

Greater London Authority Housing Standards Review: VIABILITY ASSESSMENT

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GREATER LONDON AUTHORITY

Housing Standards Review

Viability Assessment

Final Report

May 2015

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Executive Summary

This viability study was commissioned by the GLA to establish the impact of the adoption of the Government's new national housing standards within London Plan policy on the viability of development in London.

The broad findings of the study are;

- at borough-wide average house prices and build costs, development taking into account the impact of the proposed housing standards and zero carbon achieved land values in excess of benchmark in 84 % of cases.
- At the worst case sensitivity testing, allowing for a 0.5% fall in values and an 8% increase in costs this fell to 72% of cases.

The case studies indicate that residential development in some form will be viable in all boroughs. The case study boroughs are the same as those used in the Strategic Housing Land Availability Assessment Viability study¹, as these provide an understanding of viability issues in boroughs which have significant housing capacity but have also been identified as areas where viability may be an issue. It should be noted that the study focussed on worst case scenarios regarding future house prices and costs because they pose a potential threat to viability and delivery of the London Plan, whereas rising house prices should improve these.

As well as testing overall viability, the impact on build costs that the standards represent was assessed in financial and percentage terms. The outcome is as follows:

- a. There is no measurable cost impact from the nationally prescribed space standards as these are no more onerous than existing London Plan Requirements
- b. The estimated cost impact of the optional access requirements represents circa an additional 2-2.4% of base build cost for small low rise developments which is where the requirement for step free access to all homes is an additional requirement to current London Plan standards..

¹ David Lock Associates, Three Dragons, Traderisks, 2014. *Greater London Authority 2013 SHLAA Viability Assessment*

- c. There is no measurable cost impact from the Building Regulation optional requirement for the provision of Wheelchair User Housing M4(3) as this is no more onerous than existing London Plan requirements
- d. There is no measurable cost impact from the optional requirement for water usage of 110 litres per head per day as this is no more onerous than existing London Plan standards
- e. The estimated cost impact of moving to zero carbon homes in 2016 represents circa an additional 1-1.4% of base build cost.

In testing the viability impact of the standards, no account has been taken of the potential for cost savings as a result of reduced process costs and increased certainty of design requirements. This was however tested by E C Harris on behalf of DCLG² whose findings for the overall standards including process costs (but excluding the move to zero carbon homes) indicated a potential saving of between £3,625 and £5,426 per dwelling³. Assuming an average dwelling size of 75m², the estimated cost saving per m² would be in the order of £48 - £72. **This would negate the additional costs identified for standard M4(2) above.**

It is however recognised that specific sites that come forward for development in future could be subject to individual circumstances that impact negatively on viability and deliverability, such as adverse ground conditions, or specific existing uses. The potential range and nature of such eventualities cannot be tested by a study of this nature. There will therefore remain a need for individual viability assessment and appropriate flexibility where such circumstances can be evidenced.

The overall outcomes of the viability testing set out above indicate that the introduction of the new Housing Standards, and the move to zero carbon homes in 2016, do not represent a significant determinant in the viability and the deliverability of housing development in London.

² Department for Communities and Local Government Housing Standards Review Cost Impacts
September 2014 E C Harris

³ Net of savings indicated for energy as the EC Harris report was not testing the move to zero carbon homes

1.0 PURPOSE OF THE STUDY AND REPORT STRUCTURE

- 1.1 This viability study was commissioned by the GLA to establish the impact of the adoption of the Government's new national housing standards within London Plan policy on the viability of development in London
- 1.2 This viability assessment provides essential information about the capacity of London boroughs to incorporate the proposed housing standards in new housing developments. It has informed the minor alterations to the London Plan (MALP). This study builds on the work done for the SHLAA viability study completed in April 2014.
- 1.3 Specifically this viability study provides:
- an overview of the potential impact of the standards on the current housing market in London, identifying those areas which are most vulnerable in terms of viability, with some understanding of expected future trends;
 - a housing standards viability assessment which tests a set of detailed viability assessments for a number of sites in areas that are considered more vulnerable in terms of viability, but which are known from the SHLAA work to have significant potential housing capacity.
- 1.4 This has been achieved in two ways; the first part of this study viability tests a typical notional 1 ha site/tile in all London Boroughs, the second study looks in more detail at a cross section of indicative scheme types, based on sites in the SHLAA and applying these to over 40 opportunity site locations identified from the SHLAA in 8 boroughs. The case study boroughs used are the same as those used for the SHLAA viability study. These boroughs were chosen as they have significant capacity for additional housing but were identified as identified areas that may have viability issues. This approach allows a broad understanding of the impacts with more detailed analysis in areas that may be more vulnerable to changes in development costs.
- 1.5 All sites were viability appraised using as current data as was available, typically from 4th Quarter 2014. The assessments were carried out using the GLA viability toolkit 2014 version. However data on build costs, wider development costs, house prices, affordable rents, and carbon reduction costs were based on information provided and assessed specifically for this study by David Lock Associates, Gardiner and Theobald and Hoare Lea.
- 1.6 Principal assumptions underpinning the analysis were tested via two stakeholder surveys undertaken during February/March 2015, together with specific consultation meetings with the Home Builders Federation and the National Housing Federation. We are extremely grateful for their input and for that of participants in the surveys.

