cushman & Wakefield all (February 2016)	Prime Central London	4.5%	5.5%	4.5%		4.8%
Cushman & Wakefield all (February 2016)	Inner London	5.0%	6.0%	4.5%		5.2%
Cushman & Wakefield all (February 2016)	Outer London	5.0%	4.5%	4.5%		4.7%
Cushman & Wakefield new (February 2016)	Prime Central London	5.0%	4.5%	4.0%		4.5%
Cushman & Wakefield new (February 2016)	Inner London	5.0%	5.0%	4.5%		4.8%
Cushman & Wakefield new (February 2016)	Outer London	5.0%	5.0%	4.5%		4.8%
Average London		3.5%	4.2%	3.6%	4%	3.9%
Average prime central London		3.3%	5.1%	4.7%		4.3%
Average inner London		3%	6%	4%		4.3%
Average outer London		3%	4%	4%		3.6%
Median all						4.4%

3.4.5 It is clear that commentators are not uniform in their forecasts – possibly reflecting the uncertainty in the run up to Brexit.

3.4.6 Where a distinction is made by the commentators between price rises in different parts of London, higher rates of increase are generally shown for central London than outer London. On this basis, one option would be to use alternative growth rates of 4.3% pa for prime central,

[30] Where no forecast for 2021 – the average is for 2018-2020

4.3% for inner and 3.6% for outer. But it is equally credible to use an all London mean average of 3.9% pa increase or median average of 4.4%. Taking a relatively conservative view of the forecasts therefore, we have used a single growth rate of 4% per annum across London.

Residential - private rent

3.4.7 There are fewer forecasts for private rents (provided by Savills and Knight Frank only). Their most recent forecasts are summarised in the table below.

Table 3.2: Forecasts of Private Rent Changes

		2018	2019	2020	2021	Average 2018-21
Savills	General London	5%	6%	5%	5%	4.9%
Savills	Prime London	0%	1%	3%	3%	1.8%
Knight Frank	Prime Central London East	2%	4%	3%	3%	2.9%
Knight Frank	Prime Central London West	1%	2%	2%	2%	1.8%
Knight Frank	Prime Outer London	3%	3%	3%	3%	2.6%
	Average					2.8%
	Median					2.6%

3.4.8 Again, there are differences in views between the commentators and we have concluded that a it is reasonable to opt for an average value – using 2.5% in this case as a conservative approach to forecast rents increases.

3.4.9 Note that these are short term forecasts are unlike the discounted cash flow assumptions used for estimating values for rented and affordable housing in a 60 year model based on long term economic forecasts (See Annex B).

Residential – Affordable Housing

3.4.10 In the case of shared ownership and discount market rent, values will adjust to reflect changes in the related market product – e.g. shared ownership will follow open market values.

3.4.11 For London Living Rent and Affordable Rent, there are various options for forecasting future growth in rentals.

3.4.12 One option is to use forecasts for each tenure based on the mechanism by which the rents have been derived:

- London Living Rent – by reference to median household incomes which could reasonably be assumed to be CPI + 1.25% (i.e. 3.25%);[31]
- London Affordable Rent – by reference to government's formula rent caps which have been agreed (October 2017) at CPI+1% from 2020 (i.e. 3%).[32]

3.4.13 An alternative and slightly more conservative option is to increase LAR and LLR rents by forecast inflation rates (using CPI). This is a simple approach but allows for some increase in

[31] This assumes that median household incomes will increase at a slightly lower rate than average earnings. The Office for Budget Responsibility forecast (in March 2017) that average earnings will increase by 3.5% p.a. (with CPI at 2.0%). We assume that the rate of earning growth for lower income households will be a little lower than average.

[32] It should be noted that social rents have been decreasing by 1% per annum through to 2020/21 in accordance with government policy announced in the Summer Budget 2015.

values over the future. Using OBR forecasts, the forecast increase per annum for LLR and LAR is 2% pa (i.e. the Bank of England's target). This more conservative approach is that used in the study.

Non-residential uses

3.4.14 There is a more limited range of forecasts for non-residential values and we have reviewed a range of reports including, the report from IPF Research, "Investment Property Forum - UK Consensus Forecasts". This provides national forecasts but includes specific reports on certain London values.

3.4.15 Overall, IPF reports 'mixed prospects' for 2018. For offices, the report states that, 'Whilst the five-year average growth rate for the West End may match the Office average of 0.2% per annum, the annualised average for City offices remains negative, ….'. By contrast, the Industrial sector is the only market predicted to deliver on average positive growth in each of the five years surveyed, however this was a countrywide figure.

3.4.16 A review of agent reports on the commercial property market (Cushman & Wakefield, JLL, Savills etc.) shows a consensus that the office rents are likely to be static or reduce marginally over the next three years.

3.4.17 In the logistics sector (in particular urban logistics) there has been a strong performance with future growth potential if the trend continues towards purpose built stock.

3.4.18 In terms of the hotel sector, the weak pound and London's attractions mean the tourism sector is currently performing well and whilst there is interest in investment, especially from Asia/Pacific and the Middle East, commentators are unclear as to whether trends will continue.

Forecast of increases in costs

3.4.19 There are a number of forecasts of build costs through to 2021. These have been collated by Turner & Townsend and include their own forecast. The forecasts are presented in the table below.

Table 3.3: Forecasts of growth in build costs or construction tender price inflation

Author	When Published	2018	2019	2020	2021
Currie & Brown	2017 Q2	2.0%	1.6%	2.2%	2.6%
Faithful & Gould	2017 Q2	3.0%	3.0%		
G&T	2017 Q2	1.5%	1.5%	2.0%	3.0%
Gleeds	2017 Q2	2.6%	3.4%	3.7%	
Mace	2017 Q1	0.5%			
Turner &Townsend	2017 Q1	2.2%	2.9%	3.2%	3.5%
Average		**2.0%**	**2.5%**	**2.8%**	**3.0%**

3.4.20 There is a mixed picture of forecasts although within a general pattern of increase costs each year and increases that accelerate post 2019. Given the complexity of the forecasts and considering the patterns of forecasts, we use an annual cost increase of 2.5% pa.

4 Approach to the viability testing

4.1 Uses included in the testing

4.1.1 The uses tested are listed below and focus on developer-led forms of development rather than publicly led uses such as new infrastructure facilities or development types that are not common such as new port facilities:

Residential

- Residential for sale
- Build to rent (BtR)
- Shared Living

Other residential

- Sheltered housing
- Extra care housing
- Care homes
- Student accommodation
- Purpose Built Shared Living (Shared Living)

Mixed Use

- Mixed use residential, commercial, retail and community uses
- Mixed use residential and industrial

Non-residential

- Offices
- Industrial
- Retail/leisure (as part of mixed use schemes)
- Hotels (budget and luxury)

4.2 Case study selection

4.2.1 The study uses a case study approach for the testing undertaken. The case studies selected (for residential and non-residential uses) reflect the typology of sites likely to come forward over the life of the London Plan, rather than testing all possible future site types.

4.2.2 The case studies selected for testing were identified in discussion with the GLA. They are not intended to represent specific development proposals but to reflect typical forms of development that are likely to come forward over the plan period. The selection process was informed by the Strategic Housing Land Availability Assessment (SHLAA) focusing on:

- Alternative densities (and therefore area of the scheme)
- A range of building heights
- Site area

- Location
- Land use mix

4.2.3 Not all the case studies are applicable to all areas of London and so were only tested in specific value bands (as described in the next Chapter). Some typologies were tested in values areas despite market information indicating that they are unlikely to be developed in these sorts of locations.

4.2.4 The case studies are set out below, organised in the four broad groups of development types used in this report.

Table 4.1: Residential case studies

	Use	Description	Dws	Site area (ha)	Storeys	Density (dph)
Res1	Residential for sale	Small site. Lower density mix of terrace and flats	8	0.13	3 (2-3)	64
Res2	Residential for sale	Small site - relatively low density	24	0.20	5 (4-5)	120
Res3	Residential for sale	Med sized site. Mix of terrace and flats.	80	1.00	4 (2-4)	80
Res4	Residential for sale	Med sized site	80	0.32	8 (6-8)	250
Res5	Build to Rent	Med sized site	80	0.32	8 (6-8)	250
Res6	Residential for sale	Larger lower density scheme	150	1.25	4 (3-4)	120
Res7	Residential for sale	Mid-sized flatted scheme	300	0.86	9 (7-9)	350
Res8	Build to rent	Large scheme	300	0.86	9 (7-9)	350
Res9	Residential for sale	Lower density scheme with mix of terrace and flats	300	4.69	3 (2-3)	64
Res10	Residential for sale	Large higher density scheme	750	2.88	8 (6-8)	260
Res11	Residential for sale	Large very high-density scheme	750	1.67	15 (10-15)	450
Res12	Build to rent	Large very high-density scheme	750	1.67	15 (10-15)	450
Shelt1	Sheltered	Self-contained sheltered scheme	80	0.90	3	n/a
EXC1	Extra care	Self-contained extra care scheme	80	1.10	3	n/a

Dws – dwellings

4.2.5 Storey heights for the typologies illustrate the range of building heights that can be anticipated in a scheme of this type. The single figure is the building height that was modelled. In all cases, it is at the upper end of the range of heights for the development type – which will affect build costs (which are higher for taller buildings) and market values (for schemes of greater than 10 storeys).

Table 4.2: Other residential case studies

Ref.	Use	Description	Floorspace (sq m) / beds	Site area (ha)	Storeys
CH1	Care Home (C2)	Scheme within a tall building	3,000 60 beds	N/A	10-20
CH2	Care Home (C2)	Self-contained scheme of 2 storey	3,000 60 beds	0.38	2
SR1	Student Residential	9 storey building	6,300 300 beds	0.38	9
SR2	Student Residential	15 storey building	6,300 300 beds	0.30	15
SL1	Shared Living	New type of rented accommodation with small room sizes and communal space.	8,400 300 beds	0.38	10

Table 4.3: Mixed use case studies[33]

Ref.	Use	Description	Non-residential floorspace (sq m)	Dws	Site area (ha)	Storeys
MU1	Residential/ retail/ leisure/ office	Ground floor mixed uses with residential above	4,000 (r&l) 5,000 (o)	690	1.8	10 (8-10)
MU2	Residential/ retail/ leisure/ office	Ground floor mixed uses, office on lower floors and residential above	6,000 (r&l) 9,000 (o)	1,500	3.33	10 (8-10)
NR10	Residential / industrial (B8) mixed use	Mixed use industrial intensification with 4 floors of B8 adjacent to residential blocks	20,000 (i)	350	2.00	4 B8 & 8 residential
NR11	Residential / industrial (B1c) mixed use	Mixed use industrial intensification with 1 floor of B1c with residential above and adjacent	1,000 (i)	86	0.35	1 B1c & 4-8 residential

Non-residential case studies

4.2.6 As with the residential and mixed-use case studies, case studies for non-residential uses are hypothetical schemes. They were selected to represent the broad range of typologies likely to be developed over the life of the London Plan and are not of any particular development.

4.2.7 The non-residential case studies are set out in the following table. The description includes the case study's net developable site area and the amount of floorspace (and bedrooms in the case of the hotels) typical of this type of site in different areas of London.

[33] Retail development has been tested as part of mixed use schemes as town centre retail development is typically accompanied by other uses and the draft plan restricts single use retail development on residential and mixed use sites to make best use of land.

Table 4.4 Non-residential case studies

Ref.	Use	Description	Floorspace (sq m) / bed	Site area (h)	Storey
NR1	Office	Small/ mid office	7,500	0.2	5
NR2	Office	Mid/ large office	30,000	0.3	20
NR3	Office	High density large scale office	70,000	0.3	40
NR4	Hotel	Budget (28sq m gross room)	4,200 120 beds	0.15	6
NR5	Hotel	Budget (35sq m gross room)	3,360 120 beds	0.15	6
NR6	Hotel	4* Luxury	3,600 80 beds	0.11	6
NR7	Industrial	Logistics/light industrial	1,000	0.2	1
NR8	Industrial	Logistics/light industrial	5,000	1.0	1
NR9	Industrial	Logistics/light industrial	10,000	2.0	1

5 Testing assumptions – residential

5.1 Tenures used in the testing

5.1.1 The residential tenures used for the testing are as follows:

- Market sale
- Market rent
- Discount Market Rent
- London Shared Ownership
- London Living Rent
- London Affordable Rent

5.1.2 A short description of each of the above residential tenures is provided in Annex A

5.2 Mix of dwellings used in the case studies

5.2.1 The case studies used for the residential testing were set out in Chapter 4. A mix of dwelling types was devised, which varied with the density of the scheme, drawing on analysis of the London Development Database, with reference to previous research studies e.g. Lessons From Higher Density Development[34]. Dwelling mixes used generally are set out in the table below.

Table 5.1: Dwelling mixes used for the residential case studies (Sale and Build to Rent)

Bedrooms	80 dph and under	Over 80 dph
1	25%	32%
2	30%	46%
3	30%	17%
4	15%	5%

5.2.2 Case studies Res1, Res3 and Res9 are lower density schemes modelled with a mix of flats and terrace houses. Their dwelling mix is shown in the next table.

[34] , Report to the GLA, by Three Dragons and others, September 2016

Table 5.2: Dwelling mixes used for Res1, Res3 and Res9

1 bed flat	20%
2 bed flat	25%
3 bed terr	25%
4 bed terr	30%

5.2.3 For the sheltered housing scheme, Shelt 1, the mix of dwellings used was based on guidance from the Retirement Housing Group[35] and was 50% x 1 bed flat and 50% x 2 bed flat. The same mix was used for the extra care scheme (EXC1).

5.3 Size of dwellings

5.3.1 The size of dwelling affects both their market value (as sale and market rent values were assessed on a per sq m basis) and their development costs. Dwelling sizes were drawn up for M4(2) and M4(3) dwellings. The M4(2) unit sizes were based on existing GLA dwelling standards which are being retained. The requirement for M4(3) units is also set out in the current London Plan. The unit sizes adopted for testing are based on those used evidence for the current Plan.

Table 5.3: Size of dwelling – sq m - Gross Internal Area (GIA)

	Bedrooms	M(4) 2	M4(3)
Flats	1	50	58
	2	70	87
	3	95	103
	4	108	118
Terrace	3	102	119
	4	115	135

5.3.2 For the flats, a percentage uplift on the unit floor area was made to allow for circulation space and other common areas. This was based on GLA monitoring of recent schemes and previous research into higher density residential development in London.[36] The allowances varied with the number of storeys assumed and were as follows:

- 1-5 storeys 17.6% uplift
- 6-15 storeys 25.0% uplift
- 16 storeys and above 33.3% uplift

5.3.3 For both the sheltered and extra care housing, the 1 bed flats were modelled with a GIA of 50 sq m and for the 2 bed flat, of 70 sq m (and 58 sq m and 87 sq m respectively for units at M4(3) standard). 10% of units have been modelled at M4(3) standard. A 20% allowance for circulation/communal space was assumed for the sheltered housing scheme and 35% for the extra care scheme.[37]

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35 Community Infrastructure Levy and Sheltered Housing/Extra Care Developments A Briefing Note on Viability, Prepared For Retirement Housing Group by Three Dragons May 2013, Amended February 2016

36 Lessons From Higher Density Development, Report to the GLA, by Three Dragons and others, September 2016, This study used

37 Room sizes compatible with M4(2) and M4(3) accessible dwelling standards have been applied. Additional circulation space has been allowed for relating to communal areas and support services

5.4 Values - Market housing

New Build market values and the market value bands

5.4.1 The set of the market values in London, used in the report, was derived from an analysis of Land Registry data for the period 2015 and 2016 uplifted to end June 2017[38].[39] By comparing sale prices with the dwelling's Energy Performance Certificate, an estimate of the values on a £ per square metre can be generated.

5.4.2 The house price analysis identified 5 bands of common values (A-E). These value bands have been determined from a statistical analysis of matched addresses of price paid from Land Registry Price Paid Data and floor area from Energy Performance Certificate data for 27,000 sales in London in 2015 and 2016. Five value bands represent the range of London's house prices by floor area. In practice we are aware that within any given location there will be pockets of higher and lower values where the viability will be significantly different than the surrounding location and in these cases a higher or lower value band would apply.

5.4.3 The full set of base values per sq m are set out in the table below. Annex B provides a detailed description of the methodology for assessing London's newbuild sales prices and the distribution of these prices per square metre (bearing in mind that different value bands can apply in one location).

Table 5.4: Market values by value bands– per sq m and by dwelling type[40]

Value bands	A	B	C	D	E	
Value as £ per sq m	£ 20,000	£ 12,000	£ 8,250	£ 6,250	£ 4,250	
Value per unit						Unit GIA - sq m
1 bed flat	£ 1,000,000	£ 600,000	£ 413,000	£ 313,000	£ 213,000	50
2 bed flat	£ 1,400,000	£ 840,000	£ 578,000	£ 438,000	£ 298,000	70
3 bed flat	£ 1,900,000	£ 1,140,000	£ 784,000	£ 594,000	£ 404,000	95
4 bed flat	£ 2,160,000	£ 1,296,000	£ 891,000	£ 675,000	£ 459,000	108
3 bed terrace	£ 2,040,000	£ 1,224,000	£ 842,000	£ 638,000	£ 434,000	102
4 bed terrace	£ 2,300,000	£ 1,380,000	£ 949,000	£ 719,000	£ 489,000	115

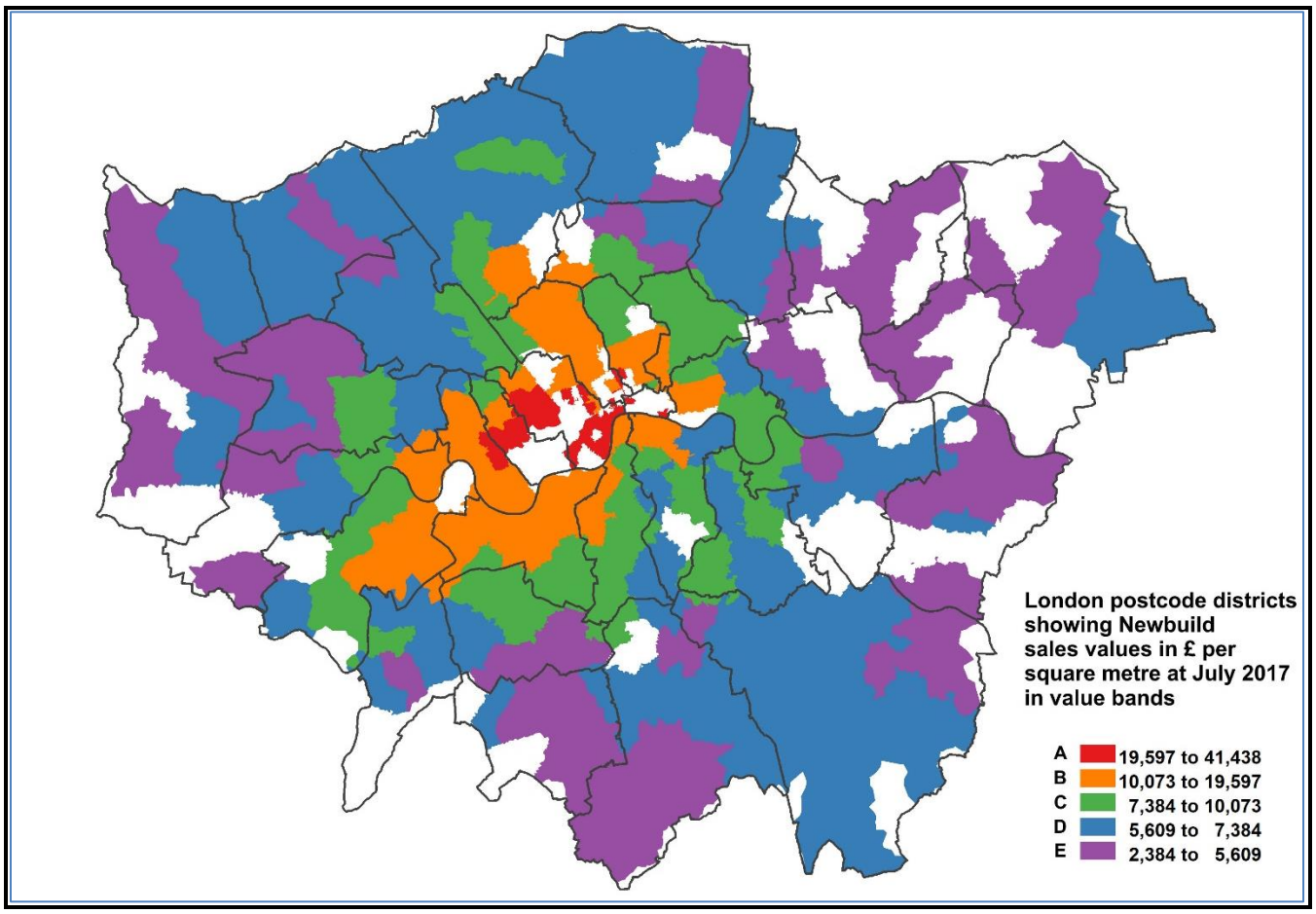
5.4.4 Using address details from the same data we are able to show the approximate geographical distribution of these five value bands by postcode district. The map below shows the average sales values by £ per sq m for each postcode district:

[38] Build and other costs aligned with this date

[39] It is recognised that there are issues in using Land Registry data wholesale because it lags in registering newbuild sales by 3 to 9 months, and dwellings are categorised as being of four types (Detached, Semi-detached, Terraced, and Flats). These four types do not distinguish by dwelling size (floor area) or by build type (especially height). In London, in particular, prices paid are driven more by floor area and storey height for a given location.

[40] Values are rounded – as they are in all subsequent tables of values

Map 5.1: Distribution of sales values by postcode district



5.4.5 Some postcode areas had a small number of newbuild sales or were not primarily residential areas. Annex B gives more detail as to why no values are shown in the white areas of this postcode map.

5.4.6 Previous research showed that there is a relationship between the market value of flats and storey height.[41] This relationship was analysed for this Study [See Annex C] and to aid the testing process, the relationship was translated into an average % uplift in value, depending on the number of storeys in the buildings in the case study.

5.4.7 These uplifts were applied to open market transactions. The research on values and heights revealed that in taller buildings the lower floors were used for affordable housing types, and sometimes for retail and commercial uses. We assumed that no affordable housing was provided above the 10th floor and therefore no height uplift was applied to those types.

M4(3) units

5.4.8 10% of residential units were assumed to be M4(3) wheelchair user dwellings, which is the accessible housing standard provided by Part M vol. 1 of the Building Regulations. On a like

[41] For example, see Lessons from Higher Density Development, Report to the GLA, by Three Dragons and others, September 2016, Chapter Nine

for like basis, these units are larger, and their development costs will be higher. But larger units also attract a market premium and we have allowed for this. The market values assumed for the M4 (3) units are set out below.

Table 5.5 Market value areas for M4(3) units – per sq m and by dwelling type

Value bands	A	B	C	D	E	Unit GIA - sq m
1 bed flat	£ 1,160,000	£ 696,000	£ 479,000	£ 363,000	£ 247,000	58
2 bed flat	£ 1,736,000	£ 1,042,000	£ 716,000	£ 543,000	£ 369,000	87
3 bed flat	£ 2,052,000	£ 1,231,000	£ 846,000	£ 641,000	£ 436,000	103
4 bed flat	£ 2,354,000	£ 1,413,000	£ 971,000	£ 736,000	£ 500,000	118
3 bed terrace	£ 2,387,000	£ 1,432,000	£ 985,000	£ 746,000	£ 507,000	119
4 bed terrace	£ 2,691,000	£ 1,615,000	£ 1,110,000	£ 841,000	£ 572,000	135

Ground rents

5.4.9 For the modelling, it was assumed that all market and shared ownership properties[42] would pay a ground rent and that this will generate a capital value (to be added to the market value of the property). Ground rents represent an income stream that can be sold by a developer to specialist investors and represent a revenue into addition to sales proceeds. Ground rents vary from a peppercorn to 0.5%pa of capital value with the amount doubling every 15 to 20 years. These are the extremes and the higher and faster increasing amounts are subject to government attention and recent consultation on the extent of the problem[43]. More frequently amounts for apartments are set at 0.1%pa of capital value and indexed to RPI. For this study we used an average of 0.07%pa indexed to RPI. This average recognises that not all developments result in a ground rent being charged.

5.4.10 The present (capitalised) value of the stream of indexed ground rents typically amounts to between 1.9%% to 3.5% of the open market dwelling value with higher value dwellings charged a proportionately higher ground rent.

5.4.11 Ground rents for affordable housing products are lower where they exist, reflecting lower capital values of these dwellings. We have not included a capitalised amount for these as a development revenue for developers. We have, however, included an annual amount as a operating cost for the provider. Both of these assumptions represent a cautious approach, to the price paid by providers and received by developers for these products, for viability testing.

[42] On a pro rata basis
[43] Tackling unfair practices in the leasehold market, DCLG, July 2017

Table 5.6: Capitalised ground rents by value band for Market Open Sale

Value bands	A	B	C	D	E
1 bed flat	£30,100	£16,100	£10,000	£6,900	£4,000
2 bed flat	£44,800	£24,400	£15,400	£10,800	£6,400
3 bed flat	£64,100	£35,200	£22,400	£15,900	£9,700
4 bed flat	£74,500	£41,000	£26,200	£18,700	£11,500
3 bed terrace	£69,700	£38,300	£24,500	£17,400	£10,600
4 bed terrace	£80,200	£44,100	£28,300	£20,200	£12,400

Build to Rent

5.4.12 Evidence for achieved rental values in newly completed Build to Rent schemes is not recorded in any comprehensive or officially recognised form. There are, however, several sources from which this data can be gathered. The first group of sources are the asking rents advertised by agents and on line; the second is the data gathered by consultancies such as Molior; and the third is to identify the open market sales value and to apply a Gross Yield. All three methods have been used, and the results were mutually supportive.

5.4.13 Details of the methodology used to provide a final estimate of investment value of each Build to Rent typology and in each Value Zone and the sources of evidence used are provided in Annex B. The resultant gross rents and gross yields for Build to Rent by value band and dwelling size were:

Table 5.7: Build to Rent values by value band

Build to Rent – rent per week (excluding service charges) £s						
Band	1 bed	2 bed	3 bed	4 bed	3 bed terr	4 bed terr
A	672	884	1,139	1,267	1,208	1,335
B	451	585	747	830	792	874
C	345	439	554	613	585	644
D	288	360	448	493	472	518
E	230	279	340	372	357	389
Build to Rent Goss Yields (July 2017) %s						
Band	1 bed	2 bed	3 bed	4 bed	3 bed terr	4 bed terr
A	3.51	3.30	3.13	3.06	3.09	3.03
B	3.93	3.63	3.42	3.34	3.38	3.31
C	4.37	3.97	3.69	3.59	3.63	3.54
D	4.81	4.29	3.94	3.82	3.87	3.76
E	5.65	4.90	4.40	4.23	4.30	4.15

5.5 Values for Affordable Housing

5.5.1 The sources of rental values for **London Affordable Rent** and **London Living Rent** are set in policy and are described in Annex B and, after adjustment for service charges, the values used for testing are:

Table 5.8: London Affordable Rent by value band

London Affordable Rent – rent per week (excluding service charges) £s						
Band	1 bed	2 bed	3 bed	4 bed	3 bed terr	4 bed terr
A	144	153	161	170	161	170
B	144	153	161	170	161	170
C	144	153	161	170	161	170
D	144	153	161	170	161	170
E	144	153	161	170	161	170

Table 5.9: London Living Rent by value band

London Living Rent – rent per week (excluding service charges) £s						
Band	1 bed	2 bed	3 bed	4 bed	3 bed terr	4 bed terr
A	270	297	325	354	360	390
B	205	232	250	279	280	310
C	180	208	226	245	250	270
D	175	193	212	231	230	250
E	180	198	217	236	230	250

5.5.2 **London Shared Ownership** maximum values are also set by an affordability policy. A limit is set of 40% of a maximum household gross income of £90,000. This resulted in the following input values for testing for a 2 bed dwelling:

Table 5.10: Shared ownership values by value band

London Shared Ownership		
Band	**% share sold**	**% rent on retained equity**
A	-	-
B	-	-
C	35	2.5
D	40	2.75
E	40	2.75

5.5.3 Shared ownership products in Value Bands A and B are not affordable

5.5.4 The **Discounted Market Rent** product must meet the affordability policy of being no more than 40% of a household's gross income of £60,000. These translated into a discount to market rent as shown in the table below:

Table 5.11: Discounted Market Rent by value band

Discounted Market Rent	
Band	**Discount to market %**
A	40
B	60
C	80
D	80
E	80

5.5.5 Registered Providers can support new debt based on the resultant discounted cash flow investment value. In addition, RPs can contribute from resources generated on other activities

to cross subsidise the price paid to the developer. This cross-subsidy has become substantial in London since 2014 as the market improved and helped associations to generated surpluses from open market sales and shared ownership activity. We have estimated the amounts of cross subsidy by analysis of the published accounts of London's largest RPs. Details of this estimate are provided in Annex D. Cross subsidy is applied to the social housing products: London Affordable Rent, London Living Rent, and London Shared Ownership, to increase supply.

5.6 Build costs

Base build costs

5.6.1 Build costs can vary due to location, development type, proposed tenure type, proposed tenure mix, storey height, and building use. BCIS can be used to provide benchmarking information for build costs. A BCIS factor can also be utilised to adjust data for its location. It should be noted that BCIS has its limits and data samples provided can have a wide spread between their minimum and maximum rates.

5.6.2 In order to provide current benchmarking information in the locations required, Turner & Townsend utilised residential schemes from its in-house benchmarking data base. These schemes vary in location, storey height and base dates. Schemes utilised were London based and varied from mixed use development to single use developments within the last three years.

5.6.3 Where Turner & Townsend data was not available for a particular location, data from other locations was adjusted utilising the relevant BCIS location factors. Base dates for all data was adjusted for inflation to Q3 2017.

5.6.4 Turner & Townsend provided benchmarking costs for different value bands and building heights. The former reflects the fact that, on a like for like basis, schemes in higher value areas will generally be of a higher specification (and cost). Costs also vary between tenures with build costs for affordable housing generally at a lower cost than for market housing (whether for sale or rent). No fit-out specifications were available at the current design stage. Sales values, divided into London borough bandings, were utilised in an attempt to identify schemes with fit-out costs commensurate with the sales values provided.

5.6.5 The costs provided include base construction costs as well as services, preliminaries and contractor's overhead and profit. For completeness a list of excluded costs is set out in Annex E.

5.6.6 For all the residential uses (as well as Co-Living, Student and Care Homes) the build costs relate to the shell and core construction and fit out.

5.6.7 Turner & Townsend provided a table of benchmarking bands for each residential type, split by storey height and location. This data was gathered from a range of Turner & Townsend London based projects and is set out below:

Table 5.12: Build cost ranges used in the study - £s per sq m (for sale and market build to rent)

Value bands	A	B	C	D	E
1 to 3 storeys	£2,695 to £2,965	£2,760 to £2,825	£2,600 to £2,900	£2,475 to £2,735	£2,380 to £2,720

Value bands	A	B	C	D	E
4 to 10 storeys	£2,855 to £3,140	£2,925 to £2,990	£2,775 to £3,100	£2,625 to £2,900	£2,555 to £2,915
11 to 20 storeys	£3,075 to £3,380	£3,140 to £3,220	£2,960 to £3,300	£2,825 to £3,120	£2,760 to £3,150
21 storeys and above	£3,250 to £3,550	£3,300 to £3,400	£3,250 to £3,350	£2,950 to £3,300	£2,900 to £3,300

5.6.8 From the above ranges the higher end of the ranges have been applied in bands A and B (reflecting the higher specification of developments in these higher value areas), a point towards the lower end of the range and which represented the benchmark value in Band C and at the lower end of the range in bands D and E, reflecting lower fit out and specification in less valuable areas. The build costs used for the viability testing are set out in the table below. The costs for terraced housing provided by Turner & Townsend of £1865 per sq m was used for the appropriate dwellings in the lowest density scheme modelled in lower value bands. By comparison BCIS costs are significantly lower at £1518 per sq m for a 1-3 storey flats and £1284 per sq m for a three storey terrace.[44]

Table 5.13: Build costs used in the study - £s per sq m (for sale and market build to rent)

Value bands	A	B	C	D	E
1 to 3 storeys	£2,965	£2,825	£2,708	£2,475	£2,380
4 to 10 storeys	£3,140	£2,990	£2,883	£2,625	£2,555
11 to 20 storeys	£3,380	£3,220	£3,078	£2,825	£2,760
21 storeys and above	£3,550	£3,400	£3,254	£2,950	£2,900

5.6.9 Adjustments were made to the above costs for other residential tenures to reflect their lower levels of fit out [45] data. The adjustments made were:

- London Living Rent and London Affordable Rent – 10% reduction;
- London Shared Ownership – 5% reduction;
- In Build to Rent schemes – London Affordable Rent has a 10% reduction;
- But all other affordable tenures modelled in Built to Rent schemes have no reduction.

Additional costs

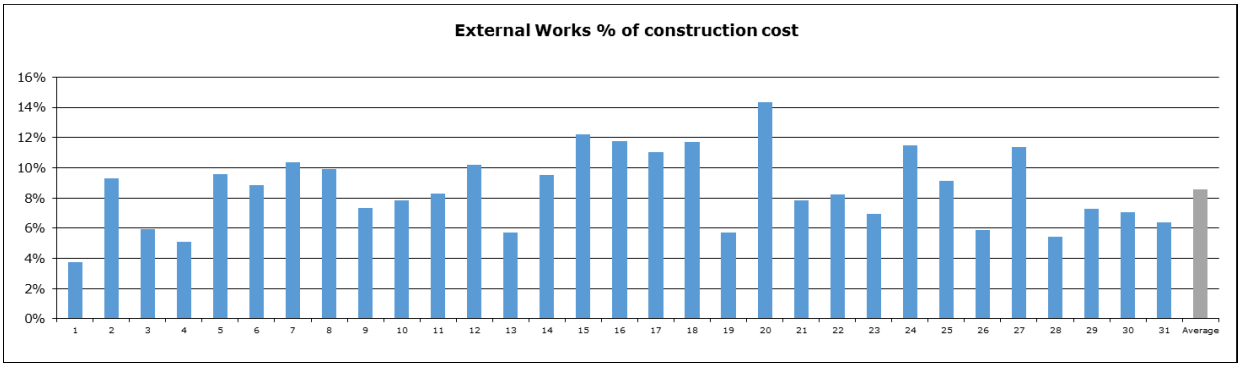
5.6.10 In addition to the base build costs, various costs were allowed for, either for all development types or in specific circumstances.

[44] Mean values for 'Outer London' – October 2017

[45] Study team experience shows lower fit out costs are seen in affordable dwellings in terms of lower cost kitchen and bathroom ranges, wall tiling and floor covering; and lower costs on communal entrance and access corridors. Where the tenures are a separate built form then often exterior features such as doors, windows and cladding are also lower cost.

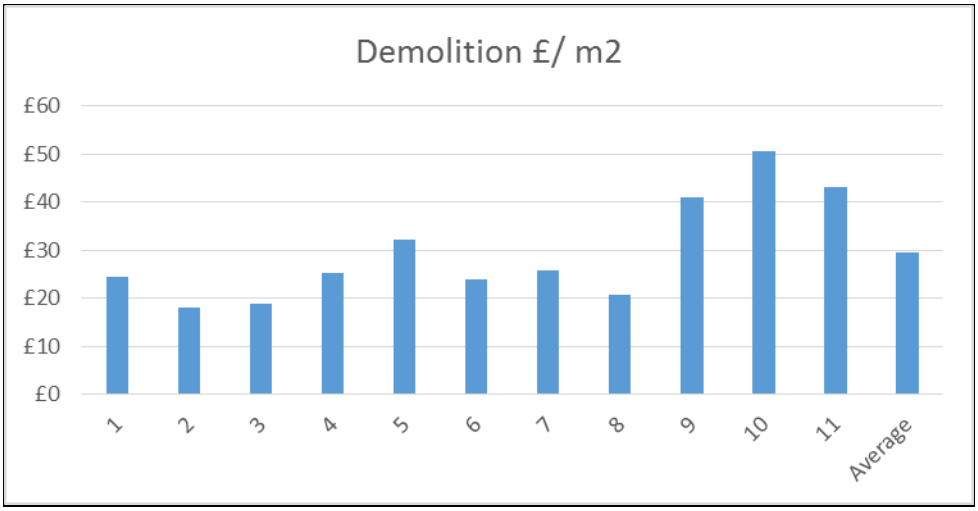
5.6.11 For all case studies, an allowance was made for external works (local hard and soft landscaping, external amenity space, play, footpaths, drainage and service diversions), but excluding costs for parking[46]. The data was collected using a range of asset types including residential, corporate offices, care homes and schools, and the £/m2 for external works was taken at 8.55% of base build costs.

Figure 5.1: % of costs as external works – cases from Turner & Townsend database



5.6.12 In the modelling, it was assumed that all developments tested would need to be on previously used land and that there would be pre-existing buildings to be demolished for development to take place. Therefore, a further allowance for the cost of demolition was made at £29 per sq m over the site area. This figure was drawn from Turner & Townsend's scheme database and it is acknowledged that this figure is an average cost only, and may over or under-estimate the actual costs of demolition on individual schemes depending on the specific site conditions.

Figure 5.2: Demolition costs as £s per sq m – cases from Turner & Townsend database



5.6.13 It is then recognised that schemes in London may need to meet a range of other 'abnormal' costs relating to, for example, service diversions, cut and fill/transportation, use of retaining walls, removal of underground services, amongst others. These costs are not generic across all development in London but are often encountered and they also can vary significantly in scale between sites. However, to assess the potential impact of these, Turner & Townsend were

[46] But see chapter 7 for explanation of treatment of parking costs for industrial schemes

asked to provide an 'abnormal cost allowance' based on their experience of past projects; this allowance was calculated as the equivalent to £183/sq m. The residential testing was undertaken both with and without this 'abnormal' cost given that abnormal costs will not apply in all cases. This is approximately 5-7% of base build costs. This figure was drawn from a blend of Turner & Townsend's scheme database and high-level allowances for potential site conditions, and it is acknowledged that this figure is an average cost only and may over or under-estimate the actual costs on individual schemes depending on the specific site conditions.

5.6.14 Some sites have other costs that are exceptional, reflecting the specific development found there, and which are not readily replicated for policy testing purposes – for example new transport or social infrastructure. While sites have been tested with onsite and offsite infrastructure requirements, scenarios with very substantial exceptional costs are atypical and lie outside the scope of this testing. Such schemes may be subject to site specific testing where the infrastructure cost is preventing delivery. It is also noted that, where there are exceptional development circumstances and associated costs, these may enhance market values and/or increase costs and it would be expected that these would be reflected in the land value for the site. Furthermore, it is understood that the GLA also engages with landowners and developers and provides funding to accelerate delivery on brownfield land such as in Housing Zones and facilitates funding bids from sources such as the Housing Infrastructure Fund.

Build out rates

5.6.15 The rate at which schemes are built out affects the residual value achieved. The impact of this varies with the pattern of costs incurred and revenue received. The longer costs exceed values in a scheme, and the development relies on borrowed money, the lower the out-turn residual value. Build out rates reflect discussions with the development industry for previous studies and with the GLA[47]. Where there are residential for sale and Build to Rent versions of the case studies, these use the same build out rates. However, this may be conservative as Build to Rent may deliver more quickly[48]. The build out rates used are set out in Annex F.

5.6.16 No allowance has been made for forward sales which can occur in London across a range of development types. However, the available evidence is too variable to allow for an average rate to be derived. Excluding the possibility of forward sales is a conservative approach which likely underplays the viability of some schemes.

5.7 Other development costs

5.7.1 There is a range of other development costs that apply to all the residential development case studies and which have been included in viability testing. These are set out in the table below.

[47] Greater London Authority, SHLAA Viability Assessment, Three Dragons and DLA, 2014. Greater London Authority Housing Standards Review: Viability Assessment, David Lock Associates with Hoare Lea and Gardiner & Theobald, May 2015

[48] E.g. BPF, 2017, Unlocking the Benefits and Potential of Build to Rent

Table 5.14: Other residential development costs

Cost type	Assumption	Supporting evidence
Professional fees	10% - incorporates all professional fees associated with the build, including fees for designs, planning, surveying, project managing, etc.	Based on Turner & Townsend professional fee benchmarking, assuming a £100m single stage traditional procurement route in London, RIBA stages 0-7 including Architect, PM, QS, MEP engineer, civil & structural engineer, principal designer and BIM coordinator.
Marketing costs	3% of GDV - includes any agent and legal costs and inclusive of arrangement fees	As advised by GLA – in line with recent viability studies received but at upper end of the range
Developer return	The developer return is the reasonable level of return a private developer can expect to achieve from a development scheme. Return varies by building height to reflect increased risk. ***Sale units*** 2 to 5 storeys 15% return 6 to 20 storeys 17.5% return 21 plus storeys 20% return ***Build to Rent*** 2 to 5 storeys 11% return 6 to 20 storeys 12% return 21 plus storeys 13% return	See Annex G for full description of approach used to assessing developer return.
Contractor return	6%	This percentage is in line with Turner & Townsend's International Construction Market Survey 2017 for UK London which is based on market intelligence obtained through tender returns.
Finance costs (debit and credit)	Debit – 6.5% Credit – 0%	As advised by GLA – in line with recent viability studies received and other research studies[49]. Finance is applied to developer return and land costs[50].
Agents and acquisition fees	1.75%	
Stamp Duty Land Tax	As per HMRC rates	n/a

[49] For example, research for DCLG, The value, impact and delivery of the Community Infrastructure Levy, The University of Reading and Three Dragons in association with Smiths Gore and David Lock Associates, February 2017

[50] Land finance is applied on the residual value, based on the same 6.5% finance as the rest of the development. The land finance is applied to half the development period, based on the assumptions that typically there will be some negotiated payment terms and that the scheme will have a credit balance in the latter part of the development.

5.8 Draft London Plan - Additional Costs

5.8.1 The policies in the draft London Plan were reviewed in terms of their potential impact on scheme viability, either in increasing development costs and/or reducing values. It should be noted that whilst some policies will have the effect of increasing costs and / or reducing values, others will enhance values, such as those that are part of the placemaking process, ensuring that a development is good quality and attractive to end users[51]. It does not necessarily follow, therefore, that all policy requirements have a negative impact on viability. This study does not attempt to assess the enhanced viability of the Plan but makes the point that these potential benefits have not been factored into the analysis and therefore development viability may be understated. Annex H provides the full policy review.

Energy standards

5.8.2 In line with the Mayor's aim of London becoming a zero carbon city by 2050, the London Plan sets policy for development to meet an overall zero carbon target. As part of this, major development is expected to achieve a minimum on-site carbon reduction of at least 35 per cent beyond Building Regulations (2013). This builds on the approach established in the existing London Plan and is reflected in current practice. The benchmark schemes used to inform scheme costs reflect an equivalent level of total on-site carbon reduction. Research, including a study recently produced by Buro Happold, indicates that some established methods of meeting the 35 per cent onsite carbon reduction target such as the use of combined heat and power (CHP) may not meet the target in future due to changes in the carbon intensity of the grid and therefore carbon factors. Therefore, a stronger focus on energy efficiency within the GLA Energy Hierarchy was outlined as a key recommendation for the new London Plan.

5.8.3 As such, an analysis was performed by Buro Happold to establish options for energy efficiency (LEAN) targets, presented as an improvement beyond the Part L regulations which were then compared against current residential and non- residential London performance. The findings showed that for residential units, the current London LEAN performance was between 0-4.9% (or £5,000/unit) with the desired performance being 10-14.9% (or £6,500/ unit). The variance between these (£1,500/unit) was included as the premium required to achieve the desired energy efficiency targets over and above the Turner & Townsend baseline capital cost benchmarking.

Table 5.15: Range of residential cost uplifts over notional (Building regs) (£/unit) for varying Lean % carbon reduction targets[52]

LEAN % reduction target	Notional	0%-4.9% (current London performance)	5%-9.9%	10%-14.9%	15%-19.9%
Upper Quartile	£0	£6,300	£8,010	£7,920	£8,560
Median		£5,000	£5,710	**£6500**	£7,870
Lower Quartile		£4,350	£4,130	£5,550	£7,330

5.8.4 In addition to these costs, allowances were made to account for carbon offsetting, based on the assumption developments will achieve a 35% carbon reduction on-site and offset the remaining amount to achieve zero carbon. These allowances were based on information set out in the

51 Recent relevant publications include RICS, Placemaking and value, 1st edition, February 2016 and Savills, Development: The Value of Placemaking, 2016

52 Source: Burohappold Engineering 2017 – Driving Energy Efficiencies Savings through the London Plan

London Carbon Offset Price report produced by AECOM. A nationally recognised non-traded price of £95/tonne of CO2 emissions was assumed. This equated to a further cost of £1,853 per dwelling for carbon offsetting.

Car parking

5.8.5 The draft London Plan sets out new standards for parking for residential and non-residential uses. Provision is restricted in accessible parts of l London with more provision in less accessible areas. The exception is disabled persons parking.

5.8.6 The residential schemes were all tested assuming 5% of the units should have disabled persons parking. The requirement in the draft London Plan is for a minimum of 3% of units to have disabled persons parking but testing at 5% provides a cautious approach.

5.8.7 This has been modelled reflecting the location and type of scheme from Turner & Townsends benchmarking data. Costs have been tested at £2,300 - £20,000 per space.

5.8.8 In addition, £1,500 per space has been allowed for active electric car charging, which was based on quotations received on recent projects for standard residential projects in London[53]. This is a conservative approach since the draft London Plan allows for a proportion of parking spaces to have passive electric charging which will have a lesser cost at the start of a development.

5.8.9 Where general parking is allowed by policies, these set maximum standards and lower levels of provision are encouraged, increasing the potential for developable floorspace. Where parking is included it is typically paid for by occupants which offsets the direct cost of provision.

Provision for cycles

5.8.10 The draft London Plan sets standards for providing secure cycle storage (for residential and non-residential uses) and the modelling undertaken has applied these standards.

5.8.11 Cycle parking costs have been included based on 1.5 spaces per one-bed dwelling, 2 spaces per two or more bed dwellings, plus 1 space per 40 units. The cost allowance of £758/ space is based on the average of four recently gathered quotations for projects delivered by Turner & Townsend. These quotations are based on full covered, lockable cycle enclosures from supplier such as Falco, Orbital and Urbanfab. These are higher end specifications compared with Sheffield stands which can be approximately £85/space including installation, but the enclosure type units are more common across modern developments.

5.8.12 The table below shows the number of cycle spaces allowed for each case study.

[53] Cost of a charging point, including infrastructure within a development.

Table 5.16: Cycle provision for the case studies.

Scheme	Dwellings	Cycle Storage Spaces
RES1	8	15
RES2	24	45
RES3	80	149
RES4	80	149
RES5	80	149
RES6	150	280
RES7	300	560
RES8	300	560
RES9	300	560
RES10	750	1,399
RES11	750	1,399
RES12	750	1,399
MU1	690	1,287
MU2	1,500	2,798
Shelt 1	80	20
EXC 1	80	20
NR10	350	653
NR11	86	160

Accessible housing standards

5.8.13 To reflect draft London Plan policy requirements, it has been assumed that 10% of new dwellings are M4(3) wheelchair user dwellings, and the remainder of dwellings are to meet M4(2) accessible and adaptable dwellings, which are accessible housing standards provided by Part M vol. 1 of the Building Regulations.

Safe and secure environment

5.8.14 Case studies of 4-10 storeys include an allowance of £20 per sq m to cover the potential costs of implementing policy D11 Fire safety which requires development proposals to achieve the highest standards of fire safety. Buildings above this height are already required to incorporate additional fire safety measures in accordance with Part B of the Building Regulations.

5.8.15 An additional cost of fire evacuation lifts is included with £20,000 per lift, based on 1 lift per core with each core serving eight dwellings on a floor. This allowance includes enhanced communication and control system, fire rated power supply and change over panel and is based on recent Turner & Townsend projects in London. This is a conservative assumption as some buildings will already have had to provide firefighting lifts and the additional cost of providing a fire evacuation lift will be less.

Other community facilities

5.8.16 Case studies Res 10, Res11, Res 12 and MU2 with 750 dwellings and over includes costs of a nursery at £627,200. Case study MU2 with 1,500 dwellings include costs of a school at £7.5m Primary school data was collected by Turner & Townsend, and based on recently completed projects an average benchmark of £1,678/m2 was used to derive a cost of £7.5m for a school.

CIL and other development contributions

5.8.17 Integral to the testing, and in compliance with national policy guidance on viability testing, we have made allowances for payment of CIL. This includes an estimate of CIL at the borough level as well as the Mayoral CIL 2 rates [54].

5.8.18 As the value bands used for the testing span different boroughs these have been estimated as a typical value and therefore may under or overstate the CIL liability in some locations. The CIL rates assumed for the testing are set out in the table below.

Table 5.17: Assumed residential CIL rates by value bands – in £s per sq m

Value areas	A	B	C	D	E
Borough CIL	£563	£309	£128	£114	£63
MCIL2	£80	£80	£60	£60	£25
Total	£643	£389	£188	£174	£88

5.8.19 The modelling undertaken assumes that CIL liability is applied to all the floorspace within a development. Under the current CIL regulations, CIL charges will vary from site to site depending on the level of existing floorspace that is being replaced or re-used. The GLA has reviewed LDD completions data from 2012 to 2017 to estimate the average level of reduction that may apply. This indicates that CIL charges are likely, on average, to be a third lower than the modelling undertaken has assumed. The impact of this will be to underestimate viability of schemes tested. Similarly, the phasing of payments and instalment policies have not been taken into account which is likely to have the effect of overstating the impact of CIL.

5.8.20 An additional allowance of £1,500 s106 contribution per dwelling has been allowed for local mitigation of direct development impacts or for requirements that are not capable of being covered by CIL such as employment and training. This figure was advised by the GLA on the basis of recent area wide viability studies.

54 On 26 June 2017 the Mayor published for public consultation the Preliminary Draft Charging Schedule (PDCS) for an MCIL2. The GLA intends that MCIL2 will be levied from April 2019, and will supersede MCIL1. MCIL2 will contribute to the funding of Crossrail 2 or other strategic transport infrastructure.

6 Testing assumptions – other residential and mixed uses

6.1.1 The majority of the assumptions relating to other residential and mixed uses are already explained within either the residential or non-residential sections. This section focuses on those assumptions which are specific to these uses.

6.2 Other residential and mixed-use values

6.2.1 Rents and yields have been used to generate GDV for Care Homes, Student Accommodation and Shared Living. These rents and yields relate to the value of the development rather than the rents charged to occupiers, and are net of the operating costs etc. associated with the ongoing operation of these types of facility. The information sources for these rents and yields are:

- Care homes: Recent deals recorded by CoStar Suite[55]
- Student Accommodation: various market reports[56]
- Shared Living: existing schemes[57]

6.2.2 Both **Shared Living and student accommodation** have been adjusted to take into account the requirement for affordable housing.

6.2.3 For affordable student accommodation, the rent paid by the student including service charges for 39 weeks is set at £6,051 pa from which relevant service charges are deducted. Student housing can be income generating during holiday periods and this is combined with the student rent to give annual income.

6.2.4 For Shared Living the affordable rent has been set at 50% of market rent net of relevant service charges. Operating costs have been derived from the published accounts of housing associations providing student housing and single persons hostels.

6.2.5 Sources and values for rental income for these products are set out in Annex B, along with example operating costs, net income and discounted cash flow investment values. The following investment values have been used in for student accommodation and Shared Living:

[55] CoStar is a provider of information, analytics and marketing services to commercial estate agents, including information about space available for lease, comparable sales information, tenant information, information about properties for sale, and industry news.
[56] See Annex B
[57] E.g. at Old Oak Common and Dolphin Square - see Annex B

Table 6.1 Student and Shared Living Investment Value per unit

	Band A	Band B	Band C	Band D	Band E
Student Accommodation	£232,000	£204,000	£164,000	£129,000	£127,000
Affordable Student Accommodation	£93,000	£129,000	£145,000	£151,000	£138,000
Shared Living	£299,000	£256,000	£206,000	£163,000	£159,000
Affordable Shared Living	£117,000	£122,000	£104,000	£80,000	£88,000

6.2.6 The proportion of affordable accommodation was tested at 50%, 35% and 20% of rooms.

6.2.7 For the **mixed-use schemes** the values used are those for their component uses, as set out elsewhere in the report[58].

6.2.8 In terms of the residential testing within the mixed-use schemes, this follows the same data set out in the residential section of the assumptions Chapter.

6.3 Other residential and mixed-use costs

6.3.1 Capital cost benchmarking was prepared by Turner & Townsend as in the table below.

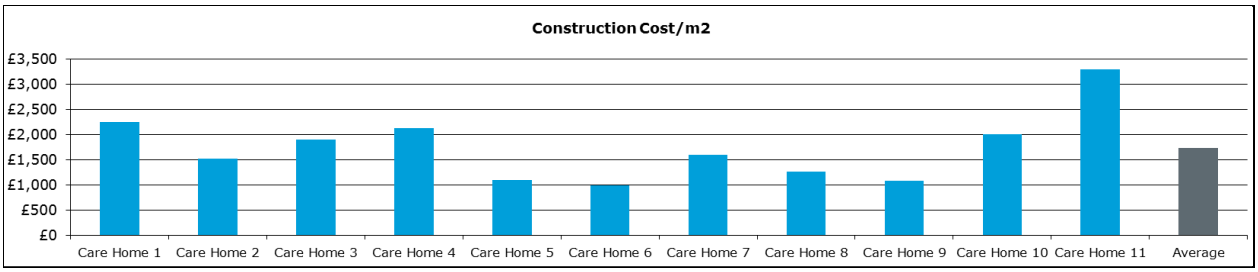
Table 6.2 Other residential and mixed use - build costs

Case study		**Value area**		
Ref.	Application	£ per sq m Central (A)	£ per sq m Inner (B&C)	£ per sq m Outer (D&E)
CH1	Care home	£1,931	£1,901	£1,781
CH2	Care home	£1,968	£1,938	£1,818
SR1	Student accommodation	£2,497	£2,459	£2,307
SR2	Student accommodation	£2,609	£2,570	£2,411
CL1	Co (Shared) living	£2,603	£2,563	£2,403
MU1	Mixed use development See sections on residential and non-residential costs for the applicable build cost			
MU2				
NR10	Industrial intensification Industrial cost only – see residential section for those costs	£1,621	£1,596	£1,495
NR11		£1,281	£1,263	£1,189

6.3.2 Care home (CH1) data was provided by Turner & Townsend using a population of recently completed projects as shown below.

[58] It should be noted that whilst the value areas set out in the non-residential section are not an exact match for values set out in the residential value bands they do tie in reasonably closely and sufficiently so for this type of strategic testing. The non-residential sections set out which non-residential value area would apply to which residential value band for testing purposes.