- 1.7 In terms of report structure; Chapter 2 sets out the policy context for this study, Chapter 3 summarises the methodology adopted for the viability appraisal, Chapter 4 reports on results for the 1 ha tile, looking across all London Boroughs. Chapter 5 summarises findings for the case studies, and Chapter 6 sets out the conclusion drawn from the study. Further details of key assumptions and outputs are provided in the Appendices (these are available in a separate document).

2.0 POLICY CONTEXT

National Housing Standards

- 2.1 In August 2013 the Government consulted on its intention to introduce national housing standards⁴ to replace existing standards used by local authorities across England. The aim was to reduce the administrative burden on new housing developments by simplifying and rationalising the large number of standards that local authorities apply to new homes. In September 2014, the Government issued for further consultation the technical matters related to the review.
- 2.2 Through the Deregulation Bill, which was given Royal Assent on 26 March 2015, the Government has made amendments to the Building Act 1984 to enable building regulations to set 'optional requirements' in relation to access and water above the basic minimum set out in the Building Regulations 2010. In terms of access, the Government has introduced a three tier standard for accessibility in Part M (access to and use of buildings) of Schedule 1 of the Building Regulations. There is a mandatory baseline building regulation, which sets a minimum requirement M4(1) – visitable dwellings and two optional requirements, M4(2) – accessible and adaptable dwellings and M4(3) – wheelchair user dwellings⁵. For water efficiency, in addition to the mandatory building regulation of 125 litres per person per day, the Government has introduced an optional requirement of 110 litres per person per day. Furthermore, the Government has also introduced an optional national standard for space, although the standards for space are not part of the amendments to building regulations.
- 2.3 In the Bill, the Government has also introduced a mandatory security building regulation requirement (related to locks) and has updated its mandatory building regulation on solid waste storage requirements (bin storage).
- 2.4 These changes enable the new standards to be enforced through building regulations with the optional requirements applied through planning policy by way of condition attached to planning consents
- 2.5 In addition, the Written Ministerial Statement, published on the 25th of March sets out the Government's new national planning policy on the setting of standards. In this Statement, the Government has also set out transitional arrangements until such time

⁴ DCLG, 2013. *Housing Standards Review: Consultation*

⁵www.gov.uk/government/uploads/system/uploads/attachment_data/file/354091/02_140731_HSR_Supporting_Doc1_Access.pdf

as local planning authorities are able to review their local plans. The transitional arrangements state that in terms of the optional housing standards, a local planning authority's equivalent standards will be considered robust where justified with sound evidence. Local authorities can publish their own statements setting out how the national standards will replace their existing standards.

- 2.6 Alongside these amendments to building regulations, the Deregulation Act introduced the provision to amend Section 1(c) of the Planning and Energy Act 2008 from the implementation of Zero Carbon in 2016. The Planning and Energy Act enables local authorities to set energy policies requiring development in their area to comply with energy efficiency standards that exceed the energy requirements of building regulations. The Government indicated that they would expect local planning authorities to take their proposed requirements for zero carbon homes into consideration when setting energy performance standards in the run up to 2016. The minimum onsite energy performance requirement for zero carbon homes will be broadly equivalent to the Code for Sustainable Homes Level 4⁶, with developers having various options to meet the remaining carbon reductions, including further investment in onsite energy performance and low carbon technologies, or offset payments. Code 4 is broadly equivalent to a 25 per cent improvement on Part L 2010. London Plan policy 5.2 seeks a 40 per cent improvement on Part L 2010. However as with the Government's proposed zero carbon homes standard, this allows for offsite investment if required.
- 2.7 The Ministerial Statement also confirmed that there will be a small site exemption to this Zero Carbon Homes policy applying to housing sites of 10 units or fewer⁷.
- 2.8 The Ministerial Statement makes clear that the intention of the housing standards is to ensure that new homes are high quality, accessible and sustainable. The optional new technical standards should only be required through any new Local Plan policies if they address a clearly evidenced need and where their impact on viability has been considered⁸. This report analyses the first of these considerations, relating to need, with the other studies in this commission considering the viability aspect.