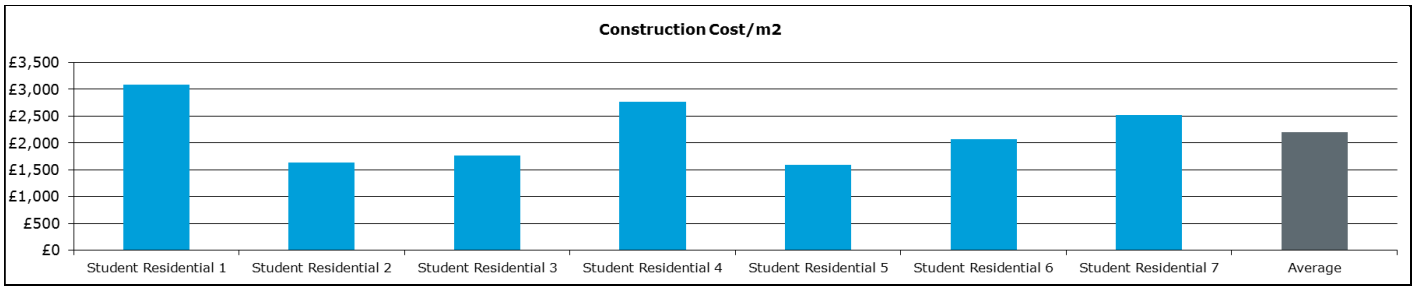
Figure 6.1: Build costs for care homes – cases from Turner & Townsend database



6.3.3 In order to ascertain the CH2 data, Turner & Townsend conducted a cost analysis exercise comparing the specification variances between different forms of care homes[59].

6.3.4 Student accommodation (SR1) data was provided by Turner & Townsend using a population of recently completed projects as shown below.

Figure 6.2: Build costs for student accommodation – cases from Turner & Townsend database



6.3.5 SR1 and SR2 were then modelled with different costs based on the building heights, with SR1 at 9 storeys and SR2 at 15 storeys.

6.3.6 Shared Living costs have been based on the student accommodation benchmarking data provided by Turner & Townsend, plus allowances for variances in specification and scope. Given the newness of this type of development, there is very limited information about the specification of these facilities, but reasonable allowances were provided to account for higher specification of internal finishes and a greater level of amenities in Shared Living schemes. These resulted in a 5% premium on student accommodation build costs.

6.3.7 These capital cost benchmarks include the base build cost provided by Turner & Townsend plus allowances for the following:

- External works and other construction costs - Plot externals relate to costs for internal access and hard and soft landscaping within the site. This input is standard to all case studies and incorporates all additional external costs to the developer at 8.55% of build cost (see Chapter 5 for further details);
- An allowance for demolition costs at £29 per sq m of development (apart from mixed use) - (see Chapter 5 for further details);

[59] Based on industry specialist consultation

- An allowance for average abnormal costs of £166 per sq m (see Chapter 5 for further details)
- Allowances have also been made for car parking, cycle storage and electric charging points as described in the residential and non-residential section of this report;
- Also in respect of NR10 a further build cost has been included at £665 per sq m to allow for the additional build costs associated with building a ramped access scheme[60].

6.3.8 All other development costs and pace of development are set out in either the residential or non-residential chapters of the report; noting that an allowance of £750 per unit for student and Shared Living accommodation was made for S106 costs not met by CIL[61].

[60] A recent scheme at Hatton Cross was used to provide an example of the type and scale of ramp. Based on this approach an overall cost of £6.3m was allowed for the ramp access.
[61] As advised by the GLA

7 Testing assumptions – non-residential

7.1 Non-residential values

7.1.1 In establishing the GDV for non-residential uses, this report has considered several sources of information including:

- Transactions listed on Costar Suite[62];
- Agent reports;
- Work prepared for the borough and mayoral CILs;
- Relevant studies and research on commercial uses in London;
- Discussion with GLA based on referable applications across London.

7.1.2 In undertaking strategic work over such a large area, both geographically and given the range of transactions occurring across London, there has been a need to simplify the process to identify overlying trends to aid both the testing and those who will review and be informed by this report. The starting point was to review previous boundaries used for similar work and seek some consistency with the residential bands that have been used in this study to aid testing, in particular for the mixed-use case studies, as previously discussed.

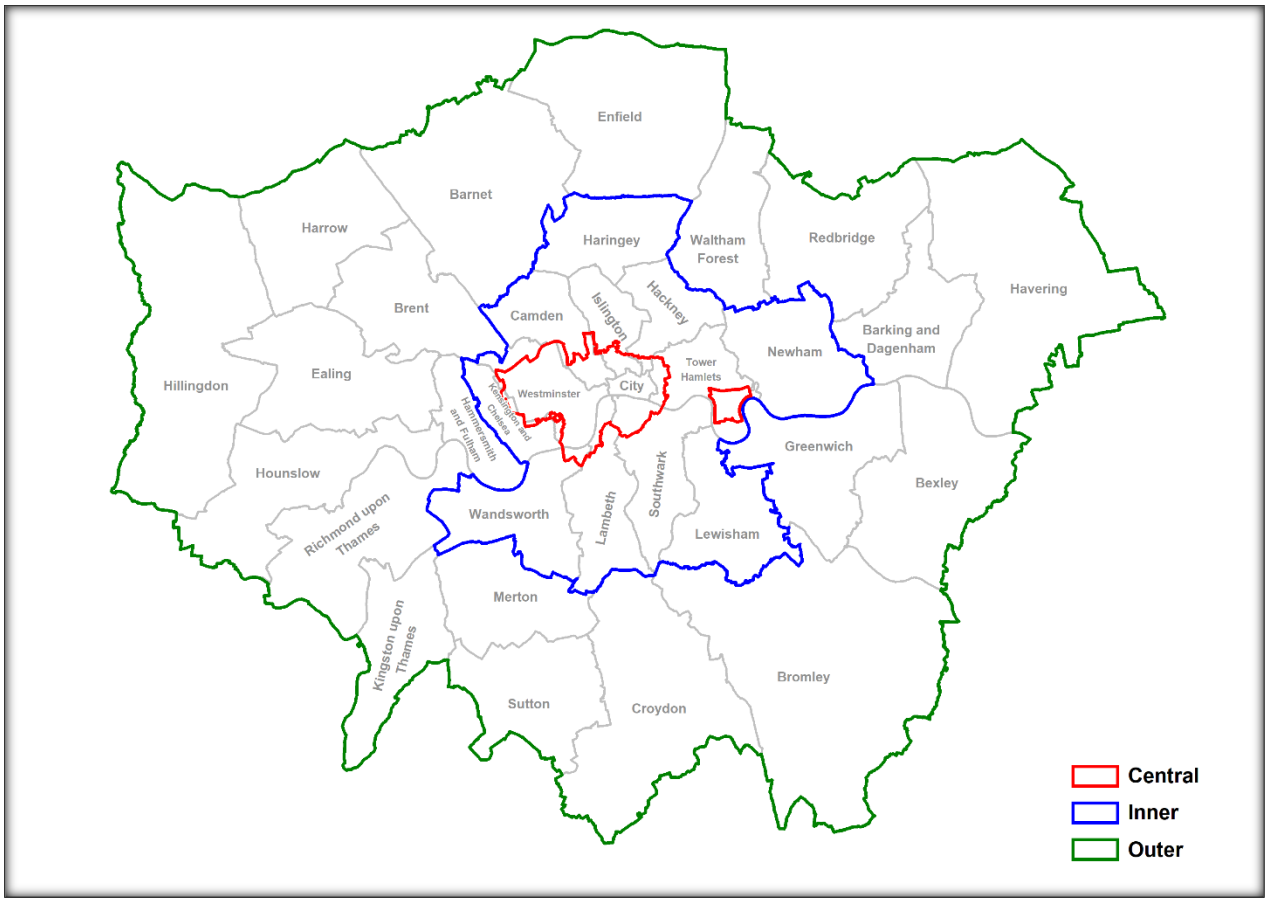
7.1.3 One of the most familiar boundaries in respect on non-residential uses is that used by MCIL and the proposed changes set out in consultation with MCIL2. For office, retail and hotels these identify a central area (two separate areas in central London and Canary Wharf) and for development outside of this central area, revert to the three general bands which include Band 1 (central and inner London) Band 2 (inner and outer London, mainly north and west) and Band 3 (outer London, mainly south and east).

7.1.4 It is notable that Costar in their market reports and a number of agents all use similar boundaries but with greater distinctions beyond the central area, with an inner ring around central London and an outer area, donut fashion. Within central London it is often broken down into specific zones, usually around the office market and key retail areas[63].

7.1.5 Having considered all these approaches and the residential banding the following value areas have been used for testing purposes:

[62] CoStar is a provider of information, analytics and marketing services to commercial estate agents, including information about space available for lease, comparable sales information, tenant information, information about properties for sale, and industry news
[63] The London Plan notes that Town Centres (along with the CAZ) are the primary locations for commercial activity.

Map 7.1: Non-residential value areas



7.1.6 These value areas have been used to categorise the data on rents and yields, mainly sourced from transactions reported by Costar. The Costar data covers both new and existing stock, however, in order to consider the values that are most likely to be associated with new development generally, only the premium 4 & 5 star properties have been included, where there is sufficient transactional data. These figures have also been checked against agent reports and with the GLA. The rents and yields are capitalised within the GLA toolkit to provide GDV for all the development types. Annex I sets out the number of transactions and a sample of the data from CoStar.

7.1.7 It should be noted that having reviewed the data and discussed with GLA, it is unlikely that all forms of development will come forward in all areas depending on the market for specific commercial uses in different parts of London. This is backed by the lack of transactions - for example industrial development is unlikely to take place in the central area or large scale tall office development in outer areas. The rents and yields used are as follows:

Table 7.1: Non-residential rents and yields*

Case study use	Value area	Rent (£ per sq m)	Yield (%)
Offices			
	Central	£618	4.5
	Inner	£402	4.9
	Outer	£246	6.1
Industrial			
	Inner	£194	4.5
	Outer	£129	4.75
Retail	Central	£678	3.6
	Inner	£334	5.2
	Outer	£269	5.6
Hotel**			
Budget a (35sq m)	Central	£346	4.3
	Inner/Outer	£190	5.3
Budget b (28sq m)	Central	£432	4.3
	Inner/Outer	£238	5.3
Luxury	Central	£439	4.2
	Inner/Outer	£384	5

* Data sourced from Costar Suite and Agent reports July 2017
** Hotel rent per square metre derived from reported hotel sales and room values

7.2 Non-residential costs

7.2.1 As with the residential uses testing, once a GDV has been established the cost of development (including developer profit) is then deducted. For the purposes of viability testing, the following costs and variables are key inputs used within the assessment:

- Build costs
- Professional fees and overheads
- Marketing fees
- Finance costs
- Developer profit
- Policy costs
- Legal fees and land stamp duty tax
- Land finance

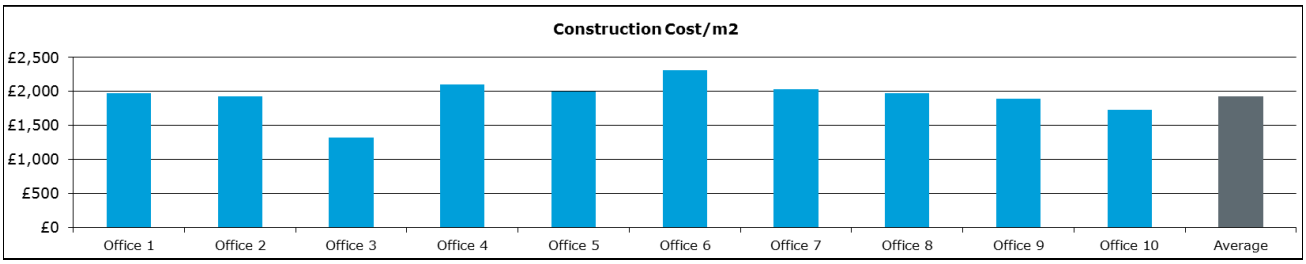
7.2.2 **Build costs** - Capital cost inputs have been provided by Turner & Townsend using their own population of cost information based on past completed projects. The capital cost benchmarks are set out in the following table.

Table 7.2: Non-residential base build costs

Case study		Value area		
Ref.	**Use**	**£ per sq m Central (A)**	**£ per sq m Inner (B&C)**	**£ per sq m Outer (D&E)**
NR1	Office	£1,864	£1,835	£1,718
NR2	Office	£1,958	£1,927	£1,805
NR3	Office	£2,610	£2,569	£2,406
NR4	Hotel	£1,799	£1771	£1,659
NR5	Hotel	£1,799	£1771	£1,659
NR6	Hotel	£2,486	£2,447	£2,292
NR7	Industrial	£889	£875	£819
NR8	Industrial	£889	£875	£819
NR9	Industrial	£1,062	£1,045	£979

7.2.3 Office build costs were provided by Turner & Townsend using a population of recently completed projects as follows:

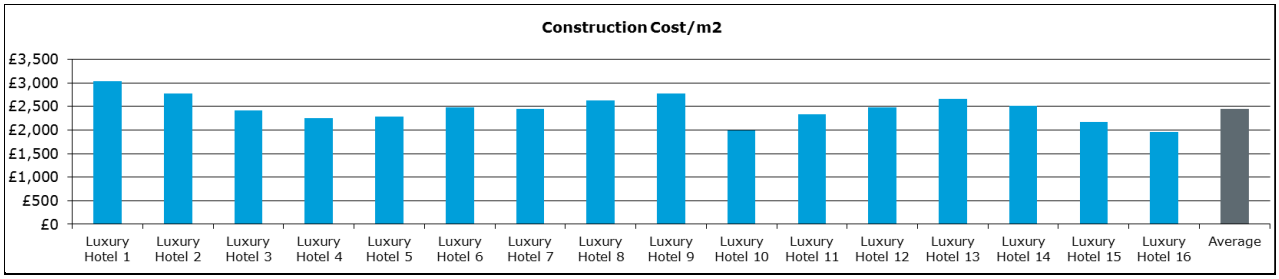
Figure 7.1: Build costs for office accommodation per sq m – cases from Turner & Townsend database



7.2.4 The above costs were then adjusted for varying storey heights using the Knight Frank Tall Building Report, which provided adjustment factors to account for the varying complexity of building height which means that economics of scale really only come into play from 40 storeys upwards[64].

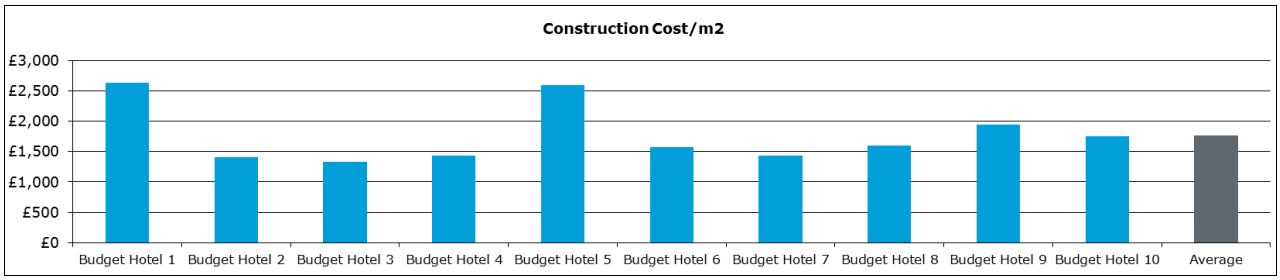
7.2.5 Both Luxury and Budget hotel data was provided by Turner & Townsend using a population of recently completed projects as follows:

Figure 7.2: Build costs for luxury hotels per sq m – cases from Turner & Townsend database



[64] Tall Towers 2012 London's high rise developments, Knight Frank,2012

Figure 7.3: Build costs for budget hotels per sq m– cases from Turner & Townsend database



7.2.6 The capital cost benchmarks include the base build cost provided by Turner & Townsend with further allowances for the following:

- External works and other construction costs - Plot externals relate to costs for internal access and hard and soft landscaping within the site. This input is standard to all case studies and incorporates all additional external costs to the developer at 8.55% of build cost;
- An allowance for demolition costs at £29 per sq m of development (apart from mixed use);
- An allowance for average abnormal costs of £166 per sq m.

See Chapter 5 for further details of the above costs.

7.2.7 Other development costs are set out in the table below.

Table 7.3: Other non-residential development costs

Cost type	Assumption	Source
Professional fees	10% - incorporates all professional fees associated with the build, including fees for designs, planning, surveying, project managing, etc	Based on Turner & Townsend professional fee benchmarking, assuming a £100m single stage traditional procurement route in London, RIBA stages 0-7 including Architect, PM, QS, MEP engineer, civil & structural engineer, principal designer and BIM coordinator.
Marketing	3% of GDV - includes any agent and legal costs and inclusive of arrangement fees	As advised by GLA – in line with recent viability studies received where these range from 1-3%
Developer return	15% GDV - the developer return is the reasonable level of return a private developer can expect to achieve from a development scheme.	As advised by GLA – for commercial uses a typical target return is 15-20% on costs. A profit of 15% has been applied on gross development value which GLA consider is broadly equivalent to 20% on costs and at the upper end of this range
Finance costs (debit and credit)	Debit – 6.5% Credit – 0%	As advised by GLA – in line with recent viability studies received and other research studies. Finance is applied to developer return and land costs.
Acquisition fees	1.75% (Surveyor – 1% and Legals – 0.75% of residual land value) - this input represents the fees associated with the land purchase	As advised by GLA – in line with recent viability studies received
Stamp Duty Land Tax	As per HMRC rates	n/a
Void/rent free	Allowance for voids/rent free periods has been made within the build out rates for each case study.	Based on previous experience of strategic appraisals

7.2.8 The draft policies of the London Plan have been reviewed to assess those which are likely to be relevant to development viability. Where these are related to build costs, Turner & Townsend have provided the relevant figures to include within the assessment. A variety of standards and thresholds apply so not all costs apply to all case studies. A summary of the key costs and standards are set out in the following table (Annex H provides a full review).

Table 7.4: Policy costs summary

Policy	Standard	Cost	Case study	Application
Affordable workspace	10% of workspace should be offered at 80% of market rent	A proportional reduction GDV for applicable schemes	Applies to office and industrial case studies, including those within mixed use schemes	Achievable rent is reduced, equivalent to an allowance for the standard.
Minimising greenhouse gas emissions (offset)	Zero carbon - 35% minimum saving onsite target over building regs. Offsite contributions for remainder. Meeting energy efficiency standard	Onsite included within build cost. Offsite - Office - £43.72 per sq m Hotel - £86.33 per sq m	Applies to all office (including mixed use schemes) and hotel case studies	A per sq m allowance is added to all applicable case studies.
Cycle parking	Variable standards apply for both visitor and employees and by use for A1 food, A1 non-food, A2-A5, hotels, office and industrial.	£758 per space	Applies to all case studies	A per sq m allowance is added to all applicable case studies, however in reality this is substantial provision and cheaper alternatives would also be acceptable, so it is a conservative approach in terms of costs.
Disabled parking	If no general parking, allow 1 space per case study use. Surface only.	£2,300 per space	Applies to all office, retail/leisure and hotel	A per space allowance is added to all applicable case studies.
Vehicular parking - hotel	General parking not required. No specific standard, case by case	£2,300 per space	Spaces included within NR5 as per GLA guidance	A per space allowance is added to NR5.
Vehicular parking - industrial	Should have regard to office standards	Allowance within externals	Industrial case study only (including industrial element of mixed use)	Allowance within external costs.
Electric car charging	All operational parking requirements must provide infrastructure for electric or other ultra-low emission vehicles.	£1,500 per active charging point	Applies to all case studies with parking specified	A per space allowance is added to all applicable case studies.
Accessibility - hotels	Serviced accommodation required to provide accessible bedroom space	£5,000 per room	Applies to 15% of hotel rooms	Allowance based on an average cost for provision to meet policy requirements
Fire evacuation	80 bed hotel 2 lifts, 120 bed hotel 3 lifts	£20,000 per lift	Applies to hotel case studies	A per lift allowance is added to all applicable case studies

7.2.9 For non-residential units, the current London energy efficiency performance as part of meeting the existing 35% onsite carbon reduction target was deemed to be between 10-19.9% improvement over Building Regulations 2013, which matched the desired performance from the GLA and as such no incremental costs were allocated to allow for additional energy efficiency measures. This was supported by the fact that the baseline capital cost benchmarking being used by Turner & Townsend included for BREEAM excellent for commercial office facilities and BREEAM very good for industrial, hotel and retail facilities. As such, the baseline benchmarking would have already achieved the desired level of energy efficiency. An allowance has also been made for off site provision as set out in Table 7.4.

Table 7.5: Range of non-residential cost uplifts over notional (Building Regs 2013) (£/m²) for varying Lean % carbon reduction targets[65]

LEAN % reduction target	**Notional**	**0%-9.9%**	**10%-19.9%** (current London performance)	**20%-29.9%**	**30%-39.9%**
Upper Quartile	£0	£64	£59	£47	£57
Median		£35	£55	£37	£36
Lower Quartile		£20	£37	£32	£34

7.2.10 It should be noted that whilst it is important to make an allowance for any of these additional costs, some (e.g. affordable workspace, cycle parking) have a minimal impact on overall build costs as they are a very small percentage, often less than 1% of GDV. Therefore, any minor amendments of the policy through the plan process, or its application, will have very limited effect on overall viability.

7.2.11 **CIL and other development contributions** - there is currently a combination of local and Mayoral charges applicable for different types of development in different areas across London. For a strategic assessment such as this, which crosses numerous administrative boundaries, a pragmatic approach has been taken:

- MCIL 2 is applied with the prevailing rates set out in the consultation (this simplifies the previous MCIL1 and S106 regime);
- Borough CILs are averaged across the value areas for each use type;
- A London wide S106 contribution of £30 per sq m for commercial space was applied, based on borough area wide viability assessments. The S106 allowance is to cover individual borough S106 requirements that may not be met by CIL.

Build out rates

7.2.12 As previously described build out rates and letting rates allow the modelling to take account of finance costs throughout the build period and selling rates, including an allowance for void periods in the initial periods. This is then cash flowed within the GLA toolkit. The build periods used are set out in the Annex F.

[65] Source: Burohappold Engineering 2017 – Driving Energy Efficiencies Savings through the London Plan

8 Benchmark land values

8.1 Role of benchmark land values

8.1.1 It is standard practice for area-wide viability studies to compare the residual value of schemes tested against a benchmark land value. Where the residual value exceeds the benchmark, a scheme is said to be viable and where it fall below the benchmark, it is not viable. Benchmark land values therefore play a central role in viability studies but with limited guidance on how they should be determined.

8.1.2 Planning Practice Guidance sets out the principles that area wide viability studies should follow when taking land values into account:

> *'Central to the consideration of viability is the assessment of land or site value. The most appropriate way to assess land or site value will vary but there are common principles which should be reflected.*
>
> *In all cases, estimated land or site value should:*
>
> - *reflect emerging policy requirements and planning obligations and, where applicable, any Community Infrastructure Levy charge;*
> - *provide a competitive return to willing developers and land owners (including equity resulting from those building their own homes); and*
> - *be informed by comparable, market-based evidence wherever possible. Where transacted bids are significantly above the market norm, they should not be used as part of this exercise.'*[66]

8.1.3 PPG goes on to define a competitive return for a landowner as:

> *'…the price at which a reasonable land owner would be willing to sell their land for the development. The price will need to provide an incentive for the land owner to sell in comparison with the other options available. Those options may include the current use value of the land or its value for a realistic alternative use that complies with planning policy.'*[67]

8.1.4 The benchmark land values should therefore both reflect emerging policy requirements and planning obligations, and be informed by comparable market evidence wherever possible. In order to be consistent with PPG, market evidence must be relevant to the typologies being tested and be based on policy compliant development or be adjusted for it to be useful to inform benchmarks. This is considered further below.

[66] Planning Practice Guidance 014 Reference ID: 10-014-20140306
[67] ibid

8.1.5 Advice for Planning Practitioners[68] states:

'We recommend that the Threshold Land Value is based on a premium over current use values and credible alternative use values (noting the exceptions below…….).'

The exceptions referred to relate to larger scale sites for urban extensions on greenfield land and edge-of-settlement greenfield sites, neither of which are of significance in the context of London.

8.1.6 Advice for Planning Practitioners also notes that reference to market values can still provide a useful 'sense check' on the benchmark values that are being used for testing, but it is not recommended that these are used as the basis for the input to a model. Therefore, land value benchmarks used to test plan policies can be **less** than the value at which land is being traded in the market. This point was highlighted in the London Mayoral CIL examiner's report (also from 2012) which, although relating directly to CIL, sets out important principles in the treatment of benchmark land values[69]

"Finally the price paid for development land may be reduced. As with profit levels there may be cries that this is unrealistic, but a reduction in development land value is an inherent part of the CIL concept. It may be argued that such a reduction may be all very well in the medium to long term but it is impossible in the short term because of the price already paid/agreed for development land. The difficulty with that argument is that if accepted the prospect of raising funds for infrastructure would be forever receding into the future. In any event in some instances it may be possible for contracts and options to be re-negotiated in the light of the changed circumstances arising from the imposition of CIL charges".

8.1.7 Recent RICS research also highlights the drawback in using market evidence to set land value benchmarks:

"If market value is based on comparable evidence without proper adjustment to reflect policy compliant planning obligations, this introduces a circularity, which encourages developers to overpay for sites and try to recover some or all of this overpayment via reductions in planning obligations".[70]

8.1.8 The London Mayor's own guidance of 2017, states that:

"The Mayor considers that the 'Existing Use Value plus' (EUV+) approach is usually the most appropriate approach for planning purposes. It can be used to address the need to ensure that development is sustainable in terms of the NPPF and Development Plan requirements, and in most circumstances the Mayor will expect this approach to be used." Para 3.47[71]

8.1.9 The Mayor's guidance also recognises that:

'….*land transactions reflect the specific circumstances of the developer whereas planning viability assessments are typically undertaken on a standardised basis. Reliance on land transactions for sites that are not genuinely comparable or that are based on assumptions of low affordable housing delivery, excessive densities, or predicted value growth, may*

[68] Local Housing Delivery Group, 2012, Viability Testing Local Plans
[69] Report to The Mayor of London, by Keith Holland January 2012
[70] RICS, 2015, Financial Viability Appraisal in Planning Decisions: Theory and Practice
[71] Homes For Londoners Affordable Housing and Viability, Supplementary Planning Guidance 2017, BNP August 2017. See also reports by the House of Lords Committee on the Built Environment (2016), London Housing Commission (2016), the London Assembly Planning Committee (2016), The London Borough Viability Group (2016), Joseph Rowntree Foundation (2015) and other academic research.

lead to inflated site values. This undermines the implementation of Development Plan policies and the ability of planning authorities to deliver sustainable development.'

8.1.10 This is relevant for site specific viability assessments but particularly so for area wide assessments where new policies are not reflected in past transactions and which are primarily based on current day values.

8.1.11 The SPG also provides guidance on determining benchmark land values which can be informed by values that have been accepted for planning purposes on other comparable sites where determined on a basis that is consistent the guidance.

8.2 Setting benchmark land values

8.2.1 In order to assess benchmark land values (BLVs) for the study land values for specific proposals have been reviewed. The BLV is used to determine whether a scheme is viable and is assessed by boroughs, and the GLA for applications referable to the Mayor, to ensure that these are in line with relevant guidance. This helps to ensure that land values reflect Development Plan policies whilst providing a competitive return to the land owner.

8.2.2 Viability assessments undertaken as part the planning process are informed by comparable market evidence for rents, yields and values and are typically based on current day values and costs. Recent schemes from 2016/17 have been analysed by the GLA for different value areas across London.