⁶ DCLG, *Planning Update March 2015*.

⁷ *ibid*

⁸ *ibid*.

National Planning Policy Framework, 2012

- 2.9 In assessing the need for the proposed national optional housing standards, authorities must be able to satisfy the statutory requirements of the National Planning Policy Framework (NPPF, 2012). The NPPF requires local planning authorities to ensure that *“the Local Plan is based on adequate, up-to-date and relevant evidence about the economic, social and environmental characteristics and prospects of the area”*. This proportionate evidence base must also *“take full account of relevant market and economic signals”* (NPPF, para 158).
- 2.10 The NPPF also sets out the requirements for local planning authorities to *“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...Evidence supporting the assessment should be proportionate, using only appropriate available evidence”* (NPPF, para 174).

National Planning Practice Guidance

- 2.11 The NPPG includes details on the application of the Optional Technical Standards, stating that:

“Local planning authorities have the option to set additional technical requirements exceeding the minimum standards required by Building Regulations in respect of access and water, and an optional nationally described space standard. Local planning authorities will need to gather evidence to determine whether there is a need for additional standards in their area, and justify setting appropriate policies in their Local Plans.”⁹ [Author’s emphasis]

And:

“Local planning authorities should consider the impact of using these standards as part of their Local Plan viability assessment.”

The National Planning Practice Guidance (NPPG) defines need in relation to housing and economic development to be *“based on quantitative assessments, but also on an understanding of the qualitative requirements of each market segment...Assessing development needs should be proportionate and does not require local councils to*

⁹ Department for Communities and Local Government. *National Planning Practice Guidance, Housing – Optional Technical Standards*, para 002, reference ID 56-002-20150327

*consider purely hypothetical future scenarios, only future scenarios that could be reasonably expected to occur*¹⁰.

Defining viability

- 2.12 The NPPF defines viability in terms of providing, “*competitive returns to a willing land owner and willing developer to enable the development to be deliverable.*” (para 173). This approach is supported by the NPPG. In assessing viability, it is important that all requirements of a plan (including affordable housing and infrastructure requirements) are taken into account.
- 2.13 A further definition of viability is found in “Viability Testing Local Plans - Advice for planning practitioners”¹¹. The Foreword to the Advice for planning practitioners includes support from DCLG, the LGA, the HBF, PINS and POS¹². The Advice’s definition of viability is set out below and explains how the definition applies for plan making purposes (page 14).

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

At Local Plan level, viability is very closely linked to the concept of deliverability. In the case of housing, a Local Plan can be said to be deliverable if sufficient sites are viable – as defined in the previous paragraph – to deliver the plan’s housing requirements over the plan period.

¹⁰ Department for Communities and Local Government. *National Planning Practice Guidance*, para 004, reference ID 2a-004-20140306

¹¹ 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.

¹² Acronyms for the following organisations - Department of Communities and Local Government, LGA Environment and Housing Board, Home Builders Federation, Planning Inspectorate, Planning Officers Society

Scale of the evidence required

2.14 The NPPG notes that the scale of evidence required for testing the viability of plans should be proportionate and that:

“Assessing the viability of plans does not require individual testing of every site or assurance that individual sites are viable; site typologies may be used to determine viability at policy level. Assessment of samples of sites may be helpful to support evidence and more detailed assessment may be necessary for particular areas or key sites on which the delivery of the plan relies”¹³.

2.15 The testing approach adopted for the assessment of the viability of the housing standards is consistent with this guidance. The method adopted is described in detail in the next section.

Benchmark land values

2.16 A key point in assessing viability is the establishment of a benchmark land value. The NPPG states that

“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.¹⁴*

We have taken these points into account in our approach to this study.