8.2.3 There is a significant variation in BLVs between the value bands with the highest BLVs in higher value zones and lower BLVs in less valuable areas. BLVs also vary within each Band depending on the use of the site and other factors such as the quality of accommodation. Sites in industrial/ warehouse use and community/ public use typically have lower-mid BLVs compared with other higher value uses in the same zone. BLVs for sites with retail, office and residential uses tend to be at the mid/ high end of the range[72]. For the purposes of this study, BLVs have been calculated on a per unit basis. This enables comparison between sites where generic case studies are being tested and individual site characteristics are not known. Further details are set out at Annex J.

8.3 Benchmark land values used in the study

Residential schemes

8.3.1 Three alternative benchmark land values are identified for residential development, which vary by value band. They have been calculated on a per dwelling basis (as described above) which provides the base information to calculate the benchmark land value per scheme.

[72] The approach to setting benchmark land values and the figures contained in Annex J and in Tables 8.1 and 8.2 was based on the viability assessment analysis undertaken by the GLA.

Table 8.1: Residential benchmark land values - £000s per dwelling

	Low	Medium	High
Band A	75	190	300
Band B	40	75	110
Band C	30	55	80
Band D	20	35	50
Band E	10	20	30

8.3.2 The above benchmark values have been used for all the residential for sale and Build to Rent case studies as well as the mixed use and industrial intensification case studies (where the non-residential benchmark value was added to the residential benchmark).

Non-residential benchmark land values

8.3.3 The benchmark land values for non-residential case studies use the same basis as the residential benchmarks but are per square metre rather than per unit of new development. They are shown in the table below.

Table 8.2: Non-residential benchmark land values - £s per sq m (of new development)

	Low	Medium	High
Band Central	815	2,065	3,261
Band Inner	326	598	870
Band Outer	109	217	326

9 Testing Results – Residential case studies

9.1 Testing undertaken

9.1.1 The provision of housing that is affordable is a key policy objective of national policy and the Mayor. Affordable housing is provided for eligible households whose needs are not met by the market. It is provided at rents and values that are lower than those charged for market housing. The testing undertaken assessed the impact of different amounts of affordable housing (20%, 35% and 50%) and different combinations of types of affordable housing, as well as the 'base' position with no affordable housing. A full set of results are shown in Annex K.

9.1.2 For mixed tenure market residential schemes - the order of testing is as follows, showing first the overall % of affordable housing then the proportion of the different affordable housing tenures that make up the overall affordable housing amount:

Table 9.1: Standard residential affordable housing tenure mix

Test	AH percentage	AH tenure mix (%)*
Base	0%	n/a
1	50%	60 LAR:40 LSO
2	50%	30 LAR: 35 LLR: 35 LSO
3	50%	30 LAR: 70 LSO
4	35%	60 LAR:40 LSO
5	35%	30 LAR: 35 LLR: 35 LSO
6	35%	30 LAR: 70 LSO
7	20%	60 LAR:40 LSO
8	20%	30 LAR: 35 LLR: 35 LSO
9	20%	30 LAR: 70 LSO

*The tenures are as follows:

LAR - London Affordable Rent

LLR - London Living Rent

LSO - London Shared Ownership

DMR - Discount Market Rent

DMR tested in value bands A and B instead of LSO

9.1.3 For **Build to Rent schemes**, the affordable housing assumed follows a different approach as set out below.

Table 9.2: Build to rent affordable housing tenure mix

Test	AH percentage	AH tenure mix (%)*
Base	0%	n/a
1	50%	100% LLR
2	50%	50 LLR:50 DMR
3	50%	100% DMR
4	35%	100% LLR
5	35%	50 LLR:50 DMR
6	35%	100% DMR
7	20%	100% LLR
8	20%	50 LLR:50 DMR
9	20%	100% DMR
10	35%	50%LAR:50% DMR

9.1.4 For both the market residential and build to rent schemes, where 50% affordable housing was shown to be viable, then the 35% and 20% affordable housing test were not undertaken as logically these will also be viable. Where the 'base' position with 0% affordable housing was shown to be unviable, then the testing with any affordable housing was not undertaken as logically these will also be unviable.

9.1.5 The different affordable housing tests reflect the policy targets in the plan. This includes a strategic target for 50% of new homes to be affordable across all sources, including registered providers. Within this a threshold approach is applied in which schemes achieving 35% affordable housing and 50% for public sector and industrial land are eligible for a Fast Track Route and will not be required to submit viability information. The provision of 50% affordable housing is reflected in Tests 1-3 and 35% in Tests 4-6 and 10. Under the Viability Tested Route schemes that face genuine barriers to delivery, such as in low value areas may be able to provide lower levels of affordable housing. 20% has been adopted for testing purposes – Tests 7-9, but this will vary depending on site circumstances.

9.1.6 The tests also reflect the aspiration to provide genuinely affordable housing, with Tests 1, 4 and 7 based on a higher proportion of London Affordable Rent (Table 9.1). Testing also includes the threshold minimum of 30% of affordable housing as LAR, with the remainder split between London Living Rent and London Shared Ownership[73] (Tests 2, 5 and 8); and 30% LAR with the remainder at LSO (Tests 3, 6 and 9). For schemes to qualify for the Fast Track Route they must provide a minimum tenure split of 30% low cost rent (social or affordable rent) and 30% intermediate housing, with the remaining 40% to be determined by boroughs.

9.1.7 For Build to Rent the tests reflect the requirement that genuinely affordable rent should be provided, with a preference for Discounted Market Rent at London Living Rents (LLR). For Build to Rent Tests 1, 3 and 7 all of the affordable element is at London Living Rents, while the other tests have increasing proportions of discounted market rent (DMR) at varying discounts to market rent[74]. Tests 2, 5 and 8 have a mix of LLR and DMR.

[73] In Bands A and B, Discounted Market Rent is tested in place of London Shared Ownership to ensure that intermediate housing products tested in higher value areas remain affordable.
[74] Band A – 40% of market rent, Band B - 60% of market rent; Bands C-E - 80% of market rents. The greater discount for Bands A and B ensure that this remains affordable in higher value areas.

9.2 Results of the testing

Value Band A

9.2.1 Six of the residential case studies were tested in value band A:

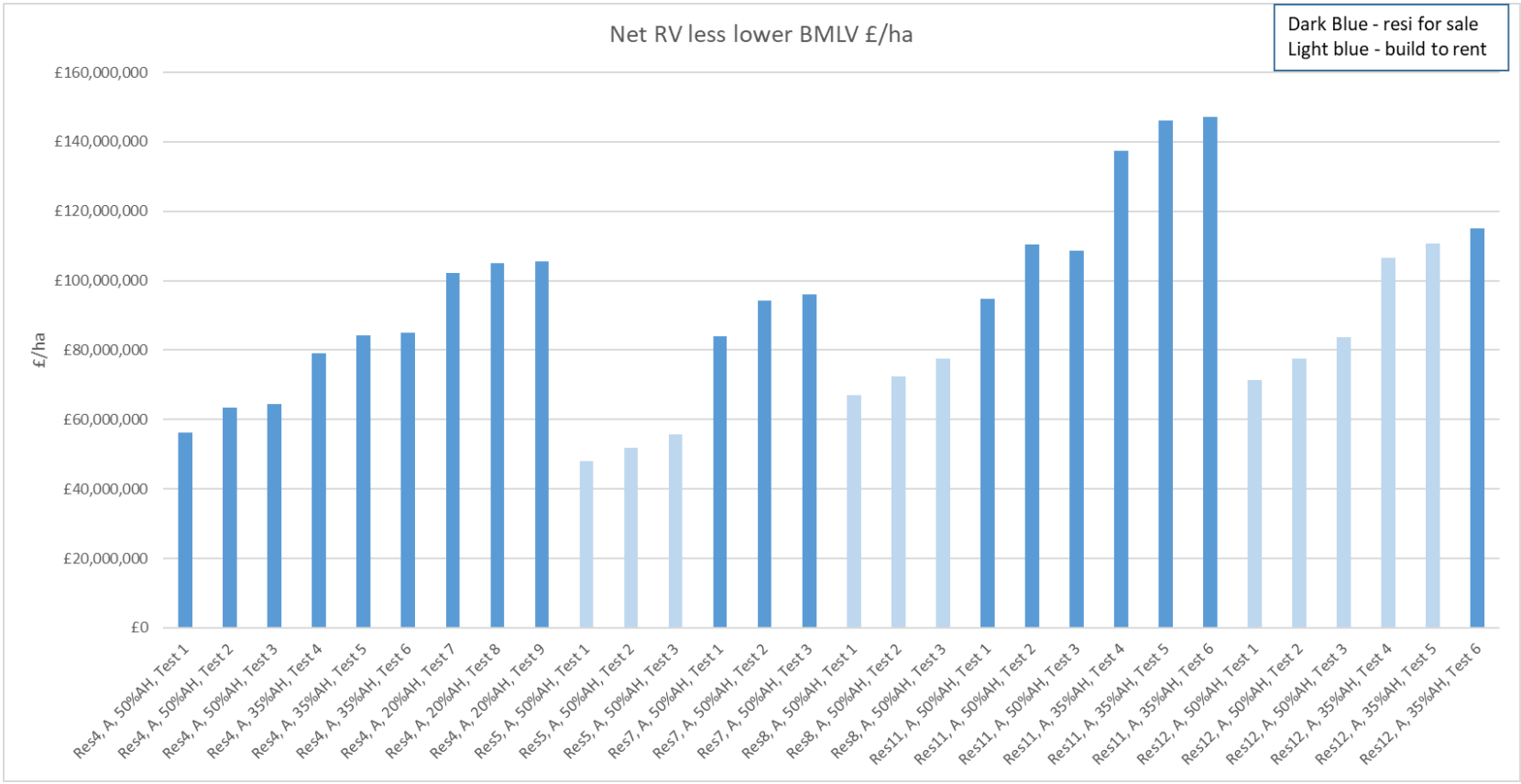
- Res 4 - 80 dwellings for sale over 8 storeys at 250 dph
- Res 5 - 80 dwellings for rent over 8 storeys at 250 dph
- Res 7 – 300 dwellings for sale over 9 storeys at 350 dph
- Res 8 – 300 dwellings for rent over 9 storeys at 350 dph
- Res 11 - 750 dwellings for sale over 15 storeys at 450 dph
- Res 12 - 750 dwellings for rent over 15 storeys at 450 dph

9.2.2 Commentary:

- All of these case studies exceeded the lower land benchmark at 50% affordable housing and therefore can be considered viable in value band A.
- Between the case studies, the larger higher density schemes are more viable than the smaller lower density schemes, as expected in high value areas.
- The market residential schemes are more viable than their build to rent counterparts, which might be expected as build to rent is less common in the highest value areas.
- Within each proportion of affordable housing, the viability strengthens as the amount of London Living Rent and London Shared Ownership increases. However, the 60% London Affordable Rent:40% London Shared Ownership split is viable.

9.2.3 Figure 9.1 illustrates the difference in viability between the different schemes tested in Band A based on the net residual value/ha for the scheme after deducting the lower benchmark land value. Mid and high benchmarks are considered further below. The residential for sale is coloured dark blue and build to rent is light blue.

Figure 9.1: Residential Viability in value band A net £/ha against the lower benchmark land value



Value Band B

9.2.4 Six of the residential case studies were tested in value band B:

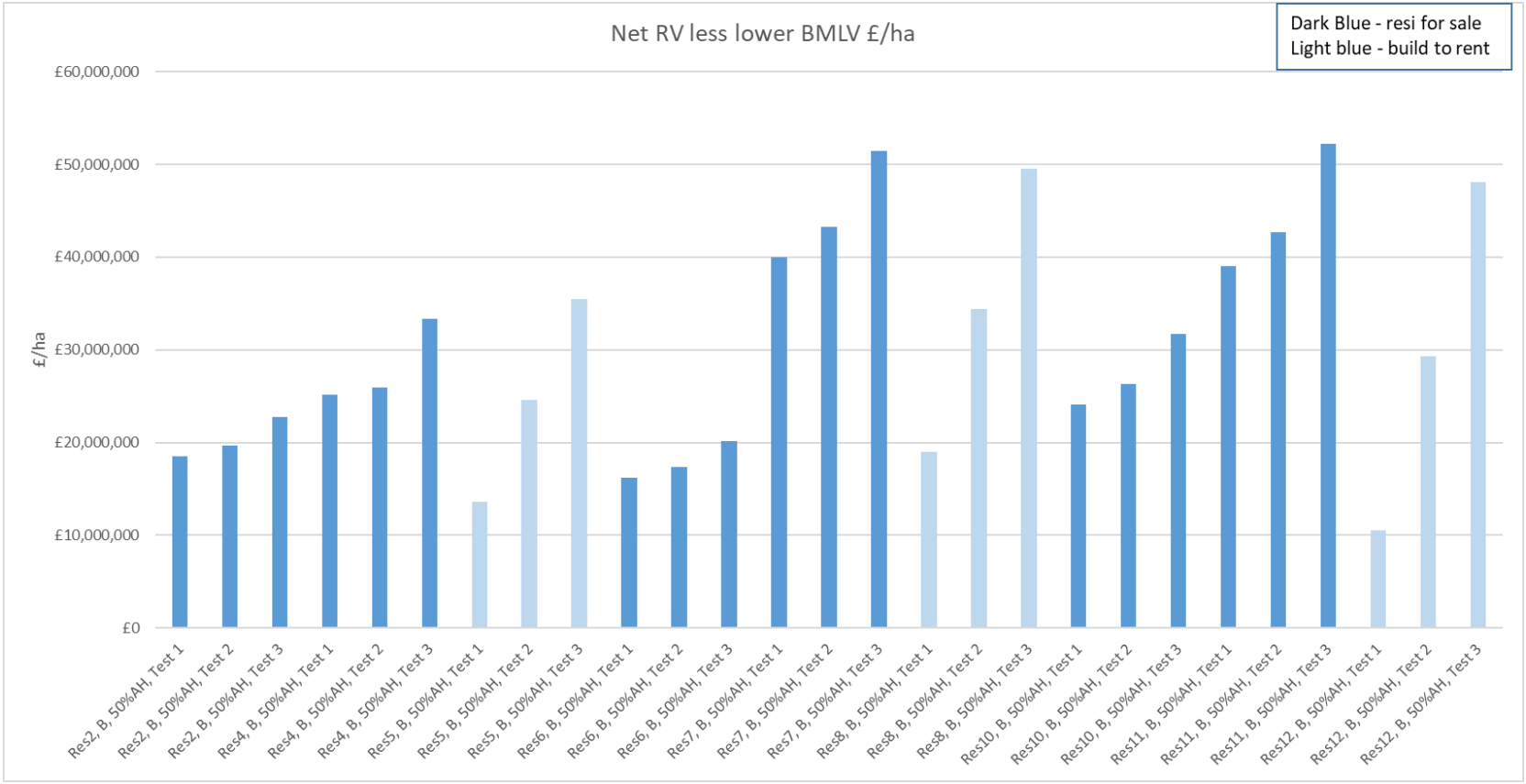
- Res 1 – 8 dwellings for sale over 3 storeys at 64 dph, on a standard basis and with an off-site affordable housing contribution of £30,000 per dwelling
- Res 2 – 24 dwellings for sale over 5 storeys at 120 dph
- Res 4 - 80 dwellings for sale over 8 storeys at 250 dph
- Res 5 - 80 dwellings for rent over 8 storeys at 250 dph
- Res 6 – 150 dwellings for sale over 4 storeys at 80 dph
- Res 7 – 300 dwellings for sale over 9 storeys at 350 dph
- Res 8 – 300 dwellings for rent over 9 storeys at 350 dph
- Res 10 – 750 dwellings for sale over 8 storeys at 260 dph
- Res 11 - 750 dwellings for sale over 15 storeys at 450 dph
- Res 12 - 750 dwellings for rent over 15 storeys at 450 dph

9.2.5 Commentary:

- Res 1 is not required to provide onsite affordable housing but is viable with a £30,000 off-site affordable housing contribution.
- All of the remaining standard residential case studies exceeded the lower land benchmark at 50% affordable housing and therefore can be considered viable in value band B, and this includes the 60% London Affordable Rent:40% London Shared Ownership tenure split.
- There are some similar viability characteristics in value band B as in A above:
    - The market residential schemes are generally more viable than their build to rent counterparts – although when the 60% London Affordable Rent:40% intermediate affordable tenure split Test 1 is compared with the 50:50 London Living Rent:Discount Market Rent BTR Test 2 the difference is less.
    - Within each proportion of affordable housing, the viability strengthens as the amount of London Living Rent and intermediate affordable increases.
- However, the stronger viability for the larger higher density schemes compared to the smaller lower density schemes is less marked (although it is clear that, for example, the higher density 750 dwelling Res 11 is more viable than the lower density 750 dwelling Res 10); and there is less difference between the viability for residential for sale and build to rent where DMR is provided (at London Living Rents and other levels of discount on market rents) as the affordable tenure.

9.2.6 Figure 9.2 illustrates the difference in viability between the different schemes tested in Band B with 50% affordable housing, based on the net residual value/ha for the scheme after deducting the lower benchmark land value. The residential for sale is coloured dark blue and build to rent is light blue. Res 1 is not on the graph (as it is not providing on-site affordable housing).

Figure 9.2: Residential Viability in value band B net £/ha against the lower benchmark land value



Value Band C

9.2.7 11 of the residential case studies were tested in value band C:

- Res 1 – 8 dwellings for sale over 3 storeys at 64 dph (including scenario with an off-site affordable housing contribution of £30k/dwg)
- Res 2 – 24 dwellings for sale over 5 storeys at 120 dph
- Res 3 – 80 dwellings for sale over 4 storeys at 80 dph
- Res 4 - 80 dwellings for sale over 8 storeys at 250 dph
- Res 5 - 80 dwellings for rent over 8 storeys at 250 dph
- Res 6 – 150 dwellings for sale over 4 storeys at 80 dph
- Res 7 – 300 dwellings for sale over 9 storeys at 350 dph
- Res 8 – 300 dwellings for rent over 9 storeys at 350 dph
- Res 10 – 750 dwellings for sale over 8 storeys at 260 dph
- Res 11 - 750 dwellings for sale over 15 storeys at 450 dph
- Res 12 - 750 dwellings for rent over 15 storeys at 450 dph

9.2.8 Commentary:

- The build for sale schemes remain viable at 50% affordable housing with the lower BLV.
- The build to rent case studies are not viable at 50% affordable housing with 100% LLR (Res 5, Res 8 and Res 12 with Test 1), although when tested with 50:50 LLR:DMR (Test 2) they are viable against the lower benchmark.
- The build to rent schemes are viable with 35% affordable housing although the larger high-density Res 12 is viable with 50%DMR: 50% LLR (Test 5) but not when all affordable housing is at LLR (Test 4).
- The small (8 dwellings) Res 1 case study is viable with and without the affordable housing contribution.

9.2.9 Figures 9.3 and 9.4 illustrates the difference in viability between the different schemes tested in Band C with 50% affordable housing and for the build to rent schemes, with 35% and 20% affordable housing. The viability is based on the net residual value/ha for the scheme after deducting the lower benchmark land value. The residential for sale is coloured dark blue and build to rent is light blue.

Figure 9.3: Residential Viability in value band C net £/ha against the lower benchmark land value – 50% affordable housing and base scenario (0% affordable housing)

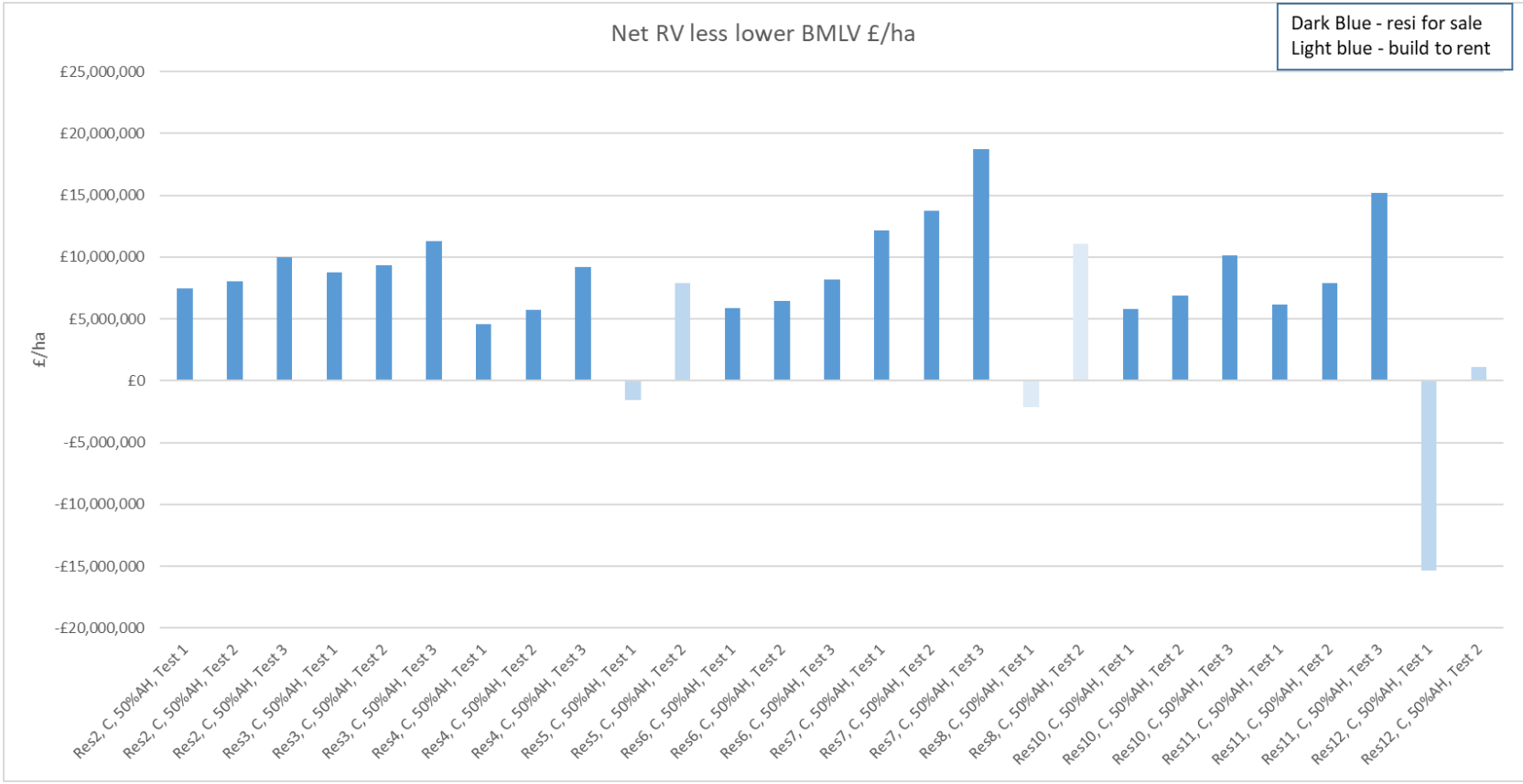
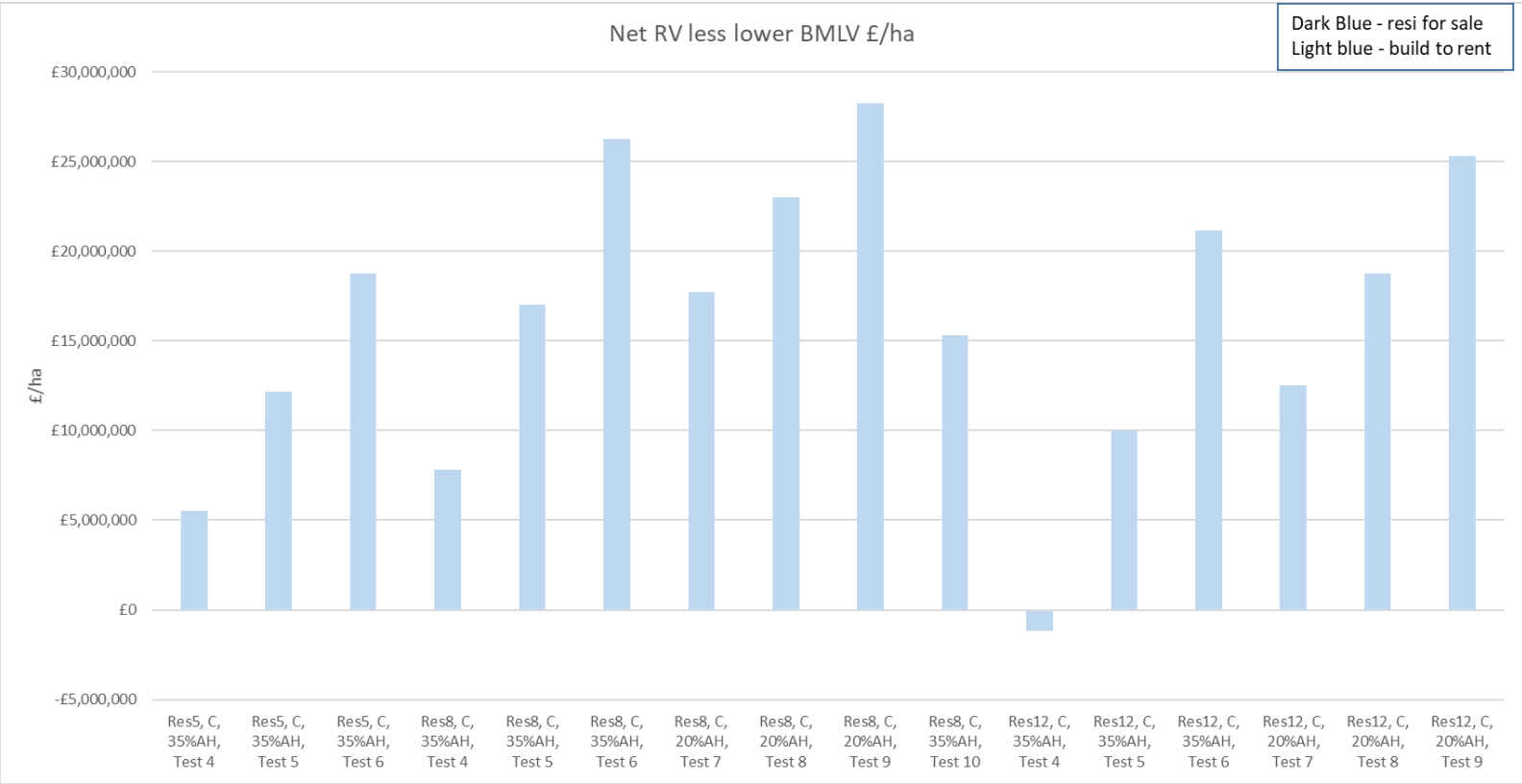


Figure 9.4: Residential Viability in value band C net £/ha against the lower benchmark land value – 35% and 20% affordable housing



Value Band D

9.2.10 All 12 standard residential case studies were tested in value band D:

- Res 1 – 8 dwellings for sale over 3 storeys at 64 dph (including scenario with an off-site affordable housing contribution of £30k/dwg)
- Res 2 – 24 dwellings for sale over 5 storeys at 120 dph
- Res 3 – 80 dwellings for sale over 4 storeys at 80 dph
- Res 4 - 80 dwellings for sale over 8 storeys at 250 dph
- Res 5 - 80 dwellings for rent over 8 storeys at 250 dph
- Res 6 – 150 dwellings for sale over 4 storeys at 80 dph
- Res 7 – 300 dwellings for sale over 9 storeys at 350 dph
- Res 8 – 300 dwellings for rent over 9 storeys at 350 dph
- Res 9 – 300 dwellings for sale over 3 storeys (flats and houses) at 64 dph
- Res 10 – 750 dwellings for sale over 8 storeys at 260 dph
- Res 11 - 750 dwellings for sale over 15 storeys at 450 dph
- Res 12 - 750 dwellings for rent over 15 storeys at 450 dph

9.2.11 Commentary:

- The majority of case studies remain viable at 50% affordable housing at the lower benchmark.
- The lower density schemes provide the best viability on a £ per ha basis (Res 3 and Res 9), indicating that these built forms may be more suited to lower value areas (although higher density development is still viable in this value band). Higher densities in lower built form may be more viable in lower value areas than the taller buildings used in this testing.
- Where DMR is the affordable housing tenure (BtR Test 3), build to rent (Res 8) can be more viable than the for-sale equivalent (Res 7).
- At 50% affordable housing four of the case studies are not viable:
    - Res 4 (for sale)
    - Res 5 (build to rent)
    - Res 11 (for sale, larger high density) – and this case study does not meet the lower benchmark even with no affordable housing in value band D.
    - Res 12 (Build to Rent, high density)
- Res 8 (build to rent) is viable with 50% housing but only with 100% DMR Test 3 as the affordable tenure; and Res 10 (for sale, higher density) is marginal at all affordable tenures.
- These unviable/marginal case studies were then tested at 35% affordable housing and at 20% affordable housing. Reducing the affordable housing to 35% produced viable results

for the two smaller build to rent case studies (Res 5 and Res 8), when tested with a combination of LLRs and DMR. Res 10 is also viable at 35% housing although the headroom is relatively small for this higher density scheme.