2.17 Given the similarity between the proposed standards and those already applied in London, the impact on viability in this case is expected to be minimal. However, it is also worth bearing in mind that to some extent all policy requirements are expected to have some impact on land values to a differing extent in each case. For example, the

¹³ Department for Communities and Local Government. *National Planning Practice Guidance*, para 006, reference ID 10-006-20140306

¹⁴ Department for Communities and Local Government. *National Planning Practice Guidance*, para 014, reference ID 10-014-20140306

examination for the London-wide CIL, considered the issue of what is an appropriate benchmark land value. The Inspector's report comments that:

*".....the price paid for development land may be reduced [so that CIL may be accommodated]. 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. (para 32 – emphasis added).*

London Policy Context

Current London Plan

- 2.18 Cross tenure space standards have been embedded in policy in London since the publication of the 2011 London Plan and are retained in policy in the recently adopted 2015 London Plan¹⁵. The standards were introduced in London to provide guidance on house sizes for all new residential development. The principal intention was to *"to encourage provision of enough space in dwellings to ensure homes can be flexibly used by a range of residents"*¹⁶. These standards were subject to a cost and delivery impact assessment¹⁷ and were found sound at Examination in Public in 2010¹⁸. They were also subject to viability testing as part of the 2014 Strategic Housing Land Availability Assessment viability study¹⁹.
- 2.19 The space standards in the 2015 London Plan have, therefore, been subject to extensive previous independent examination and found to be sound and viable. The proposed minor alterations to the London Plan provide an appropriate method of incorporating the optional national standards, which are broadly consistent with current GLA standards. It would bring the two in line with each other and ensures that the need for space standards continues to be a central policy theme.

¹⁵ Space standards were introduced for affordable housing and development on GLA owned land in 2010 through the London Housing Design Guide.

¹⁶ Greater London Authority, 2010. *Interim London Housing Design Guide*, pp. 7

¹⁷ GVA 2010 London Housing Design Guide: Cost and Delivery Impact Assessment. HCA, LDA, GLA.

¹⁸ Planning inspectorate 2010. Draft replacement London Plan Report of the Panel March 2010.

¹⁹ Three Dragons, David Lock Associates, Trade Risks. 2013 GLA Strategic Housing Land Availability Assessment. 2014 GLA

Draft Minor Alterations to the London Plan

- 2.20 The Draft Minor Alterations to the London Plan bring London Plan policy relating to:
- Optional **access** requirements M4(2) and M4(3)
 - Optional requirements for **water efficiency**
 - Nationally described **space standards**
 - **Energy standards**
 - **Carbon dioxide reduction targets**
- 2.21 The principal changes are summarised below.
- 2.22 The London Plan space standards set out at Table 3.3, secured by Policy 3.5, are amended where required to correspond with the Nationally Described Space Standards. However, the MALP strongly encourages a ceiling height of at least 2.5m, whereas the Government's nationally described space standards sets this at 2.3m.
- 2.23 In terms of access, the current requirement for all new housing to be Lifetime Homes compliant is superseded with a requirement in Policy 3.8 for 90 per cent of new housing to be 'accessible and adaptable' dwellings, reflecting the optional Building Regulations access requirements under M4(2). The requirement for 10 per cent wheelchair dwellings has been updated to reflect Building Regulation M4(3) 'wheelchair user dwellings'.
- 2.24 The London Plan Policy 5.15 water consumption target of 105 litres or less per head per day is retained. However, a footnote and supporting text is added to explain that this target excludes the allowance for 5 litres or less external water consumption. This brings the policy in line with the optional requirement of 110 litres per head per day.
- 2.25 The London Plan Policy 5.2 targets relating to minimising carbon dioxide emissions are retained and they continue to seek a 'stepped' approach towards carbon zero in residential buildings in 2016. The target has been recalibrated and expressed in terms of Part L 2013 Building Regulation. In the period 2014-2016 it requires a 35 per cent minimum improvement on 2013 Building Regulations.
- 2.26 The government has introduced a new mandatory building regulation for security standards. This is based on the British Standard PAS 24. The London Plan includes policy 7.3 on Designing out Crime, which promotes a number of security measures, including ensuring that 'places, buildings and structures should incorporate appropriately designed security features'. In addition, the supporting text of the policy promotes the adherence to secured by design. Therefore, it has been assumed that schemes in London will already meet the requirements of this standard.