- Res 4 and Res 12, which were both unviable at 35% affordable housing, were then tested at 20% affordable housing. Reducing the affordable housing to 20% produces a viable result against the lower benchmark for Res 4, and Res 12, although only where the affordable housing is predominantly LSO/all DMR respectively (Test 9).
- Both the standard and the additional cost scenarios are viable for the small (8 dwellings) Res 1 case study.

9.2.12 Figures 9.5, 9.6 and 9.7 illustrate the difference in viability between the different schemes tested in Band D with 50% affordable housing and for those not viable at 50%, with 35% affordable housing and 20% affordable housing. The viability is based on the net residual value/ha for the scheme after deducting the lower benchmark land value. The residential for sale is coloured dark blue and build to rent is light blue.

Figure 9.5: Residential Viability in value band D net £/ha against the lower benchmark land value – 50% affordable housing

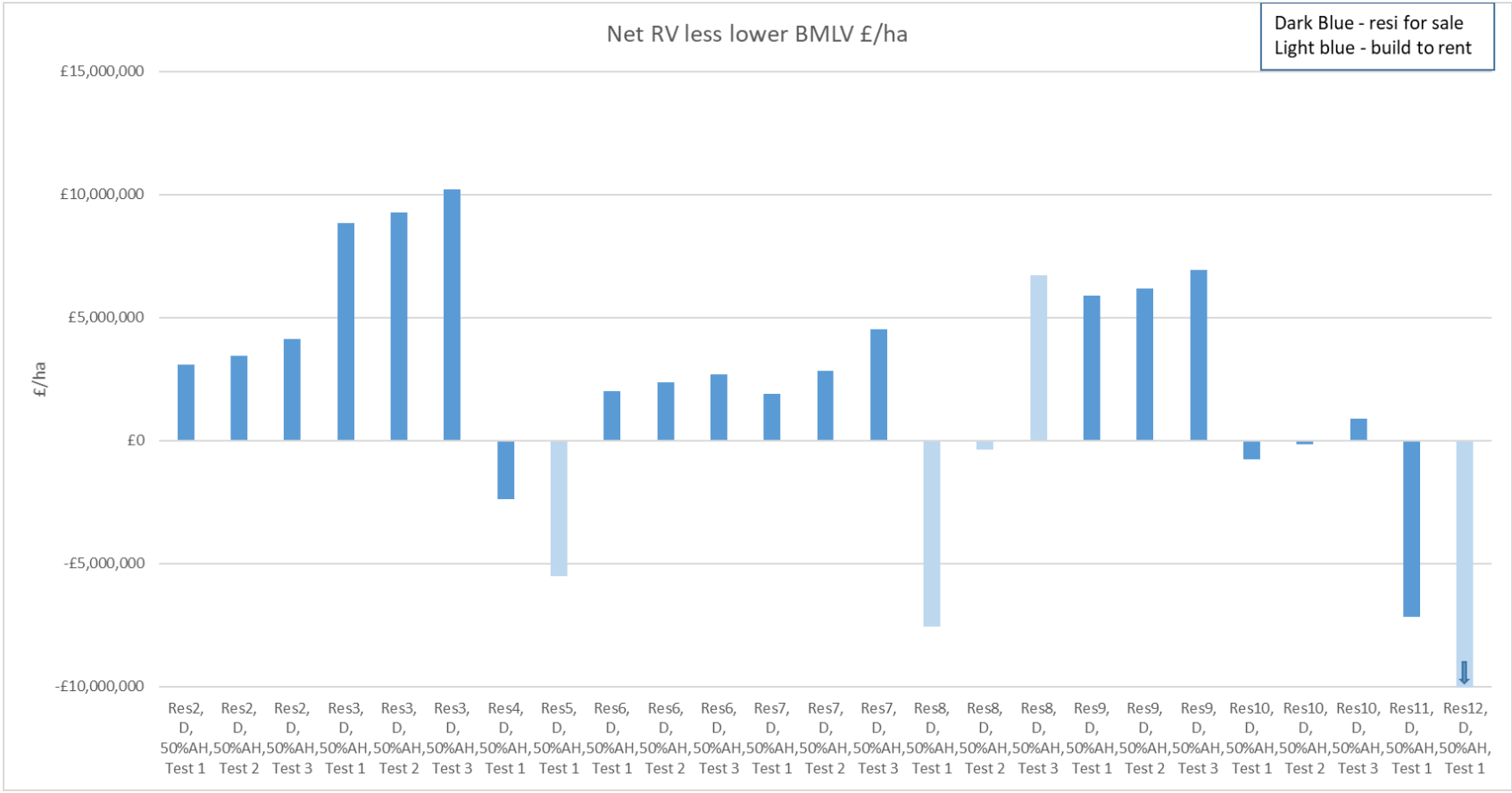


Figure 9.6: Residential Viability in value band D net £/ha against the lower benchmark land value – 35% affordable housing

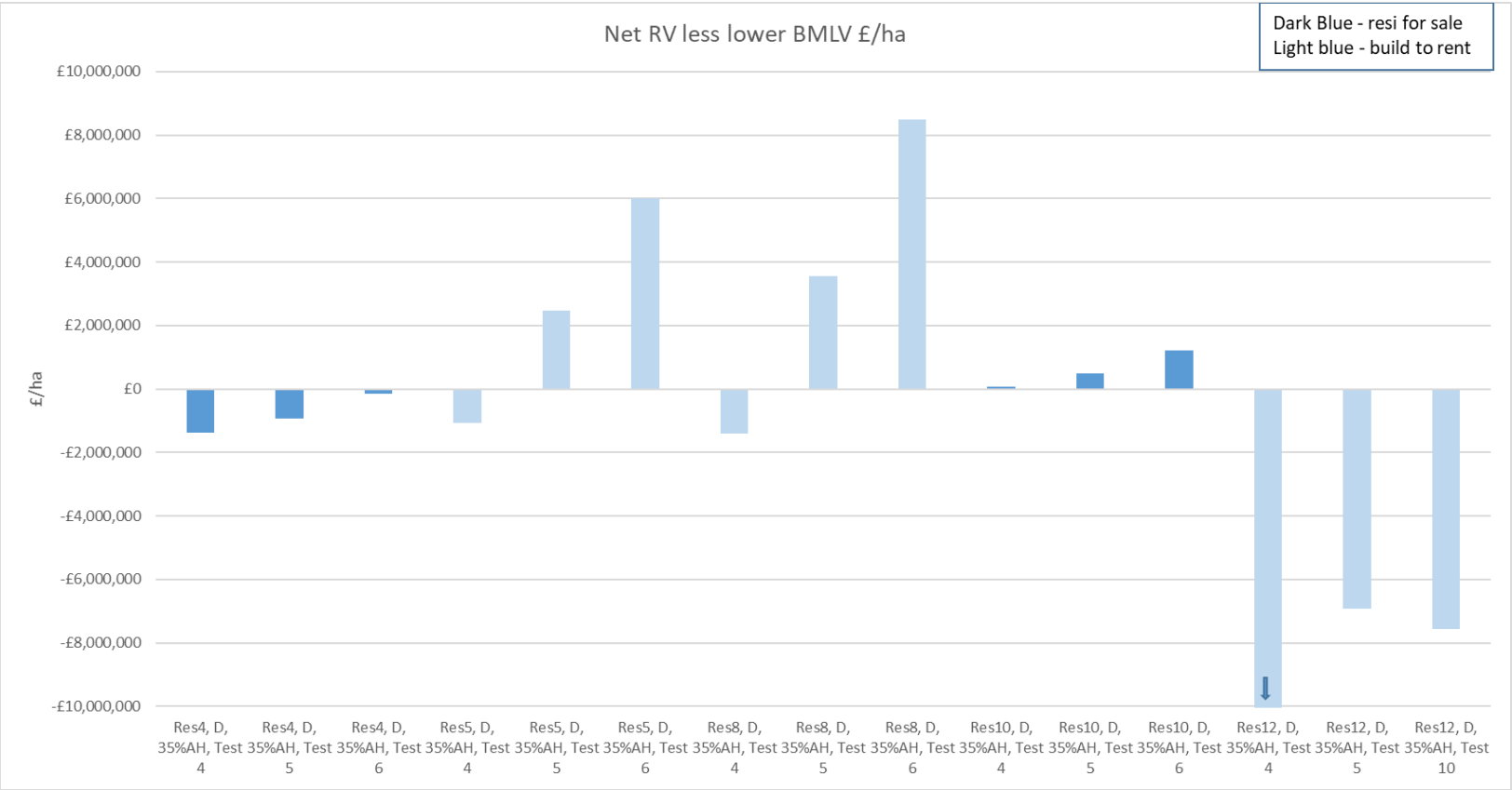
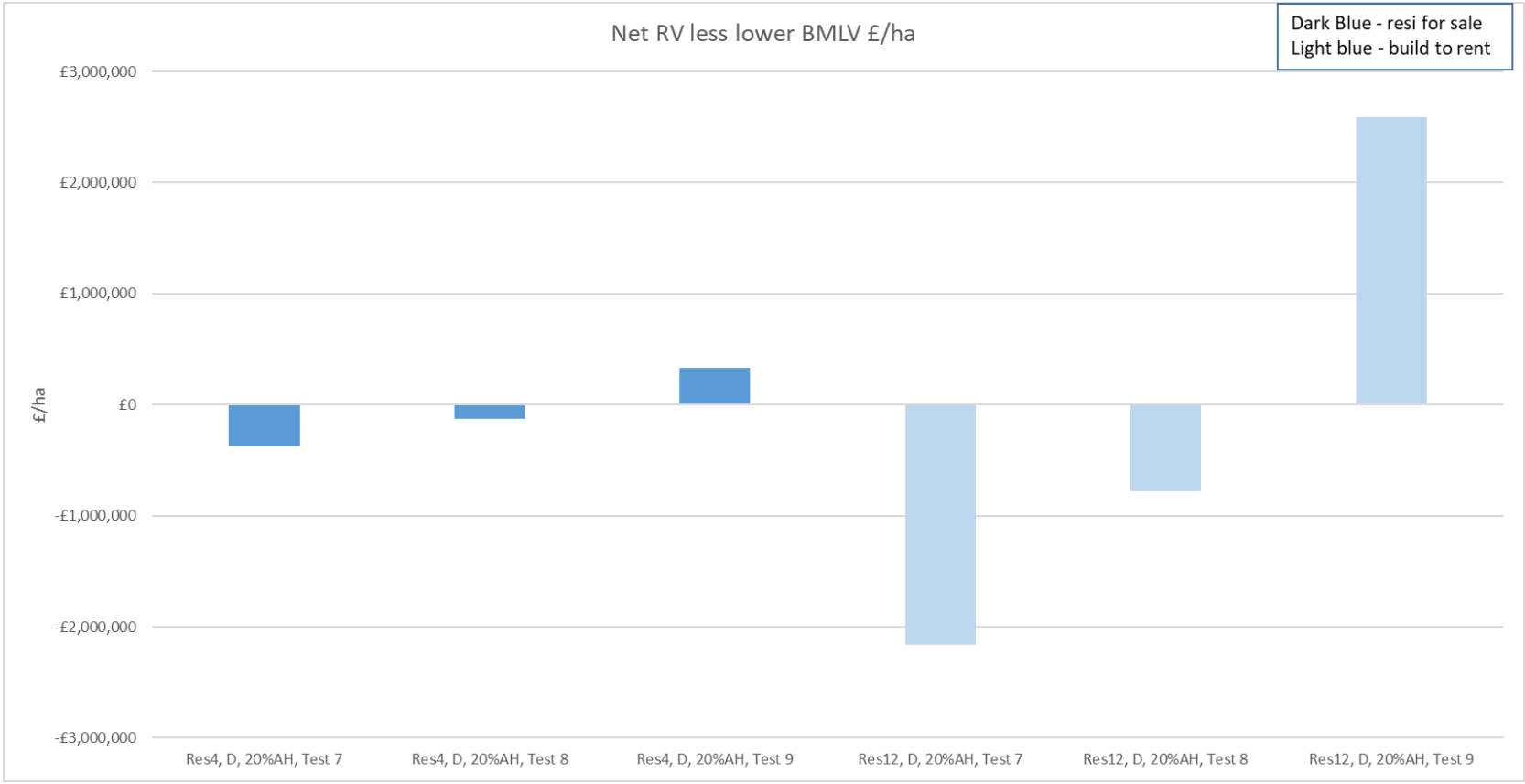


Figure 9.7: Residential Viability in value band D net £/ha against the lower benchmark land value – 20% affordable housing



Value Band E

9.2.13 All 12 standard residential case studies were tested in value band E:

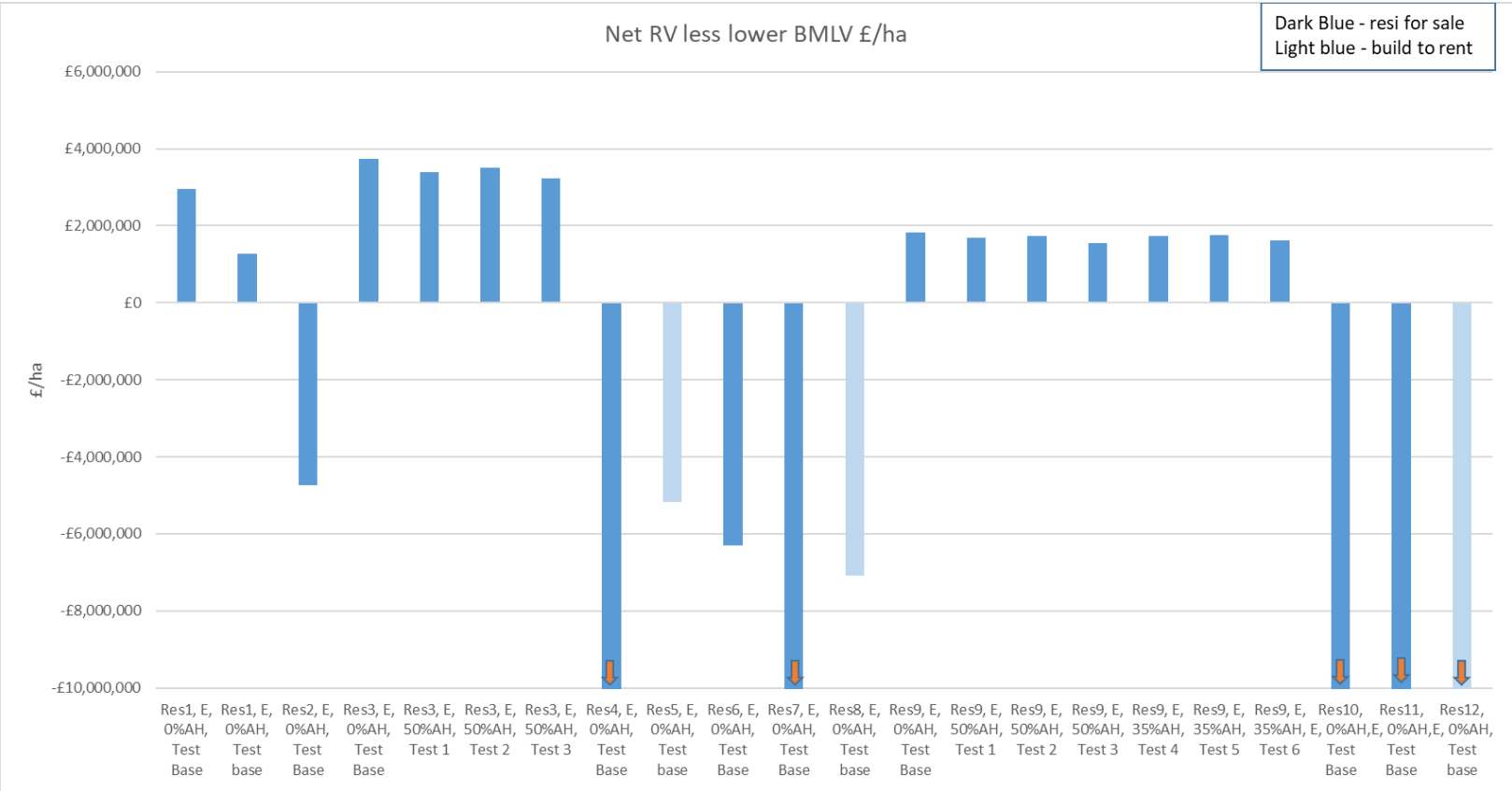
- Res 1 – 8 dwellings for sale over 3 storeys at 64 dph (including scenario with off-site affordable housing contribution of £30k/dwg)
- Res 2 – 24 dwellings for sale over 5 storeys at 120 dph
- Res 3 – 80 dwellings for sale over 4 storeys at 80 dph
- Res 4 - 80 dwellings for sale over 8 storeys at 250 dph
- Res 5 - 80 dwellings for rent over 8 storeys at 250 dph
- Res 6 – 150 dwellings for sale over 4 storeys at 80 dph
- Res 7 – 300 dwellings for sale over 9 storeys at 350 dph
- Res 8 – 300 dwellings for rent over 9 storeys at 350 dph
- Res 9 – 300 dwellings for sale over 3 storeys (flats and houses) at 64 dph
- Res 10 – 750 dwellings for sale over 8 storeys at 260 dph
- Res 11 - 750 dwellings for sale over 15 storeys at 450 dph
- Res 12 - 750 dwellings for rent over 15 storeys at 450 dph

9.2.14 Commentary:

- Only the lower density schemes are viable in value band E – Res 1, Res 3 and Res 9 (64 dph, 80 dph and 64 dph respectively) when tested on a current day basis. The lower costs for these built forms are the factor in the stronger viability in lower value areas. Res 3 and Res 9 are able to provide 50% affordable housing in value band E. Higher densities in lower built form may be more viable in lower value areas than the standard taller building scenarios used in this testing across all five of the value bands.
- Res 1 is the small scheme below the on-site affordable housing threshold, and is viable with and without the affordable housing contribution.
- All of the other case studies are not viable in value band E, even with no affordable housing.

9.2.15 Figure 9.8 illustrates the difference in viability between the different schemes tested in Band E with varying proportions of affordable housing. The viability is based on the net residual value/ha for the scheme after deducting the lower benchmark land value. The residential for sale is coloured dark blue and build to rent is light blue.

Figure 9.8: Residential Viability in value band E net £/ha against the lower benchmark land value



9.3 Sensitivity testing

9.3.1 Sensitivity testing was undertaken to explore the impact of additional abnormal costs of £183/sq m costs as well as affordable housing grant of £28,000 per affordable dwelling. Grant is more likely to be applied to sale development than build to rent although it has been tested for build to rent as Registered Providers are eligible where affordable units are provided at London Living Rents.

Additional abnormal costs

9.3.2 In value bands A, B and C the additional costs have an impact, but viability remains strong, and the case studies tested remain able to provide 50% affordable housing against the lower benchmark land value.

9.3.3 In value band D, the additional costs also have an impact and there are two case studies that are no longer able to provide 50% affordable housing (Res 7 and Res 10, which was marginal). However, Res 7 is still able to provide 35% affordable housing with the higher costs with high proportions of LSO (Test 6) while Res 10 is not able to provide any affordable housing.

9.3.4 In value band D there were two case studies that originally were not able to support 50% affordable housing, but were able to support 35% (Res 5 and res 8). These two are still able to provide 35% with high proportions of LSO/DMR respectively (Test 6). There were also two case studies that could support 20% affordable housing (Res 4 and res 12) but under the higher costs scenario these are not able to provide 20% affordable.

9.3.5 In value band E the original testing showed that only the lower density schemes Res 1, Res 3 and Res 9 were viable. With these additional sensitivity test costs, all three case studies remain viable and able to provide the same amount of affordable housing.

Affordable housing grant

9.3.6 The original testing in value band C showed that the three Build to Rent case studies were not able to provide 50% affordable housing at 100% LLR. With the introduction of grant then two of them are able to do so (Res 5 and Res 8). With the grant, Res 12 is now able to provide in excess of 35% with all LLR, whereas before there needed to be more DMR in the mix.

9.3.7 In value band D, four of the case studies were not able to provide 50% affordable housing in the original testing and one was able to dependent on tenure. With grant, 50% is still not achieved although the viability is stronger. Of the case studies that were able to provide 35%, three were originally able to subject to tenure, but with grant the viability is strengthened and in excess of 35% is achievable under any of the tenure mixes. Two case studies were originally tested at 20% as they were unviable at 35%, and with grant one of them (the for-sale Res 4) is now able to provide in excess of 35% while the other (Res 12) is still not able to.

9.3.8 In value band E, only the lower density schemes are viable – Res 1, Res 3 and Res 9. There is no clear increase in affordable housing even with grant with these typologies in the current circumstances.

9.4 Medium and Higher Benchmark Land Values

9.4.1 The analysis above focusses on the residual value of the case studies in relation to the lower benchmark land values. However, the testing includes comparison to higher benchmarks:

- In value band A the case studies are also viable against the medium and higher benchmark land values with 50% affordable housing, although with some exceptions

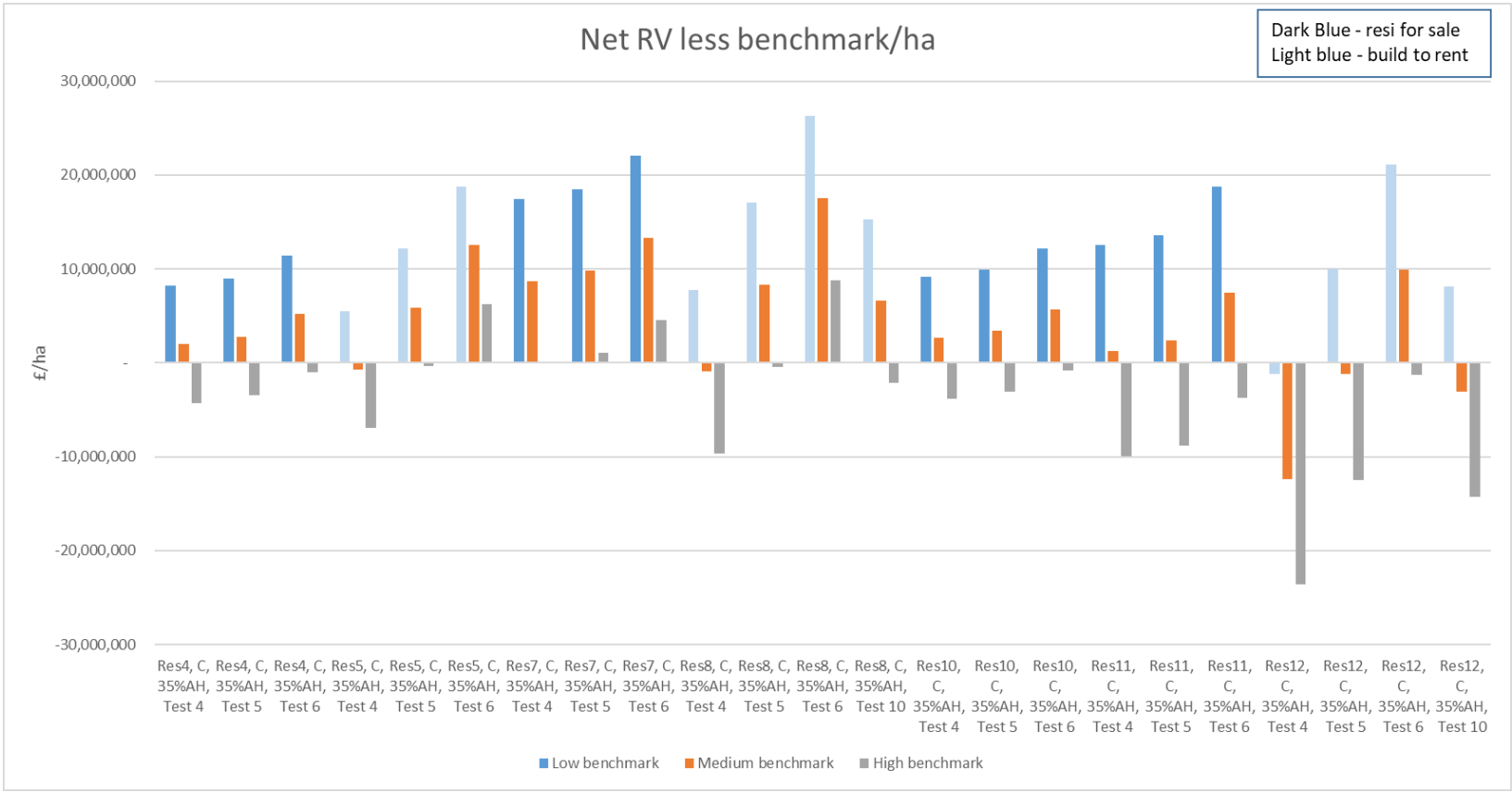
against the highest benchmark. These exceptions are Res 8 for Tests 1, 2 and 3 (although Test 3 is marginal); and Res 12 for Tests 1, 2 and 3 (both build to rent schemes).

- In value band B they are also viable against the medium and higher benchmark land values with 50% affordable housing in most cases – the exceptions are the higher benchmark for affordable housing tenure Test 1 for Res 5 and 8, as well as Test 1 and Test 2 for Res 12; and Test 1 against the medium benchmark for Res 12.
- In value band C, all bar the Build to Rent Schemes were viable with 50% affordable housing against the lower benchmark for all tenures. However, at 50%, for three of the residential for sale case studies, RV did not exceed the medium benchmark with at least one affordable housing tenure mix against the medium benchmark, and another three did not exceed the higher benchmark.
- In value band D, seven of the case studies were viable against the lower benchmark at 50% affordable housing (some depending on tenure split), but one of these did not reach the medium benchmark and another two did not reach the higher benchmark.
- In value band E, both Res 3 and Res 9 meet the medium and higher benchmarks with 50% affordable housing.
- Where abnormal costs are added more of the schemes will no longer exceed the medium or higher benchmarks in lower value areas, although this is not always the case. For example, the two low density schemes in E (Res 3 and Res 9) still meet the medium and higher benchmarks with 50% affordable housing.

9.4.2 Overall, in value bands A and B there is a considerable viability margin with 50% affordable housing, with the residual values exceeding the medium and higher benchmarks in most cases. However, in lower value areas, the viability headroom is generally smaller and there are more instances where the case studies are viable against the lower benchmarks but not the medium or higher benchmarks, with various exceptions. However, when tested with a higher level of intermediate affordable housing a greater proportion of scenarios are viable.