- 2.27 This commission seeks to justify the proposed London policy amendments in demonstrating the need for, and viability of, the standards; this report focuses on Viability.

3.0 METHODOLOGY

Building on the existing evidence base

- 3.1 This viability assessment is part of an ongoing process of viability assessment and builds on the work that has gone before. In particular it draws its overall methodology and testing approach from the SHLAA Viability Study²⁰ completed in April 2014.
- 3.2 Reference has also been had to the Department of Communities and Local Government Housing Standards Review Evidence Report: Cost benefit analysis August 2014 carried out by Adroit Economics, and in particular the Cost Impacts studies of June 2013 and September 2014 carried out as part of the wider study by EC Harris²¹. These reports indicated that the costs of implementing the proposed standards, compared to the costs of implementing the current standards would generate an overall saving, as summarised below:

	Current Standards		Proposed Standards	
	Standard	Range of cost / dwelling	Standard	Range of cost / dwelling
Security	Secured by Design	£299 to £352	Security	£40 to £107
Energy	Code for sustainable homes	£0 to £31,435	Building regulations	£0
	Renewable energy	£1,027 to £4,726		
Access	Lifetime homes*	£1,082 to £1,100*	Category 2 access*	£520 to £940*
	Wheelchair housing standards*	£10,552 to £25,282	Category 3 access	£7,764 to £23,052
Water	Water efficiency	£0 - £2,697	Single standard (110 ltrs / day)	£0 - £9
Process costs**	£16 - £159		£0.4 - £57	

* figures exclude costs of additional space associated with requirements of the access standards – see later sections of this report for costs in this respect.

** process costs relate to general needs dwellings, additional costs are incurred for homes for wheelchair users

Source DCLG Housing Standards evidence review August 2014 Adroit Economics and EC Harris

- 3.3 No such savings have been taken into account in this viability assessment, enabling the outcomes to be compared in cost terms and the overall cost impact to be considered.

²⁰ GLA SHLAA Viability Study 2013 Three Dragons, David Lock Associates and TradeRisk Ltd completed April 2014

²¹ DCLG Housing Standards Review September 2014

- 3.4 This viability study considered the impact of the nationally prescribed space standards, the Building Regulation optional access requirements M4(2) and the move to zero carbon homes (in addition to the retention of the current energy standards). It does not seek to quantify any impact from the optional requirements for water efficiency, as this is essentially the same as the current London Plan standard, or the security standards, as this simply standardises the approach to be adopted to comply with existing British Standards.

Market consultation

- 3.5 Before embarking on the viability analysis and testing of the impact of the standards, key players in the housing market were consulted via targeted questionnaire surveys sent to specific individuals by email. Two surveys were conducted, each over a 3 week period, with reminders after the first and second weeks of the process. One survey was aimed at residential property agents and one at the residential development market. Full details of the surveys and those targeted are provided at Appendix 1.
- 3.6 The aim of these surveys was to validate and inform the approach and assumptions being adopted for the viability assessment, and to identify and understand the concerns of practitioners involved in the delivery of housing in London regarding the standards.
- 3.7 The property agents' survey targeted 10 top London agency firms associated with residential disposals and development, plus the Valuation Office Agency. No responses were received from this group.
- 3.8 The developer/house builder survey targeted a total of 86 potential respondents including some 26 developers, 25 housing associations, 11 local authorities, and a range of educational and other relevant organisations including trade associations such as the House Builders Federation (HBF) and the National Housing Federation (NHF). A total of 21 responses were received, of which 11 were complete and 10 partial. The response represents some 24.4% of those targeted. Over 75% did not respond.
- 3.9 The key issues raised in the responses received are summarised below:

Impact of the standards

- Overall, the nationally prescribed space standards were considered to have no significant impact on demand, supply, sales, build costs and delivery programmes for housing by the majority of respondents
- Overall the Optional Requirement M4(2) was considered to have a potential negative impact on smaller developments. Concern was also expressed regarding the negative impact on service and maintenance charges and the impact this could have on demand/affordability.

- It was felt by a representative of a house building industry body that the impact of the requirement for step free access on affordability and service charges should be considered in detail, and that flexibility should remain for development to be provided at lower levels without lifts where viability issues dictated. i.e. concern that housing output will reduce if walk up blocks are no longer permitted in any circumstances.
- Overall, the ongoing requirement for 10% wheelchair housing was supported by the majority of respondents, but comments were made that local demand and need should be reflected.
- It was suggested there should be a more flexible approach to the allocation of affordable wheelchair accessible units, enabling wheelchair users already accommodated in unsuitable dwellings to be offered suitable units where there is insufficient take up from new tenants.
- There was very little evidence of specific targeted marketing for wheelchair units.
- There was a majority of respondents in favour of retaining a dedicated car parking space for each wheelchair unit.
- There was support for the consolidation of standards, as this would reduce planning timetables and process costs, but concern that this could restrict local planning authorities ability to pursue local priorities
- Overall, the new nationally described space standards and water standards are not considered to significantly affect viability.

Validity of the approach to testing viability

- Overall, the assumed densities for the 1 ha tile tests were considered to be appropriate, with additional commentary that some higher densities should be tested.
- Overall, the mix of unit types was considered appropriate, with some additional commentary that there was very limited market demand for larger 4 bedroomed flats.
- Concern was also expressed that 4 bedroomed flatted affordable units are increasingly difficult to let as a result of the under occupancy penalty²² and that these should not be included as a matter of course in the viability testing.

²² Introduced as part of the Welfare Reform Act 2012, frequently described as the “Bedroom Tax”

- Overall, the suggested approach to sensitivity testing was supported, but with the caveat that build costs had demonstrated higher inflation than the percentages initially suggested for the sensitivity analysis.
- Overall, there was support for the proposed case study locations.
- There was support for the use of CIL benchmark land values as the basis against which to test viability.
- Specific suggestions for testing included small low rise flatted development to test the impact of the inclusion of lifts, a range of scheme sizes, from 50 – 750 units, the inclusion of some 3 bed + family housing, and the testing of schemes above 10 storeys in height.
- Particular concern was expressed that for very small constrained sites the potential impact of including a lift on the mix that can be accommodated should be considered.
- There was support for the adoption of a 20% profit on gross development value of the market units for appraisal purposes.
- The ongoing need for viability of individual schemes to be reflected in individual negotiations for the provision of affordable housing was raised – viability testing of the impact across London as a whole was considered too high level to reflect individual circumstances.

A full copy of the analysis of the survey results is provided at Appendix 2

- 3.10 In addition to the survey based consultation, interviews were held with representatives of the HBF and the NHF. The NHF also provided a written representation which is provided in full at Appendix 3. Key issues raised in these discussions are incorporated in the bullet points above.
- 3.11 The feedback from the consultation has been reflected in the refinement of the viability testing, as set out in detail below.

Theory of residual valuation

- 3.12 For this study viability was assessed using a residual valuation approach (see Chart 3.1 below), This is in line with the recommendation of the Harman report²³:

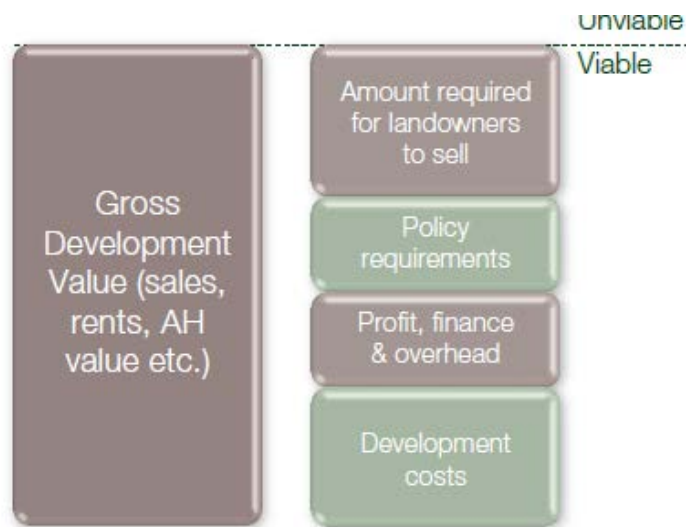
Most existing models use a residual land value methodology to assess viability. Here, the difference between the value and costs of development are compared with land

²³ Harman J. Viability Testing Local Plans. Advice for planning practitioners. June 2012

values to determine whether development will be viable. We recommend that the residual land value approach is taken when assessing the viability of plan-level policies There is a need to agree on the inputs that will be used for each of the elements of the viability equation: gross development value, build costs, land costs, profit and policy requirements. Partners should openly discuss and agree the inputs that will be used; if a consultant's approach is being used, their proposed inputs should be made available to stakeholders and revised if necessary.