9.4.3 Figure 9.9 illustrates the viability of different case studies in value band C at 35% affordable housing against the low, medium and high benchmarks without grant. It shows that most affordable housing tenures for most case studies are viable against the low and medium benchmark land values, but there is a mixed viability against the higher benchmarks in this value band when tested on a current day basis.

Figure 9.9 Residential Viability in value band C net £/ha against the lower, medium and higher benchmark land values (35% affordable housing)



9.5 Summary

9.5.1 In the higher value bands residual values are strong and schemes are generally capable of providing high levels of affordable housing, particularly for sites with low/ mid benchmark land values. Most of the residential case studies tested in value bands A and B are viable at 50% affordable housing.

9.5.2 Many of the residential case studies are also viable at 50% affordable housing in value band C, except for the Build to rent schemes with high proportions of LLR. In value bands D and E viability is more varied although this is as much related to the typology and built form as the affordable housing required. 35% affordable housing is viable across the value bands at an appropriate tenure. Note that the value bands are not strictly geographically based and that there will be pockets of high values in surrounding low value areas, and vice versa.

9.5.3 Additional cost sensitivity tests show relatively little impact on the proportion of affordable housing that can be achieved. Whilst viability is weakened, only a minority of case studies tested in most of the value areas are significantly affected. The impact of the additional abnormal costs is seen most in the lower value areas.

9.5.4 The provision of affordable housing grant is able to increase provision in some cases.

9.5.5 Overall, in value bands A and B schemes are able to provide higher levels of affordable housing depending on the benchmark land value and 35% affordable housing where 50% is not viable. However, in lower value areas, the viability headroom is generally smaller and there are more instances where the case studies are viable against the lower benchmarks but not the medium or higher benchmarks. In relation to the viability against the lower land values, this indicates that a threshold of 50% is appropriate on public sector land and industrial sites.

9.5.6 It is apparent from the viability testing that some types of development are more viable than others and that this varies between value bands e.g. the higher density schemes are more viable in the higher value areas; and the lower density schemes are more viable in the lower density areas. These differences exist irrespective of the potential policy constraints that may be applied. In some of the lower value areas it may be possible to have more viable high density development than the typologies tested here by using a low-rise form of development; and this would allow more certainty around affordable housing provision where values are lower.

9.5.7 The viability testing includes some relatively conservative assumptions, such as current day values and CIL applied on gross rather than net additional floorspace.

9.5.8 The testing of the residential schemes suggests that the policy approach of a 35% affordable housing threshold and 50% affordable housing on public or industrial land is deliverable in most parts of London. For some built forms, it may be difficult to deliver the policy in lower value areas, but with the right form of development, the threshold can be supported.

9.5.9 Build to Rent can be slightly less viable than for sale although build to rent is supported by the policy requirement for Discounted Market Rent rather than low cost rented affordable housing. Most Build to Rent case studies can support 35% affordable housing providing both DMR and LLRs at the levels tested. This is an appropriate threshold that would enable Build to Rent schemes to benefit from the Fast Track Route.

9.5.10 There are some instances where schemes may not be able to provide the threshold level of affordable housing. Under the Draft Plan schemes that cannot meet the relevant threshold will be viability tested to determine the appropriate level of affordable housing whilst ensuring delivery. In these cases, it is appropriate to undertake a review of viability at a later stage in the development process to determine whether changes in costs and values enable a greater

proportion of affordable housing (or other policy requirements) to be achieved, whilst achieving an appropriate return for the developer.

10 Testing Results – Other residential

10.1 Testing undertaken

10.1.1 Other residential uses are included in the testing, with different proportions and types of affordable housing as follows:

- Sheltered and Extra Care housing are tested with 50%, 35% and 20% affordable housing. In addition to the standard tenure mixes used in the rest of the residential testing, Extra Care is also tested at 35% and 20% affordable housing with 100% shared ownership as the affordable tenure (Tests 7 and 8 respectively).
- Care homes are not required to provide affordable housing but are subject to other policies (such as energy etc.) and are therefore included in the testing. Two schemes are tested – a standalone scheme and a scheme forming part of a taller building
- Student accommodation is tested with 50%, 35% and 20% affordable student accommodation. Two student schemes are tested – both have 300 rooms but one is at 9 storeys and the other at 15 storeys.
- Shared living is tested with the equivalent 50%, 35% and 20% affordable housing.

10.1.2 The viability testing is initially based on a comparison of the net residual value against the lower benchmark land value. Medium and higher benchmarks are also considered. A full set of results are shown in Annex K.

10.1.3 **Sheltered/Extra Care** - the order of testing is as follows, showing first the overall % of affordable housing then the proportion of affordable housing tenures for each:

Table 10.1: Standard residential affordable housing tenure mix

Test	AH percentage	AH tenure mix (%)*
1	50%	60 LAR: 40 LSO
2	50%	30 LAR: 70 LSO
3	35%	60 LAR: 40 LSO
4	35%	30 LAR: 70 LSO
5	20%	60 LAR: 40 LSO
6	20%	30 LAR: 70 LSO
7	35%	100% LSO
8	20%	100% LSO

10.1.4 For **Student** accommodation - the order of testing is as follows with the AH Student units at the Mayor's benchmark annual net rent of £6,051 (inclusive of service charges)

Table 10.2: Student accommodation affordable housing

Test	AH percentage
1	50%
2	35%
3	20%

10.1.5 For **Shared Living**- the order of testing is as follows, with the affordable housing based on discounted market rent at 50% of market values. The testing assumes that the provision will be an offsite contribution, to an equivalent cost.

Table 10.3: Shared living affordable housing

Test	AH percentage
1	50%
2	35%
3	20%

10.1.6 All of these other residential uses are tested in the five residential value bands (A-E) except Extra Care which is just tested in C, and Sheltered which is tested in C, D and E.

10.2 Results of the testing

Sheltered and Extra Care housing

10.2.1 Figure 10.1 illustrates the viability for Sheltered accommodation, and Figure 10.2 for Extra Care.

Figure 10.1: Sheltered viability net £/ha against the lower benchmark land value

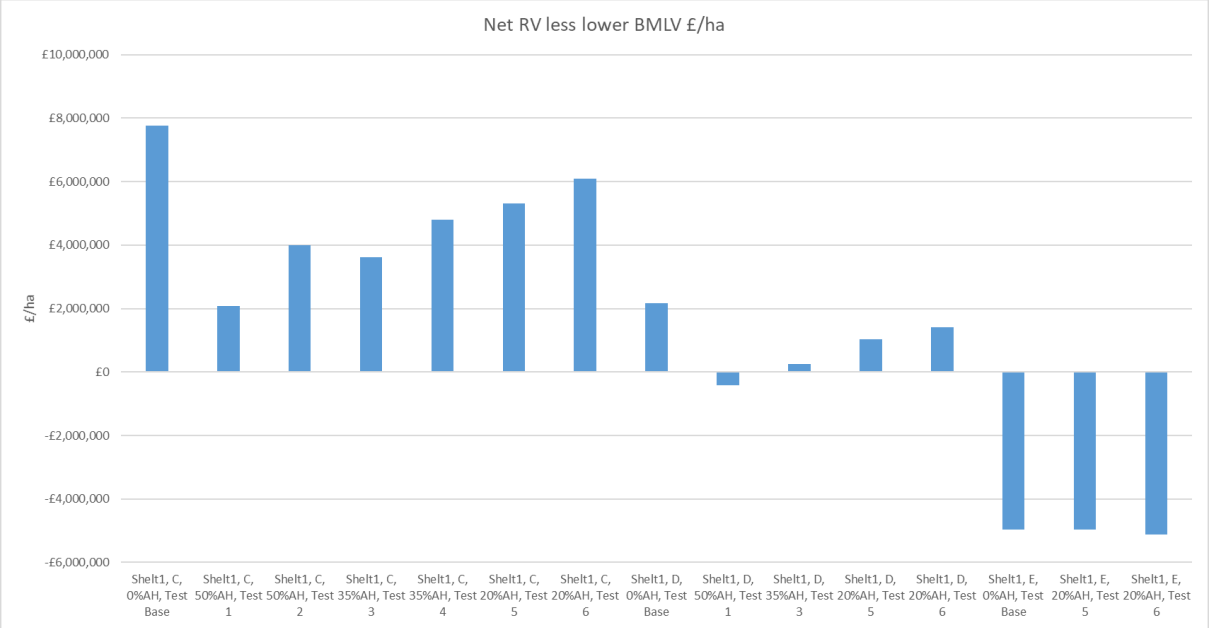
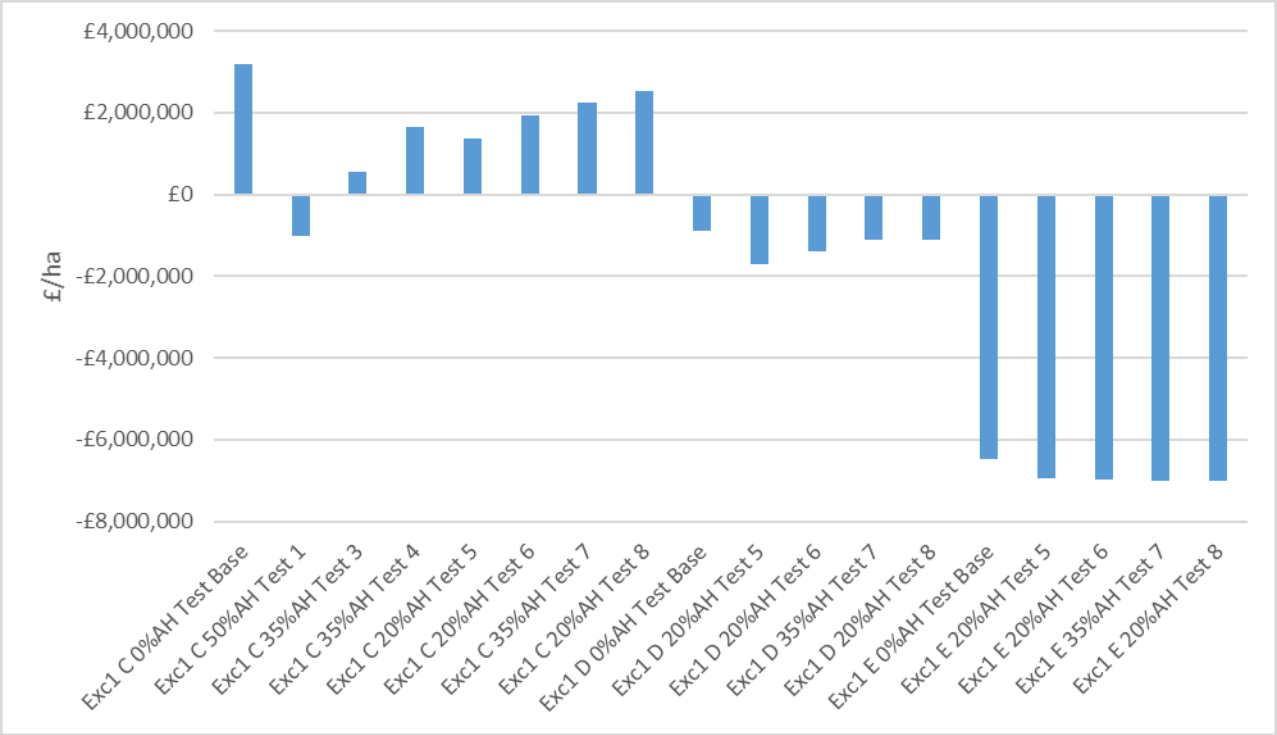


Figure 10.2: Extra Care viability net £/ha against the lower benchmark land value



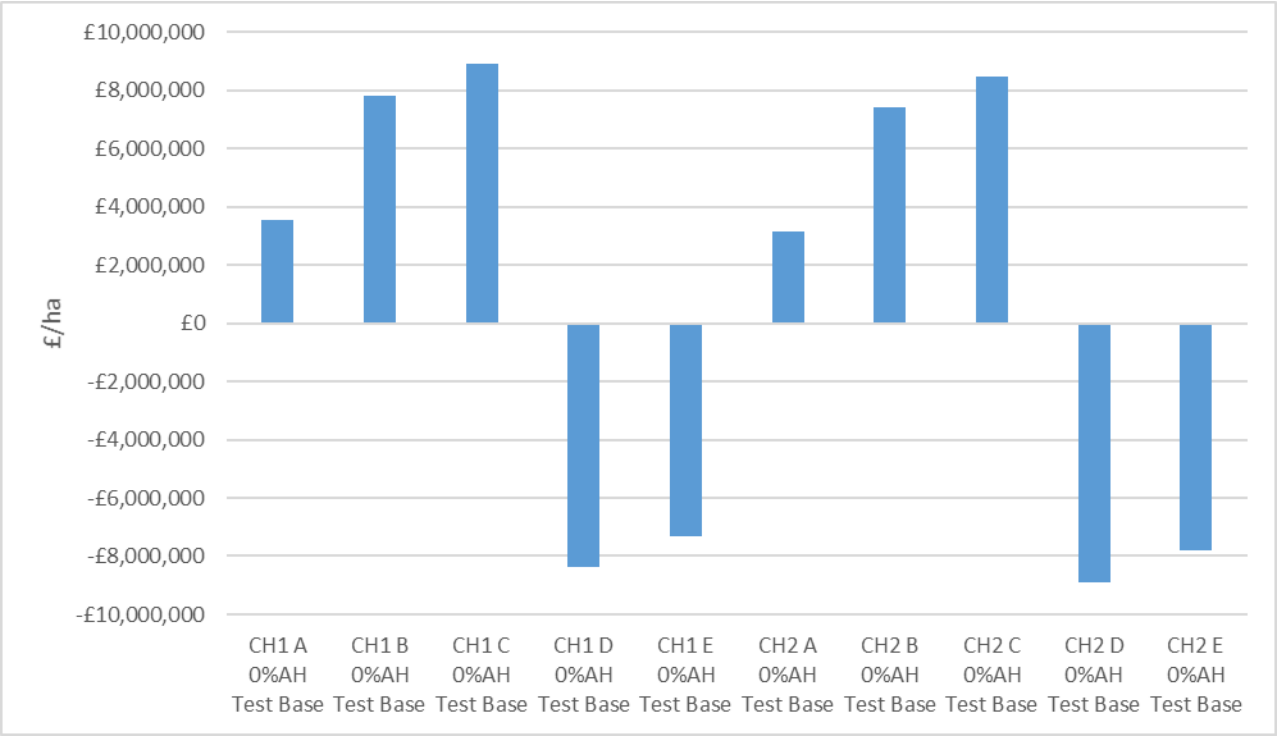
10.2.2 Commentary

- Sheltered housing is viable with 50% housing in value band C against the lower benchmark, and is able to provide 35% in value band D (although 20% gives more headroom). Sheltered housing as tested is not viable in E.
- Extra Care Housing is viable in C with 35% affordable housing, and unviable in D and E even with no affordable housing.

Care Homes

10.2.3 Figure 10.3 illustrates the viability for Care Homes. This assumes private care home provision assuming no public funding.

Figure 10.3: Care home viability net £/ha against the lower benchmark land value



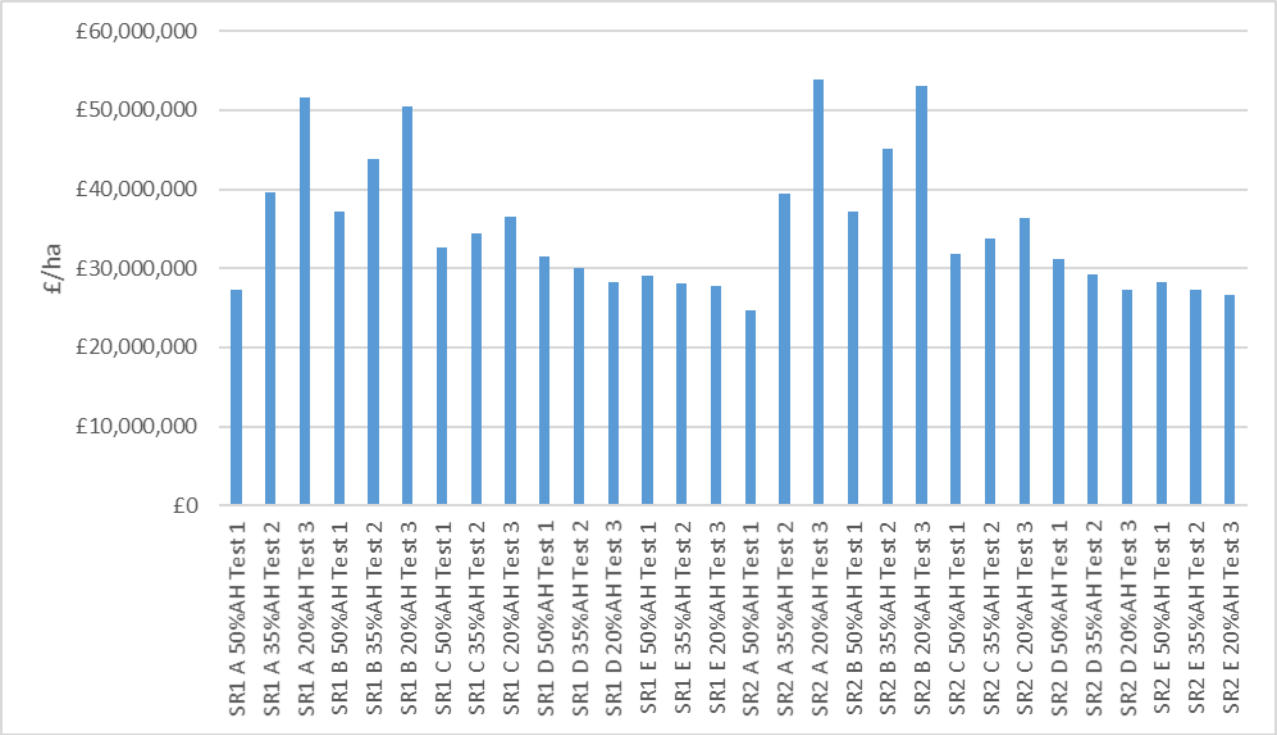
10.2.4 Commentary

- Care homes are viable in value bands A, B and C, but not in D or E. Both the schemes tested have similar viability.
- Based on the testing scenarios this model is not viable in outer areas with or without policy requirements. However, publicly funded care homes may still come forward where there is need in outer areas.

Student Accommodation

10.2.5 Figure 10.4 illustrates the viability for Student Accommodation.

Figure 10.4: Student accommodation viability net £/ha against the lower benchmark land value



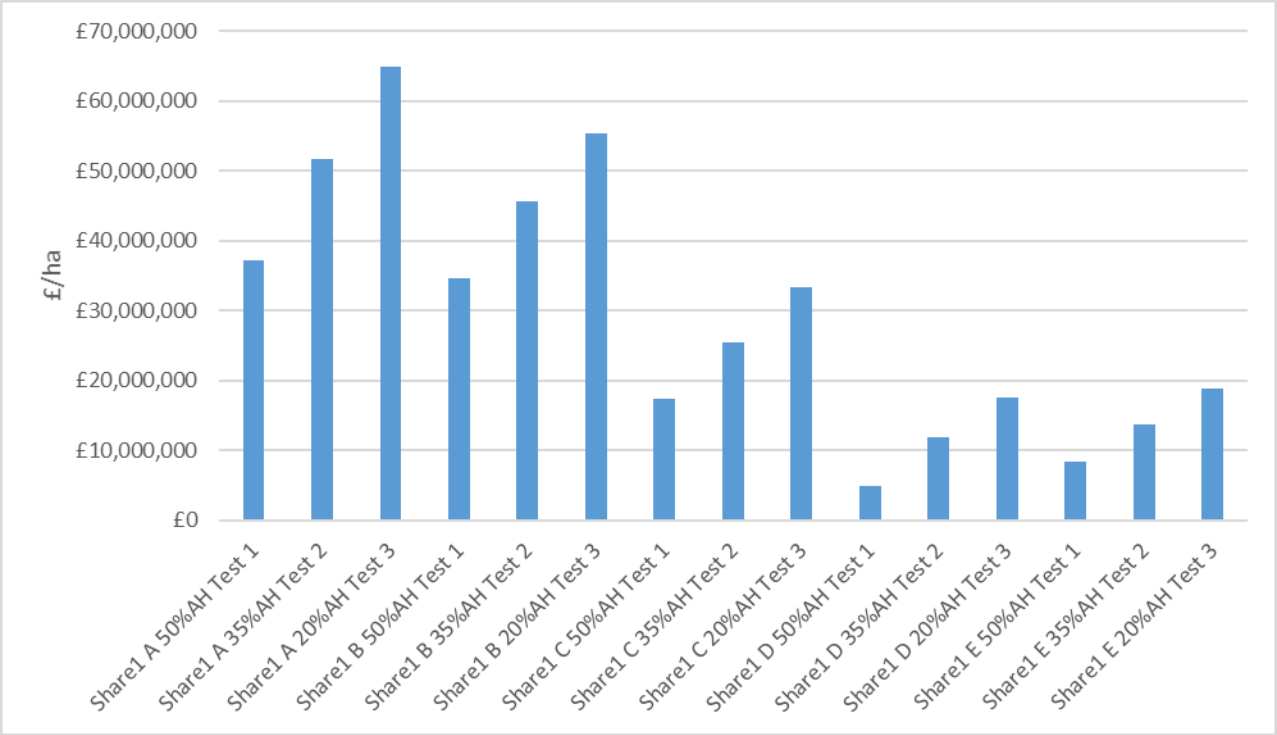
10.2.6 Commentary

- The testing indicates that student accommodation is viable with 50% affordable student accommodation in all value bands.
- In the highest value band, the impact of providing more affordable student accommodation is quite marked but in the lower value bands the difference between market student rents and the affordable student rents is small and therefore the impact of the affordable provision much less than in higher value areas.
- The taller building SR2 is less viable than SR1 in all value bands.

Shared Living

10.2.7 Figure 10.5 illustrates the viability for Shared living accommodation.

Figure 10.5: Shared Living viability net £/ha against the lower benchmark land value



10.2.8 Commentary

- The testing indicates that Shared Living accommodation is viable with a contribution that is the equivalent to 50% affordable housing (at a discounted rent at 50% of market levels) in all value bands.

10.3 Medium and Higher Benchmark Land Values

10.3.1 The analysis above focusses on the residual value of the case studies in relation to the lower benchmark land values. However, the testing includes comparison to higher benchmarks:

- For Sheltered housing in value band C the 50% affordable housing is viable against the medium benchmark. However, some of the 35% provision and all of the 20% provision is viable against the higher benchmark. In D, 20% is viable against the lower benchmark only.
- Extra Care is only viable against the medium benchmark in C with 35% affordable housing at 100% LSO (Test 7), or with 20% affordable housing with a mix of tenures (Test 6).
- Care homes are viable in A-C against the lower benchmark, but only some of the medium or higher benchmarks.
- Student accommodation and Shared Living are viable against all of the higher benchmarks, except for some of the tests in Value Band A. Here, neither Shared Living

nor the student accommodation case studies are able to provide 50% or 35% housing against the highest benchmark, although 50% can be achieved against the medium benchmark for Shared Living and SR1, and 35% for SR2. Shared Living is also not able to provide 50% affordable housing in Value Band D.

10.3.2 Figure 10.6 illustrates the Sheltered accommodation viability results against the range of benchmarks, Figure 10.7 for Extra Care, Figure 10.8 for student and Figure 10.9 for Shared Living.