(Viability testing local plans p25)

Chart 3.1: Basic outline of elements required for a viability assessment



VIABILITY TESTING LOCAL PLANS

3.13 This approach was tested through the surveys and is directly comparable with the approaches taken to viability appraisal for the SHLAA, the London-wide CIL and the various Borough Local Plans and CIL viability appraisals.

Deriving benchmark land values

3.14 We have adopted benchmark land values, as is consistent with the SHLAA viability assessment. These are based on London wide CIL viability studies which have been carried out by individual boroughs between 2010 and 2014 and which form the basis for local borough based viability testing and application of CIL charges. The land values used (or the approach used to derive them) have been found sound at Enquiry. These are established through assessing the residual land value (RLV) of alternative/existing uses for sites that may come forward for development, and applying an assumption that a land owner will not willingly part with a site to a developer for a

figure lower than the existing use value for the site. In addition, to ensure that land comes forward for development (to which CIL would then apply, which is why the land cost or notional reasonable land cost needs to be factored in to the CIL viability assessment) it is also felt that a landowner would seek an incentive payment over and above existing use value. It is therefore customary for such an allowance to be made. There is no specific requirement as to the level of such an incentive, however the adoption of 10% in some studies has been found to be reasonable through the enquiry process.

- 3.15 Whilst it could be argued that some of the older CIL viability studies may now be somewhat out of date, it was not considered proportionate for this study to update all the CIL viability benchmark land values across all London boroughs to test overall viability. The prevailing CIL land value benchmarks will form the basis of local viability testing in each borough and include a buffer, as referred to below.
- 3.16 We have therefore used these land values as the basis for an assessment of site viability, expecting that boroughs will set affordable housing and CIL policies at levels which enable these land values to be achieved in the majority of cases – i.e. that policy has been based on the assumption that, as specified in the NPPG “*Plan makers should not plan to the margin of viability but should allow for a buffer to respond to changing markets and to avoid the need for frequent plan updating*”²⁴.
- 3.17 CIL viability studies typically allow a margin of additional value over and above Existing Use value (a buffer, as referred to in 3.14 above) for the assessment of benchmarks, often of circa 10% as recognised at appeal by the Planning Inspectorate in the Oxford Street, Woodstock case APP/D3125/A/09/2104658²⁵. CIL viability studies also typically provide more than one benchmark land value based either by area (e.g. high value or low value area) or by existing use (e.g. office or industrial land). Where there is more than one benchmark land value we show the range of benchmark land values and compare these with the actual land values achieved from residential development.
- 3.18 Where a borough does not have a CIL viability study we have extrapolated from a comparison of boroughs with similar house prices and industrial rent levels to identify a comparator borough whose benchmark land values as specified in the CIL viability

²⁴ Department for Communities and Local Government. *National Planning Practice Guidance*, para 008, reference ID: 10-008-20140306

²⁵ Oxford Street, Woodstock: APP/D3125/A/09/2104658 “*The main parties’ valuations of the current existing use value of the land are not dissimilar but the Appellant has sought to add a 10% premium. Though the site is owned by the Appellants it must be assumed, for valuation purposes, that the land is being acquired now. It is unreasonable to assume that an existing owner and user of the land would not require a premium over the actual value of the land to offset inconvenience and assist with relocation. The Appellants addition of the 10% premium is not unreasonable in these circumstances.*”

study have been used. Evidence of the CIL benchmarks and values adopted for this study is provided at Appendix 4

House Prices

3.19 A range of data sources were used to inform the estimated house prices for each location, including the following:

- Published Land Registry Price Paid for new build flats sold between January 2014 and January 2015 to provide an estimate for January 2015 new build values for each Borough²⁶. There were 6992 sales of new flats recorded for London in this period. In the same period there were 332 new house sales recorded. There new house numbers in each Borough were too small and the houses too variable in size to provide a statistically valid result.
- The values adopted in the 2014 SHLAA viability assessment
- The benchmark values in the 2014 GLA Toolkit
- Asking and sales prices in Rightmove and Zoopla
- Property Market Reports based on sales and asking prices set out in Home.co.uk
- The range of asking prices by type according to evidence of new properties for sale on Rightmove
- The estimates were then disaggregated into dwelling size by number of bedrooms and type (flat, terrace, semi, and detached) using ratios derived from sales described in more detail in Rightmove and Zoopla.
- The derived results were intentionally towards the cautious end of the spectrum of value, and were used in the 1 ha tile analysis.