Figure 10.6: Sheltered accommodation viability net £/ha against the range of benchmark land value

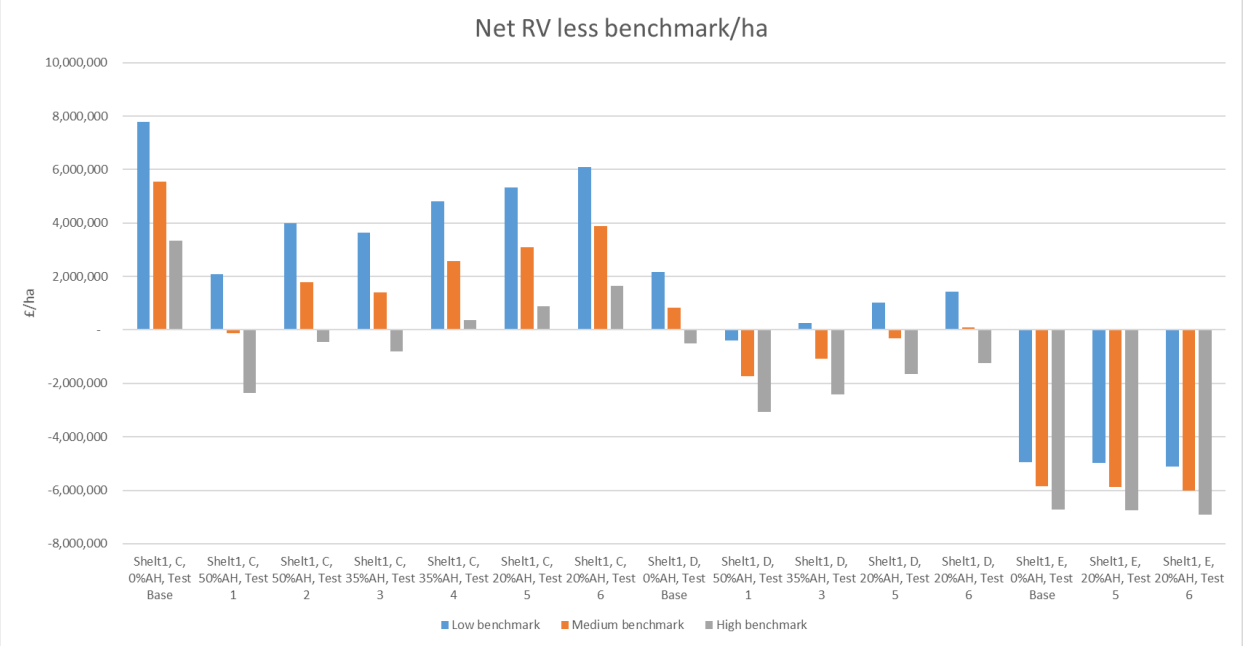


Figure 10.7: Extra Care accommodation viability net £/ha against the range of benchmark land values

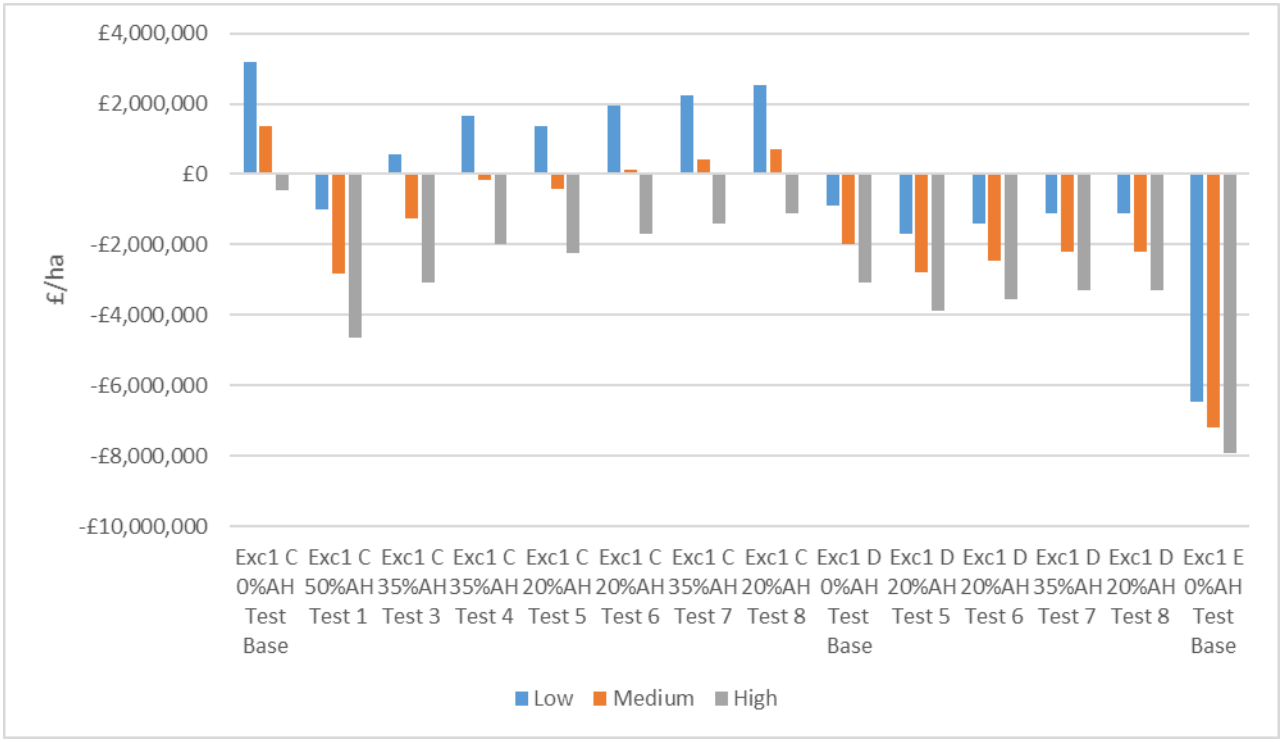


Figure 10.8: Student accommodation viability net £/ha against the range of benchmark land values

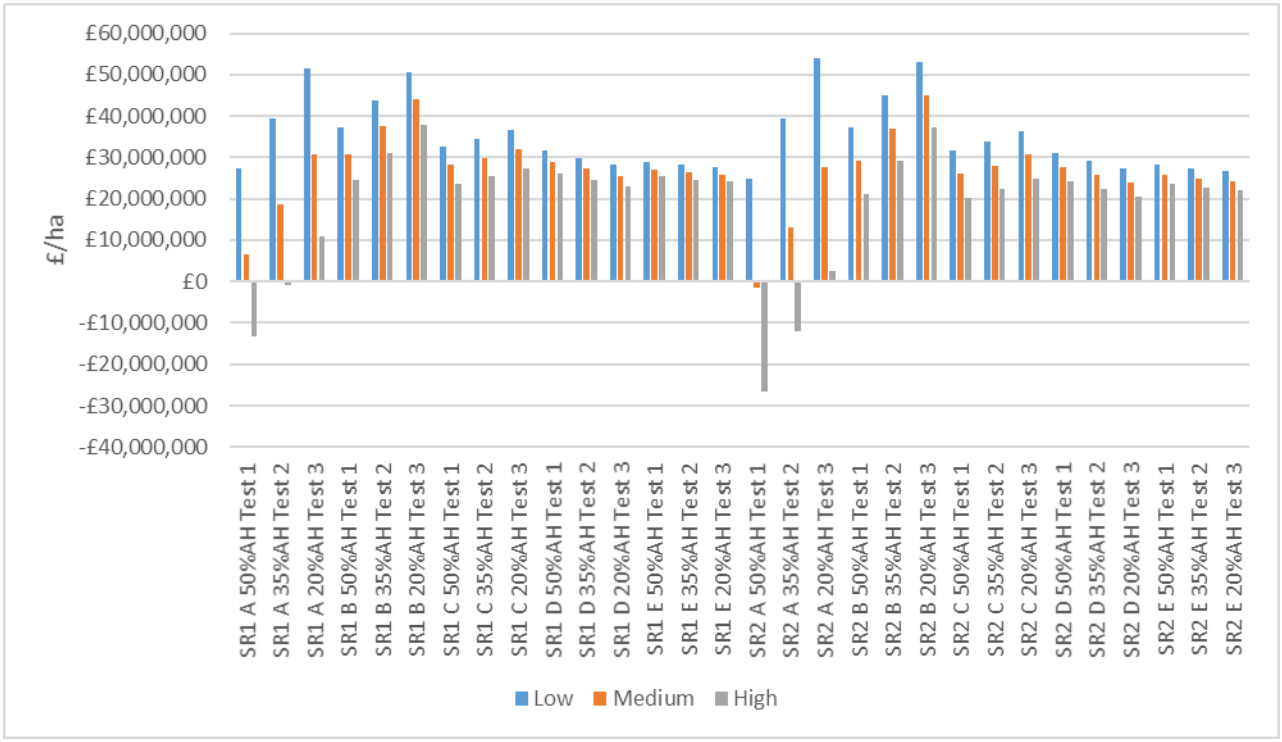
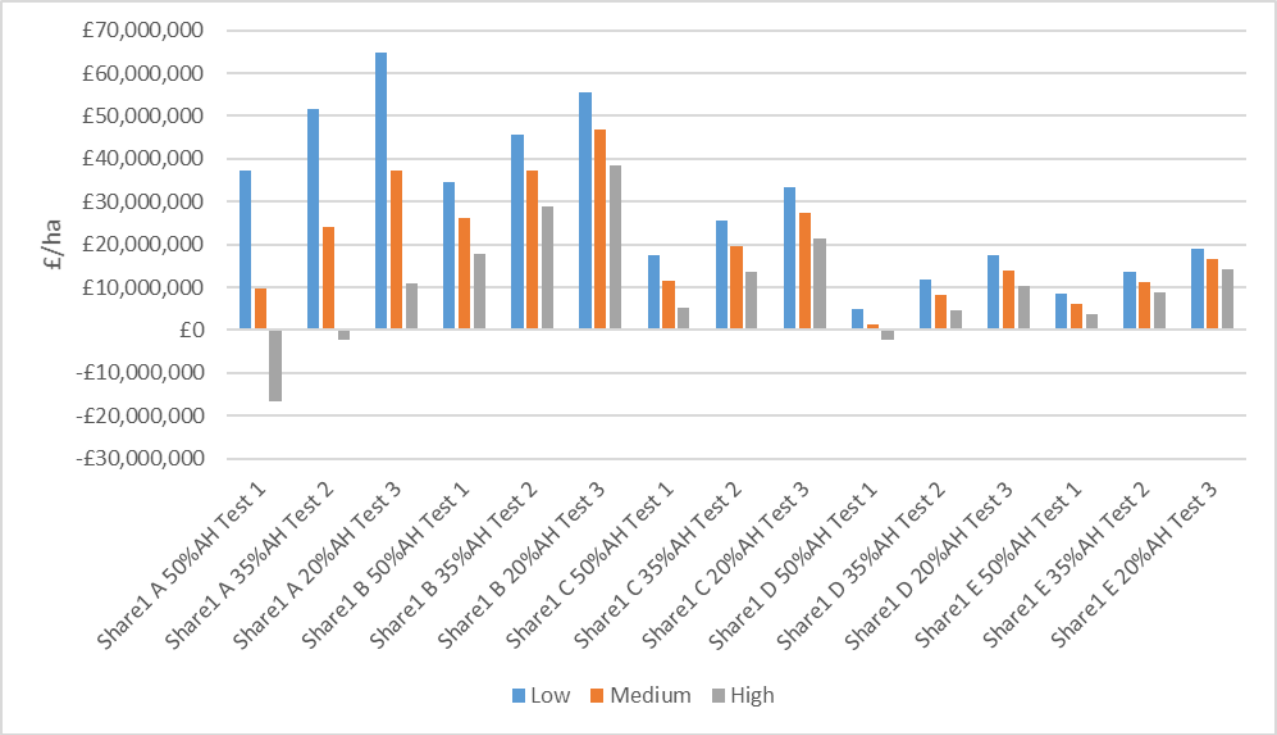


Figure 10.9: Shared Living viability net £/ha against the range of benchmark land value



10.4 Summary

10.4.1 The types of other residential accommodation tested are generally viable and able to provide affordable housing (when required to do so) in at least some value bands. However, there are considerable differences between the uses.

10.4.2 Sheltered housing is able to provide 50% affordable housing in value band C, and 35% in D, but is not able to provide affordable housing in E. Extra Care is viable in C with 35% affordable housing but not viable in D or E.

10.4.3 Both student accommodation and Shared Living are more viable, and this includes all of the value bands, although there are some exceptions to 50% being viable against the high benchmark land values, particularly in Value Band A. In these cases, 35% is generally viable.

10.4.4 Overall, the policy requirements for student accommodation and Shared Living can be met, while the requirements for Sheltered accommodation may be more challenging in some areas.

11 Testing results - Mixed-use schemes

11.1 Testing undertaken

11.1.1 The viability testing includes mixed residential and commercial use schemes:

- MU1 – 690 dwellings over 10 storeys at 383 dph with 4,000 sq M retail/leisure plus 5,000 sq m office
- MU2 – 1,500 dwellings over 10 storeys at 450 dph with 6,000 sq m retail/leisure and 9,000 sq m office.
- NR10 – 350 dwellings over 8 storeys at c.350 dph adjacent to 20,000 sq m B8 over 4 storeys.
- NR11 – 86 dwellings over 8 storeys at 246 dph above 1,000 sq m B1c on 1 storey.

11.1.2 MU1 and MU2 are tested in value bands A-E, while NR10 and NR11 are tested in value bands C-E.

11.1.3 The testing undertaken assessed the impact of different amounts of affordable housing (20%, 35% and 50%) and different combinations of types of affordable housing, as well as the 'base' position with no affordable housing. A full set of results are shown in Annex K.

11.1.4 For mixed tenure market residential schemes - the order of testing is as follows, showing first the overall % of affordable housing then the proportion of the different affordable housing tenures that make up the overall affordable housing amount:

Table 11.1: Standard residential affordable housing tenure mix

Test	AH percentage	AH tenure mix (%)*
Base	0%	n/a
1	50%	60 LAR:40 LSO
2	50%	30 LAR: 35 LLR: 35 LSO
3	50%	30 LAR: 70 LSO
4	35%	60 LAR:40 LSO
5	35%	30 LAR: 35 LLR: 35 LSO
6	35%	30 LAR: 70 LSO
7	20%	60 LAR:40 LSO
8	20%	30 LAR: 35 LLR: 35 LSO
9	20%	30 LAR: 70 LSO

*The tenures are as follows:

- LAR - London Affordable Rent
- LLR - London Living Rent
- LSO - London Shared Ownership
- DMR - Discount Market Rent
- DMR tested in value bands A and B instead of LSO

11.1.5 In the same approach as the standard residential schemes, where 50% affordable housing was shown to be viable, then the 35% and 20% affordable housing test were not undertaken as logically these will also be viable. Where the 'base' position with 0% affordable housing was

shown to be unviable, then the testing with any affordable housing was not undertaken as logically these will also be unviable.

11.1.6 Mixed-use build to rent schemes were not part of the testing.

11.2 Results of the testing

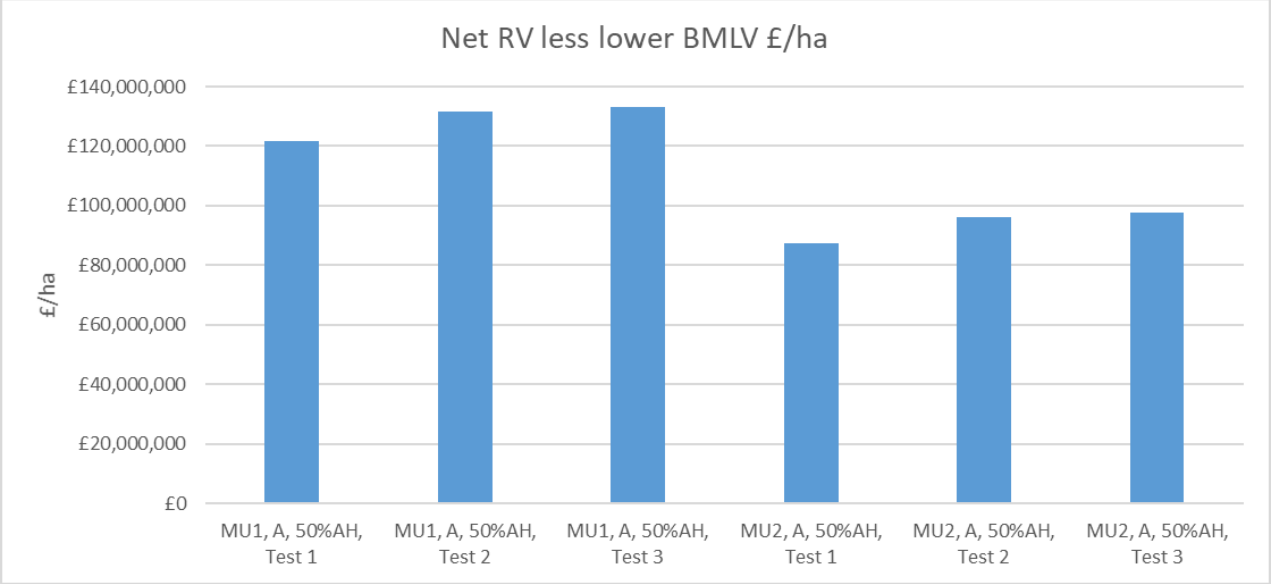
Value Band A

11.2.1 Both MU1 and MU2 were tested in value band A.

11.2.2 Commentary:

- Both MU1 and MU2 are viable with 50% affordable housing in value band A.
- The smaller MU1 scheme is more viable on a £/ha basis than the larger MU2 scheme, which in part reflects the costs of the longer time taken to develop MU2 (noting that this testing is on current day basis rather than allowing for changes over time in values and costs).

Figure 11.1: Mixed Use Viability in value band A net £/ha against the lower benchmark land value



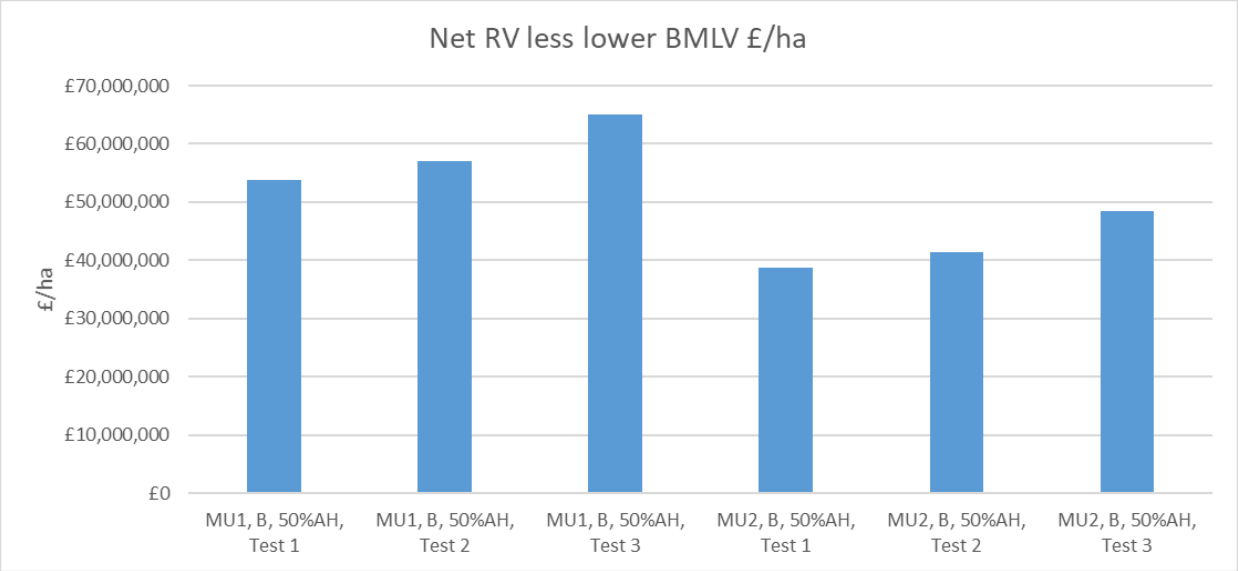
Value Band B

11.2.3 Both MU1 and MU2 were tested in value band B.

11.2.4 Commentary:

- Both MU1 and MU2 are viable with 50% affordable housing in value band B.
- Again, the smaller MU1 scheme is more viable on a £/ha basis than the larger MU2 scheme.

Figure 11.2: Mixed Use Viability in value band B net £/ha against the lower benchmark land value



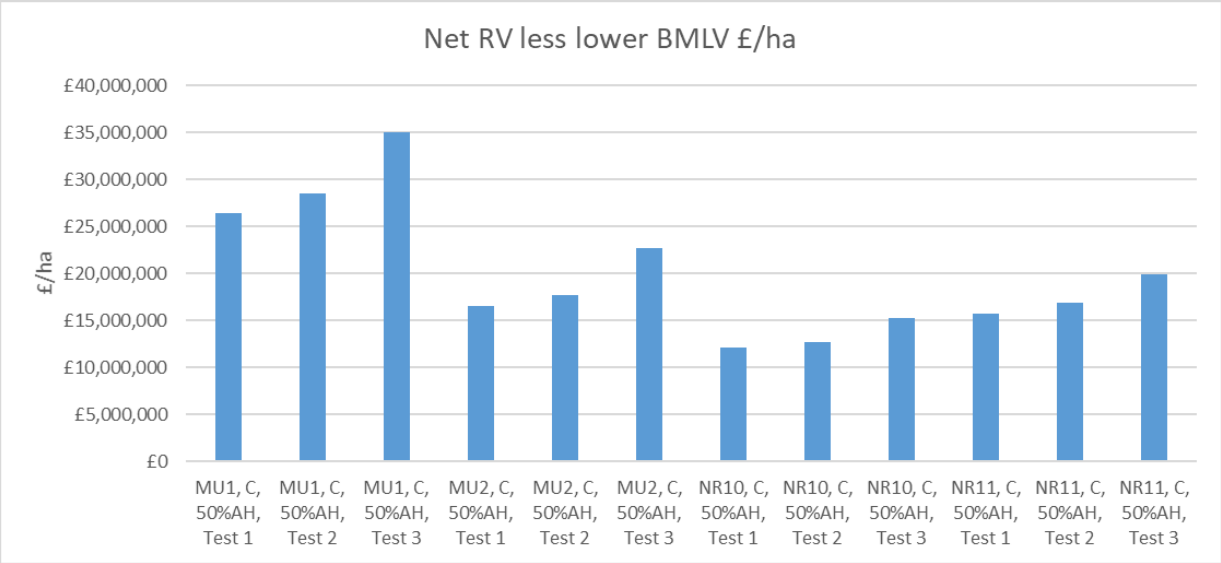
Value Band C

11.2.5 NR10 and NR11 as well as MU1 and MU2 were tested in value band C.

11.2.6 Commentary:

- All of the mixed-use schemes are viable with 50% affordable housing in value band C;
- The MU schemes are more viable than the industrial intensification NR schemes. This is likely to reflect the wider development characteristics as well as the higher values associated with the retail/leisure and office components in the MU schemes compared to the 'B' uses in the NR schemes;
- The smaller MU1 scheme is more viable on a £/ha basis than the larger MU2 scheme;
- The residential and B1c workshop NR11 scheme is more viable than the residential and B8 NR10 scheme. This will in part reflect the additional costs associated with multi-storey B8 uses in NR10.

Figure 11.3: Mixed-use Viability in value band C net £/ha against the lower benchmark land value



Value Band D

11.2.7 MU1, MU2, NR10 and NR11 were tested in value band D.

11.2.8 Commentary:

- Both MU1 and NR11 are viable and able to support 50% affordable housing in value band D;
- MU2 is also able to support 50% affordable housing but only with some affordable housing tenure mixes;
- NR10 is not able to support 50% affordable housing (although less costly forms of intensification may be viable in value band D);
- Viability could be improved across the non-residential elements of NR10 and NR11, by locating in high (industrial/logistics) demand areas within the bands or less costly forms of development such as reduced storey heights compared with the four storey scenario tested.

11.2.9 NR 10 is tested against 35% and 20% affordable housing.

- NR10 is able to support 35% affordable housing in value band D, although this will depend on the affordable housing tenure;
- NR10 is able to support 20% affordable housing under all the tenure mixes tested;

Figure 11.4: Mixed-use Viability in value band D net £/ha against the lower benchmark land value – 50% Affordable Housing

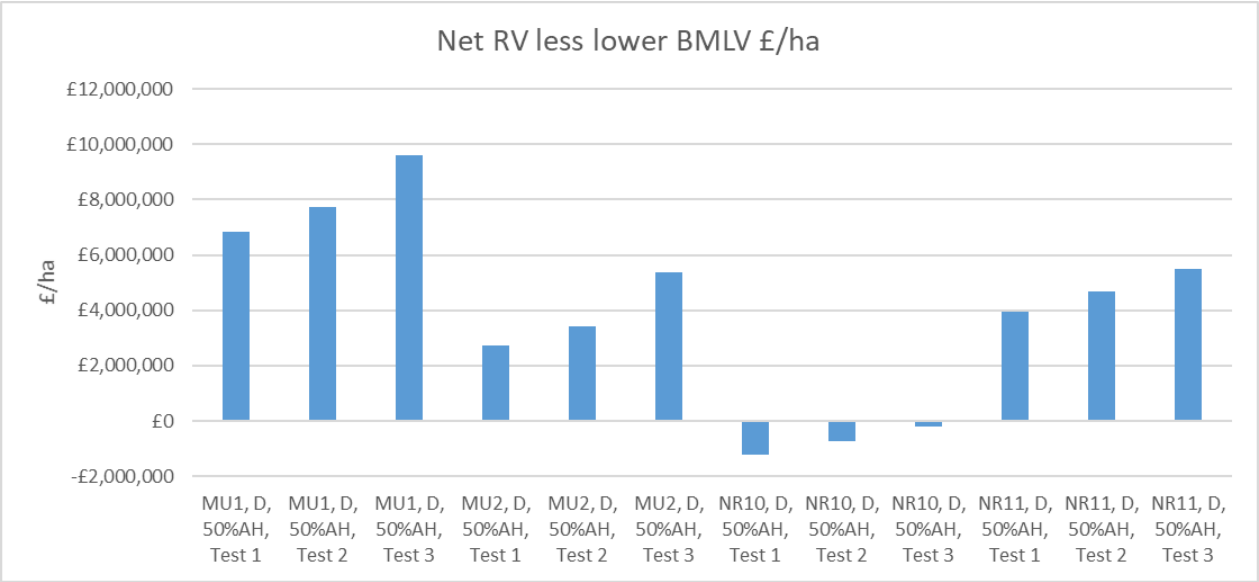
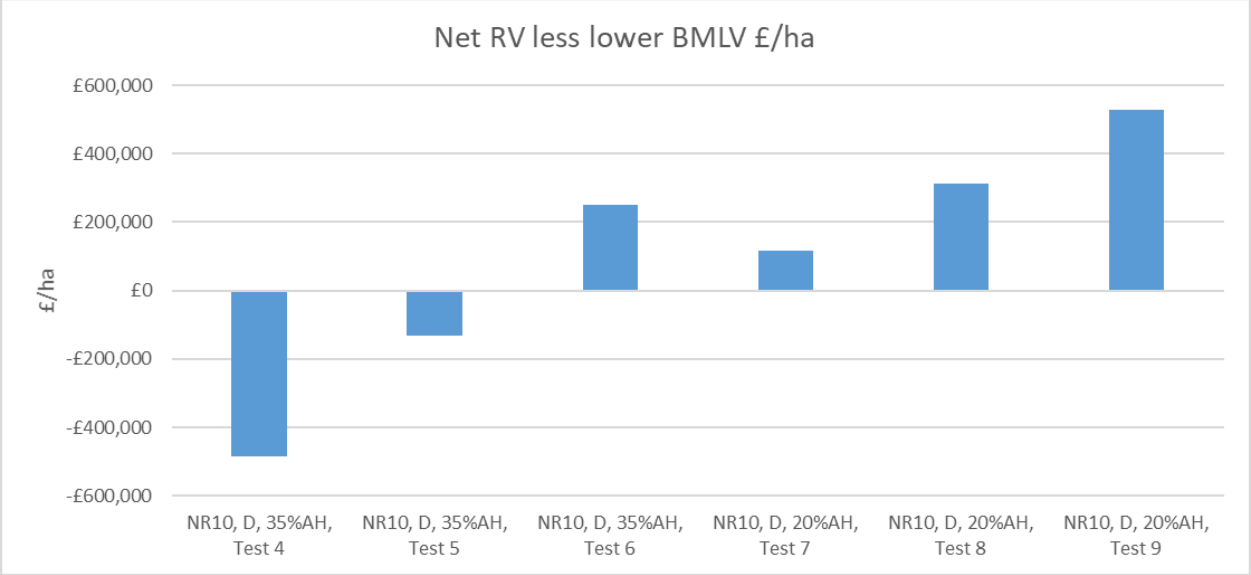


Figure 11.5: NR10 Viability in value band D net £/ha against the lower benchmark land value – 35% and 20% Affordable Housing



Value Band E

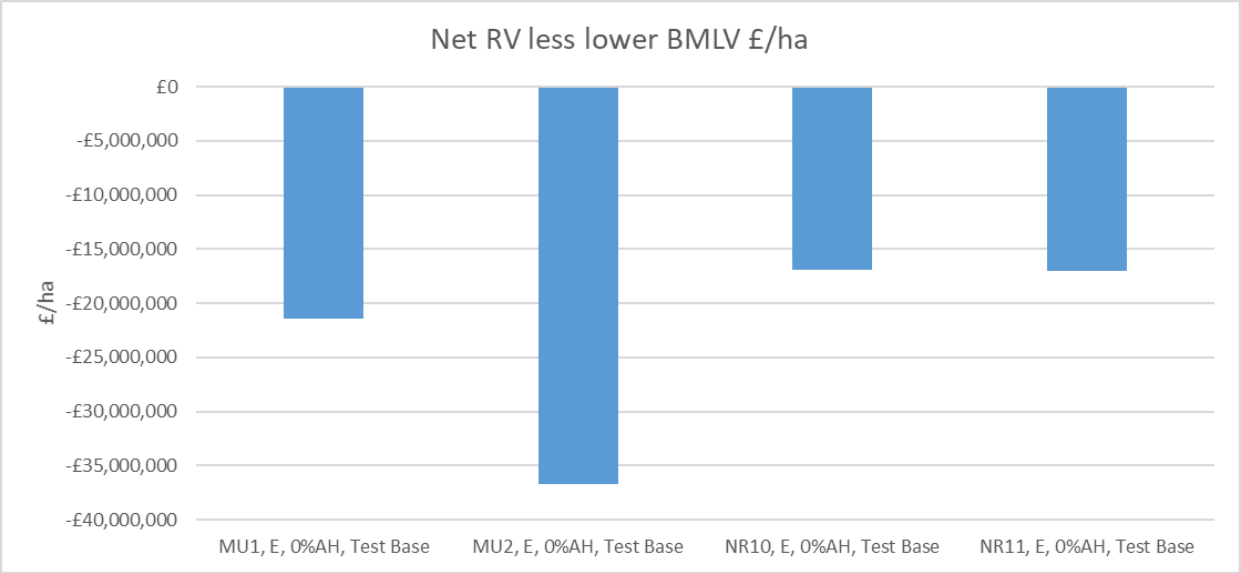
11.2.10 MU1, MU2, NR10 and NR11 were tested in value band E.

11.2.11 Commentary:

- None of the mixed schemes were viable in value band E, even with no affordable housing;
- This follows the pattern of similar standard residential developments in the lower value area (where only lower density residential schemes are viable);

- As referred to above the testing is based on current day values and costs without applying forecasted changes over these longer-term schemes. The results are also in part indicative of the higher density typologies with taller buildings tested across the value bands, whereas variation in built form will occur from site to site, appropriate to the location.
- It is also noted that value bands assumed are broad in their coverage and there will be locations within lower value bands which have higher value characteristics, for example, near transport hubs and town centres and which may benefit from major planned transport investment (and other infrastructure) such as the Elizabeth Line.

Figure 11.6: Mixed Use Viability in value band E net £/ha against the lower benchmark land value



11.3 Sensitivity testing

11.3.1 Sensitivity testing was undertaken to explore the impact of additional abnormal costs of £183/sq m costs as well as affordable housing grant of £28,000 per affordable dwelling.

Additional abnormal costs

11.3.2 In value bands A, B and C the additional costs have an impact, but the case studies tested remain able to provide 50% affordable housing against the lower benchmark land value.

11.3.3 In value band D, the additional costs also have an impact, but MU1 and NR11 remain able to provide 50% affordable housing against the lower benchmark land value. MU2 is still able to provide 50% affordable housing depending on the tenure mix for the affordable housing.

11.3.4 Without the additional costs NR10 was able to provide 20% affordable housing, and up to 35% depending on the tenure mix in value band D. However, with the additional costs the testing indicates that this is not possible.

11.3.5 None of the schemes were viable with no affordable housing in value band E, and the additional costs do not change this.

Affordable housing grant

11.3.6 The original testing in value band D showed that NR10 was not able to provide 50% affordable housing, although it was able to provide 35% subject to tenure split. However, with affordable housing grant 50% affordable housing can provided for all tenure mixes.

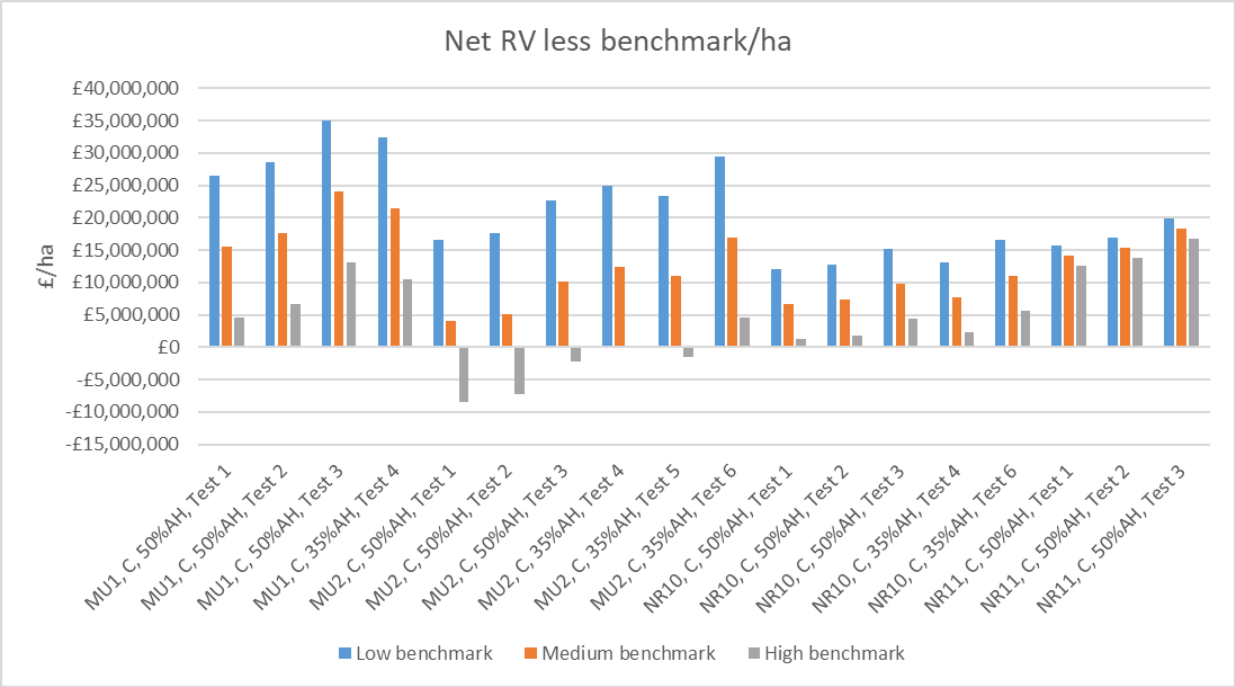
11.4 Medium and Higher Benchmark Land Values

11.4.1 The analysis above focusses on the residual value of the case studies in relation to the lower benchmark land values. However, the testing includes comparison to higher benchmarks:

- In value bands A and B with 50% affordable housing, MU1 exceeds the medium and higher land value benchmarks, while MU2 exceeds the medium benchmark. With 35% affordable housing the highest benchmarks are exceeded in value bands A and B.
- In value band C, MU2 meets the medium benchmark but not the highest benchmark with 50% affordable housing; but NR10 and NR11 meet all of the benchmarks.
- In value band D, with 50% affordable housing MU1 and NR11 meet the medium benchmark and NR11 meets the higher benchmark. MU2 and NR10 only meet the lower benchmark with 50% affordable, although with 35% affordable NR10 also meets the higher benchmark.

11.4.2 Figure 11.7 illustrates the viability in value band C against the different benchmarks.

Figure 11.7: Mixed Use Viability in value band C net £/ha against the range of benchmark land values at 50% and 35% affordable



11.5 Summary

11.5.1 Testing the residential-led MU1 and MU2 schemes demonstrate similar viability to the equivalent standard residential schemes, with relatively strong viability in the higher value areas and then a range of viability in D and poor viability in E. Only schemes with lower density and/ or a different built form to these mixed schemes are likely to be viable in E based on current day values and costs.

11.5.2 The two MU schemes are more viable than the NR10 and NR11 industrial intensification schemes. The larger MU2 scheme is less viable than the smaller MU1 scheme, reflecting the costs of the longer development period.

11.5.3 Sensitivity testing with additional costs has some impact for the marginal case studies in the lower value areas. The inclusion of affordable housing grant has a stronger positive effect on these marginal case studies.

11.5.4 In the higher value areas, the RV meets medium and higher benchmark land values. However, in lower value areas, the RV is less likely to meet the higher benchmarks, and more intermediate housing increases viability.

11.5.5 The overall conclusion is that despite the costs involved in intensifying some industrial development, in most areas the policy approach is viable. In the lower value areas affordable housing grant will increase affordable housing provision, while in the lowest value areas this type of development will struggle even with no affordable housing provision (although this may alter as costs and values change over time). As with the findings in the standard residential typologies testing, it is possible that other built forms of intensification may be viable. In most

parts of London, the 35% affordable housing threshold can be supported as well as the 50% provision on public or industrial land where values are sufficient.

11.5.6 Schemes that are not capable of meeting the relevant threshold will be subject to viability testing to determine the appropriate level of affordable housing and to ensure that they are deliverable. In such cases viability would be reviewed to test whether a greater level of contribution could be provided when the scheme is completed.

12 Testing results – Non-residential schemes

12.1 Testing undertaken

12.1.1 Non-residential schemes likely to come forward under the new London Plan have been included within the viability testing. These include different sizes of office development, budget and full-service hotels and logistics/light industrial developments. Details of these can be found in Section 4 of this report. The testing splits London into the three value bands described in Section 7 (central, inner and outer), and not all the development types are tested in all value bands. A full set of results are shown in Annex K.

Table 12.1: Non-residential case studies

Ref.	Use	Floorspace (sq m) / bed	Site area (h)	Storey
NR1	Office	7,500	0.2	5
NR2	Office	30,000	0.3	20
NR3	Office	70,000	0.3	40
NR4	Hotel (budget, with 28 sq m room size)	4,200 120 beds	0.15	6
NR5	Hotel (budget, with 35 sq m room size)	3,360 120 beds	0.15	6
NR6	Hotel (full service)	3,600 80 beds	0.11	6
NR7	Logistics/light industrial	1,000	0.2	1
NR8	Logistics/light industrial	5,000	1.0	1
NR9	Logistics/light industrial	10,000	2.0	1

12.1.2 The viability testing includes allowances for affordable workspace (where relevant) as well as well as other policies including those relating to carbon reduction, disabled parking and electric vehicle charging, and allowances for demolition s106 and other development costs.

12.2 Results of the testing

Central value band

12.2.1 Eight of the non-residential case studies were tested in Value Band Central:

- NR1 Office (with 10% affordable workspace)
- NR2 Office (with 10% affordable workspace)
- NR3 Office (with 10% affordable workspace)
- NR4 Hotel budget 35sq m gross room size
- NR5 Hotel budget 28sq m gross room size
- NR6 Hotel luxury/full service
- NR7 Industrial/logistics

Table 12.2: Results - Value band Central

	Net residual value less Benchmark Land Value £/ha		
	Low	Medium	High
NR1 Office (with 10% affordable workspace)	£212,627,000	£165,727,000	£120,877,000
NR2 Office (with 10% affordable workspace)	£496,929,000	£371,929,000	£252,363,000
NR3 Office (with 10% affordable workspace)	£1,010,794,000	£719,128,000	£440,161,000
NR4 Hotel budget 35sq m gross room size	£64,790,000	£29,790,000	-£3,743,000
NR5 Hotel budget 28sq m gross room size	£78,616,000	£43,616,000	£10,083,000
NR6 Hotel luxury/full service	£105,667,000	£64,758,016	£25,576,000
NR7 Industrial/logistics with 10% affordable workspace	£4,311,000	-£1,939,000	-£7,889,000

Commentary

- All of the tested case studies are viable across all benchmark land values, with the exception of NR4 in the high value benchmark and NR7 in the medium and highest benchmark land value;
- Whilst NR7 is less viable in the medium and highest value area it is unlikely that development would take place in such locations as it would be competing with prime office and residential sites;
- Affordable workspace has a minimal impact on viability (e.g. NR1 low benchmark the difference is 3% on the net residual value minus benchmark land value);
- The difference in the net residual value shows that even within the viable uses, there are some uses (such as offices) which are most likely to come forward as the amount available to pay for sites will be higher than other uses.

Inner value band

12.2.2 Ten of the non-residential case studies were tested in Value Band Inner:

- NR1 Office (with 10% affordable workspace)
- NR2 Office (with 10% affordable workspace)
- NR3 Office (with 10% affordable workspace)

- NR4 Hotel budget 35sq m gross room size
- NR5 Hotel budget 28sq m gross room size
- NR6 Hotel luxury/full service
- NR7 Industrial/logistics
- NR8 Industrial/logistics
- NR9 Industrial/logistics

Table 12.3: Results - Value Band Inner

	Net residual value less Benchmark Land Value £/ha		
	Low	**Medium**	**High**
NR1 Office (with 10% affordable workspace)	£102,786,000	£92,636,000	£82,436,000
NR2 Office (with 10% affordable workspace)	£234,384,000	£207,216,000	£180,018,000
NR3 Office (with 10% affordable workspace)	£396,837,000	£333,437,000	£270,037,000
NR4 Hotel budget 35sq m gross room size	-£5,527,000	-£13,127,000	-£20,727,000
NR5 Hotel budget 28sq m gross room size	£7,824,000	£224,000	-£7,376,000
NR6 Hotel luxury/full service	£62,872,000	£53,964,000	£45,055,000
NR7 Industrial/logistics with 10% affordable workspace	£6,840,000	£5,490,000	£4,140,000
NR8 Industrial/logistics with 10% affordable workspace	£6,823,000	£5,463,000	£4,103,000
NR9 Industrial/logistics with 10% affordable workspace	£5,216,000	£3,856,000	£2,496,000

Commentary

- All of the tested case studies are viable across all benchmark land values, with the exception of some of the budget hotel case studies;
- The change in gross size of budget hotel rooms from 35 sq m to 28 sq m improves viability and evidence from GLA suggests smaller budget (gross) rooms are being brought forward in these areas;

- It should also be noted that abnormal costs have been applied across all these case studies and borough CIL average – in some circumstances neither of these additional costs will apply. Also CIL is only applicable to net additional floorspace and therefore may not be applicable in all cases;
- Whilst 10% affordable workspace does lessen viability it has not led to any case studies within the inner value band being unviable.

Outer value band

12.2.3 Nine of the non-residential case studies were tested in Value Band Outer:

- NR1 Office (with 10% affordable workspace)
- NR2 Office (with 10% affordable workspace)
- NR4 Hotel budget 35sq m gross room size
- NR5 Hotel budget 28sq m gross room size
- NR6 Hotel luxury/full service
- NR7 Industrial/logistics
- NR8 Industrial/logistics
- NR9 Industrial/logistics

Table 12.4: Results - Value band Outer

	Net residual value less Benchmark Land Value £/ha		
	Low	**Medium**	**High**
NR1 Office (with 10% affordable workspace)	£13,476,000	£9,426,000	£5,326,000
NR2 Office (with 10% affordable workspace)	£15,642,000	£4,775,000	-£6,092,000
NR4 Hotel budget 35sq m gross room size	£4,865,000	£1,865,000	-£1,202,000
NR5 Hotel budget 28sq m gross room size	£17,355,000	£14,355,000	£11,288,000
NR6 Hotel luxury/full service	£76,554,000	£73,009,000	£69,463,000
NR7 Industrial/logistics with 10% affordable workspace	£2,839,000	£2,288,000	£1,738,000
NR8 Industrial/logistics with 10% affordable workspace	£2,810,000	£2,260,000	£1,720,000
NR9 Industrial/logistics with 10% affordable workspace	£1,503,000	£963,000	£418,000

12.2.4 Commentary:

- All of the tested case studies are viable across all benchmark land values, with the exception of NR2 office and NR4 budget hotel case studies;
- NR2 is a 20 storey office and is therefore less likely to come forward in outer areas;
- Abnormal costs and affordable workspace are included within these results, if these are removed then the viability will improve and potentially it will be viable with the medium benchmark land value as well as the lower. Also, affordable workspace is less likely to be required in outer areas;
- Therefore, NR2 is viable in the outer area but is reliant on a favourable set of circumstances;
- Larger (gross room) budget hotel is viable with low and medium benchmark land value but struggles with a higher benchmark – however the smaller (gross) room format works across all the benchmarks;
- Therefore, budget hotels are viable with certain formats for most land types and will improve further if abnormal costs and CIL is reduced.

12.3 Summary

12.3.1 Non-residential development of the types tested is viable across London when costs of energy, affordable workspace etc. are included, as well as the other standard development costs. The inclusion of affordable workspace makes little difference to viability in most cases.

12.3.2 It is clear that some non-residential uses are able to out-bid other less valuable uses for sites, and that this will vary between value areas.

12.3.3 For budget hotels the smaller room format is likely to be viable, while larger room formats will not always be viable in some parts of London.

13 Future changes in costs and values

13.1 Testing undertaken

13.1.1 The viability testing included in the earlier sections of the report is on the basis of current costs and values, in line with NPPG. However, the London Plan runs to 2041 and it is appropriate to consider what the impact of likely changes in values and costs would be. Chapter 3 earlier in the report sets out some potential annual changes that may be applied to viability testing:

- Market Sales Revenue (including shared ownership) 4.0% per annum
- Market Build to Rent Revenue 2.5% per annum
- Commercial Revenue (Mixed Use scheme only) No increase
- Affordable Rent Revenue (LLR and LAR) 2.0% per annum
- Build and Development Costs[75] 2.5% per annum

13.1.2 The resulting residual values have been assessed against current benchmarks.

13.1.3 A selection of marginal residential case studies has been used to determine the impact of potential future changes, using the following approach:

- The case study is expected to start at the beginning of year 6 and changes during years 1 to 5 are applied to the initial values (market and affordable housing) and costs (abnormal, planning obligations and build costs);
- The same annual changes are then applied to each year of the development period.

13.1.4 The marginal case studies chosen were:

- Res8 (300 dwellings build to rent) in Value Band C and D with 50% and 35% affordable housing;
- Res11 (750 dwellings residential for sale) in Value Band C and D with 50% affordable housing;
- Res12 (750 dwellings residential build to rent) in Value Band D with 50%, 35% and 20% affordable housing;
- MU2 (1,500 dwellings for sale plus 15,000 sq m commercial) in Value Band C and D with 50% affordable housing.

13.1.5 No inflation sensitivity testing was undertaken in Value Bands A and B as viability was generally strong. In Value Band E the schemes identified above were not viable, even with no affordable housing provision so no further testing was undertaken.

13.2 Results of the testing

13.2.1 In Value Band C, Res8 with 50% affordable housing originally had a positive RV but failed to meet any of the benchmark land values. However, after applying the changes to values and costs the case study becomes viable with 50% affordable housing.

[75] inc CIL & planning obligations

13.2.2 In Value Band C, Res11 with 50% affordable housing originally met the lower benchmark only. After applying inflation to Res11 with 50% affordable housing improves the viability further.

13.2.3 In Value Band C, Res12 with 50% affordable housing, was not viable under test 1 (100% LLR). After applying the changes to values and costs the case study is now showing a positive residual under test 1 but is still not viable.

13.2.4 In Value Zone D, Res12 was unviable with 50% and 35% affordable housing, although it was able to support 20% AH affordable housing. After applying the changes to values and costs the scheme becomes more viable but still not able to support 50% or 35% affordable housing with all LLR as the affordable tenure. It is still able to support 20% against the range of land value benchmarks.

13.2.5 In Value Zone D Res8 was not able to support 35% affordable housing. However, after applying the changes to values and costs the scheme is now viable with 35% affordable housing against the lower benchmark.

13.2.6 In Value Zone D Res11 was originally not viable even with no affordable housing. However, after applying the changes to values and costs the scheme is now viable with 35% affordable housing.

13.2.7 In Value Band C with 50% AH, MU2 originally was viable and after applying inflation, the residual value was improved, and the scheme remained able to provide 50% AH.

13.2.8 Originally, MU2 was able to support 50% affordable housing in Value Band D but only with some of the affordable housing tenure mixes. The scheme was more viable after applying inflation, and was able to provide 50% affordable housing with 100% LLR.

Summary

13.2.9 It is clear that the likely future changes in values and costs will strengthen viability and that this is likely to assist in delivering affordable housing over the plan period from when values and costs across the whole development period are based on current day prices.

14 Summary and conclusions

14.1 Overview

14.1.1 The study sought to *'...provide a robust evidence base to support the new London Plan and will supplement the GLA's Strategic Housing Land Availability Assessment (SHLAA) by providing a more detailed understanding of the viability and deliverability of sites across London*.' The study then had five sub-objectives:

- examine the likely cumulative viability impact of the proposed policies and standards in the Plan (and including CIL);
- provide a broad strategic understanding of viability across London based on current prices, and projected market trends;
- test the viability and deliverability of an appropriate range of sample sites across London;
- model various scenarios in relation to planning policy requirements, grant availability and economic trends;
- draw on expert evidence relating to assumptions and inputs that impact on viability;
- viability testing is to include residential, non-residential and mixed uses.

14.1.2 The approach taken to the viability testing closely followed national guidance for area-wide viability assessments, with proportionate evidence to ensure the London Plan is underpinned with a broad understanding of viability. The residual value of a series of case studies (of residential and non-residential uses) has been compared with a set of notional land values benchmarks. While the testing undertaken reflects the main types of development likely to be found in London over the life of the Plan, given the complexities of the London market, it is acknowledged that there may be some development types that will fall outside the scope of the testing undertaken. It is recognised that different densities and types of built form may come forward informed by location-specific cost/ value assessment, and this may produce more viable schemes than the case studies in this report.

14.1.3 In accordance with Planning Practice Guidance, current costs and values have been used for the baseline testing (as at end June 2017) with land value benchmarks as representing a competitive return for a landowner. The testing has allowed for flexibility with scheme viability not tested to the margins.

14.1.4 All reasonably anticipated development costs have been taken into account, including infrastructure and other standard development costs.

14.1.5 We have identified and provided indicative costs of those policies which might be expected to impact on development viability and therefore provide a thorough review of the impact on development viability of the draft London Plan. Important in this respect are the policies for delivery of affordable housing, carbon reduction standards, housing accessibility, standards for cycle provision and mixed-use schemes. Overlaying these specific policies is the need to make best use of development land that is available and therefore the testing undertaken has focused on higher density schemes and taller buildings although not exclusively.

14.1.6 Costs and values employed in the study have been drawn from the most appropriate data available and tended to err on the side of caution (e.g. assuming CIL will be applied to all development and ignoring potential existing floorspace which would reduce the CIL payment, using defined mixes of affordable housing where policy allows for more flexibility and the

inclusion of more 'valuable' forms of affordable housing). The overall effect of this is to understate the true viability of the case studies modelled.

14.1.7 The Viability Study has tested the viability of private sector led residential development. However, it is important to note that registered providers (RPs) can play a role in affordable housing delivery across London. RP and public sector led developments typically have different viability characteristics and can benefit directly from funding arrangements and other support from the Mayor.

14.2 Results of the viability testing

Residential development

14.2.1 The draft London Plan affordable housing policy for residential development underpins the residential viability testing. The draft Plan sets out a threshold of 35% for schemes to follow a Fast Track Route where they meet other policy requirements to the satisfaction of the local authority. The required tenure split is 30% affordable rent, 30% intermediate housing and 40% to be determined by the local authority. This provides some flexibility to determine the appropriate tenure according to local market conditions and viability. The equivalent threshold for residential development on public land and industrial land is 50%.

14.2.2 In the higher value bands (with sales values tested at £12,000 for Band B and £20,000 per sq m for Band A), residual values are very strong and schemes are generally capable of providing high levels of affordable housing (generally in excess of 35%). In relation to affordable housing tenure, a greater proportion of London Affordable Rent can be supported without public subsidy.

14.2.3 Similar conclusions apply in mid-low value bands (at c£8,250 per sq m Band C and £6,250 per sq m Band D) although the picture here is more mixed and some case studies are not viable at 50% affordable housing, but many are viable at 35%.

14.2.4 However, when average values fall to £4,250 per sq m (in E, the lowest value band tested) delivering viable policy compliant development depends on the case study in question when assessed on a current day basis. In this value band it is the lower density schemes that may be able to achieve 35% affordable housing, but 50% affordable housing is not generally viable and was only achieved with case studies at the lowest density tested.

14.2.5 It will also be the case that, within the lowest value bands there may be pockets of higher values, especially in town centres and near transport hubs which are a focus for development under the draft Plan. This is particularly relevant for Opportunity Areas and Growth Corridors where new infrastructure is planned. In combination with development forms that particularly well suit the local market, such locations may support localised values and be capable of delivering higher density schemes.

14.2.6 The addition of an allowance for abnormal costs has a bigger impact on schemes in the lower value bands than those in higher value bands and may tip a scheme over into non viability. However, the addition of grant (we modeled at £28,000 per affordable unit) improves viability and can help secure more affordable housing in some cases. Away from the lowest value area (E), grant can directly impact on the amount of affordable housing achieved although the picture is mixed and varies between the type of development illustrated by the case studies (e.g. two case studies in value area D were originally tested at 20% as they were unviable at 35%, and with grant one of them is able to provide in excess of 35% while the other is not).

14.2.7 The testing of the residential schemes suggests that the policy approach of a 35% affordable housing threshold and 50% affordable housing on public or industrial land is deliverable in most parts of London. For some built forms, it may be difficult to deliver this in lower value areas, but with the right form of development it can be supported and can deliver higher levels with affordable housing grant.

14.2.8 Build to Rent can be slightly less viable than for sale although this is supported by the policy requirement for Discounted Market Rent (DMR) rather than low cost rented affordable housing. The Build to Rent case studies can generally support 35% affordable housing with a combination of London Living Rent (LLR) and DMR.

14.2.9 Other policies of the plan have also been tested including accessibility and energy standards, transport, community and green infrastructure requirements and Mayoral[76] and Borough CIL and S106. These represent modest costs as a proportion of development value and typically have limited impact on overall viability.

14.2.10 The viability testing described above, and in line with national guidance, is on the basis of current costs and values. However, the London Plan runs to 2041 and consideration was also given to the impact of forecast changes in values and costs. The assumptions about future change were based on a range of commentator views and it is readily acknowledged that the forecasts used are no more than 'informed opinion'. But on the basis of the forecasts, it is clear that future changes in values and costs will strengthen viability and that this is likely to assist in delivering development that meets the policies of the plan from scheme types that may currently be marginal and/or require some form of public subsidy to achieve this.

Other residential development types

14.2.11 This group of uses includes specialist provision for the elderly and others needing sheltered or extra care facilities and for care homes. It also includes student accommodation and another relatively new form of provision – Shared Living. Generally, all these types of uses are viable and able to provide affordable housing (when required to do so). However, there are considerable differences in viability between the uses. The policy requirements for student accommodation and Shared Living can be met across the value areas. Sheltered housing is able to provide 50% affordable housing in Value Band C, but not in D or E. Extra care, as was tested for this study, was viable with 35% affordable housing in C but not in D or E.

Mixed use schemes

14.2.12 The residential-led mixed use schemes demonstrate similar viability to the equivalent standard residential schemes with little evidence of any cross subsidy from high value non-residential uses. There is relatively strong viability in the higher and mid value bands but reduced viability in lower value bands. The schemes tested are higher density with taller buildings and as noted above these may still come forward in specific locations with higher values.

14.2.13 Despite the costs involved in intensifying some industrial development, in most areas the policy approach of co-location with residential is viable. In the lower value bands affordable housing grant will increase affordable housing provision, while in the lowest value band mixed use developments were marginal even with no affordable housing provision. However, this may alter as costs and values change over time and it is possible that other built forms of intensification may be viable. In most parts of London, the 35% affordable housing threshold can be supported as well as the 50% provision on public or industrial land.

[76] MCIL2

Non-residential development

14.2.14 Non-residential development of the types tested is viable in the Central Activities Zone and town centres in London where this would be expected to come forward. This includes the costs of policies including those relating to energy standards, affordable workspace, CIL and other relevant requirements. The inclusion of affordable workspace makes little difference to viability in most cases.

14.2.15 It is clear that some non-residential uses are able to out-bid other less valuable uses for sites, and that this will vary between value bands.

14.2.16 Most budget and luxury hotel case study schemes were viable with some exceptions in line with market trends. For budget hotels, where a larger room format is not viable, with a smaller room format, the scheme becomes viable.

14.2.17 In contrast with residential developments tested, we did not consider the impact of any future changes in costs and values. As set out in Chapter 3, commentators forecast that the industrial sector will deliver positive growth over the next five years (at least on a countrywide basis). The implication for this study is that, going forward, the industrial schemes modelled (including those in mixed residential schemes) would become more viable.

14.3 Delivery of the Plan

14.3.1 Given the diversity of the London market, it can be no surprise that development viability varies across the city. The underlying message of the viability testing is that most development types can meet the policy requirements of the draft London Plan. The Viability Study also highlights that the viability of individual schemes which face viability challenges, and are genuinely unable to meet the full range of policy requirements, may need to be considered. The draft Plan allows for this for residential schemes through a Viability Tested Route for applications where there are clear circumstances preventing delivery.

14.3.2 Forecasts of future values and build costs have been tested which indicate the potential for improvements in viability across most development types within the plan period. This coupled with major infrastructure investment e.g. the Elizabeth Line, the London Overground Extension to Barking Riverside and Silvertown Tunnel and/or other forms of substantial public investment e.g. the Housing Infrastructure Fund, could strengthen viability significantly even in the lowest value bands.

14.3.3 As required by the NPPF it can be concluded that the standards and policies of the plan should not put its implementation at serious risk and should facilitate development throughout the economic cycle. The GLA monitors the policies of the London Plan through the Annual Monitoring Report process and will keep the policies of the plan under review.