3.20 A similar methodology was used for each sample site, but based on evidence relating to the relevant location within each borough. For some sample sites there were insufficient or no relevant comparators, so similar dwellings in adjoining Postcode Sectors were identified. Site location factors such as riverside views, town centre, neighbourhood tenure mix, were reflected in the values adopted.

3.21 Details of the evidence used to support the adopted values for both the 1ha tile tests and the case studies are provided at Appendix 5.

²⁶ Published Land Registry data excludes transactions between companies, discounted sales such as Right To Buy or shared ownership, auctions and sales of repossessed stock.

Affordable Housing

3.22 For this study we have used the individual London Borough Plan policy mix of market to affordable housing and assumed that within the affordable housing 60% would be an Affordable Rent (AR) product with a rent averaging 65% of market rent (subject to the Local Housing Allowance, this means for some locations the assumed rent will be lower than 65%), and 40% would be shared ownership purchased at a 40% share. These are the same assumptions as those used for the 2014 SHLAA viability assessment. More detailed information about key modelling assumptions on affordable housing revenues is set out at Appendix 6.

3.23 With regard to the availability of grant, the latest housing Funding Prospectus for 2015-18²⁷ states *"In London, the expectation is that no affordable home delivered as S106 should require any grant. The capitalised rental stream and cross subsidy from shared ownership or other low cost home ownership products should be the only contribution to the subsequently delivered affordable homes"*. However it goes on to set out in what circumstances grant can be justified, concluding "The GLA will only consider these proposals for grant where it can be demonstrated that

- The scheme is unviable
- It delivers additional affordable homes
- It accelerates the delivery of the affordable housing

3.24 We have therefore modelled the availability of grant, taking into account its potential positive impact on scheme viability and deliverability where these criteria could be interpreted to apply.

Build Costs

3.25 Base build costs have been provided for each dwelling type and location by Gardiner and Theobald. These are based on evidence of build costs in London in the market place, and reflect current London Plan requirements.

3.26 Additional costs were included to allow for the increased floor space required to accommodate the 10% of units designed to be adaptable for wheelchair users.

3.27 For the case studies, adjustments were made to reflect the specific locations being tested, and the indicative scheme configuration. Additional separate cost estimates were provided where underground car parking may be included for the relevant schemes.

²⁷ Mayor of London. The Mayor's housing covenant. 2015-18 Programme. December 2013

- 3.28 Details of the cost assumptions adopted are provided at Appendix 7.
- 3.29 Other development costs included:
- Professional fees 12% of costs
 - Interest rates 7.0% (both tenures)
 - Marketing fees 3% of Gross Development Value [GDV] (market housing only)
 - Developers return 20% GDV (market housing only)
 - Contractor's return 6% of build costs (affordable housing only)
- 3.30 We make no assumption about exceptional development costs. Where exceptional development costs arise, these will be the subject of individual negotiations related to their impact on the deliverability of specific development proposals. We do not consider this relevant to the testing of the impact of the relatively minor changes required to building specification to accommodate the new housing standards.

Density

- 3.31 For testing the 1 ha tile, the boroughs were assigned to one of three groups based on an assumed 'typical' future development density. The densities were derived from analysis of the SHLAA database and in light of development density policies in the London Plan and discussion with the GLA.
- 3.32 The three density groups for testing were 80 dph (dwellings per hectare), 160 dph and 320 dph and the Boroughs were assigned to these as shown in the table 3.2a below. These are broadly consistent with the assumptions used for the SHLAA viability assessment. Kingston has been modelled at both 80dph and 320 dph.

Table 3.1a: Boroughs assigned to each density

80 dph	160 dph	320 dph
Barking and Dagenham	Croydon	Brent
Barnet	Haringey	Camden
Bexley	Newham	City of London
Bromley	Kingston	Greenwich
Ealing		Hackney
Enfield		Hammersmith and Fulham
Harrow		Islington
Havering		Kensington and Chelsea

Hillingdon		Kingston
Hounslow		Lambeth
Kingston		Lewisham
Merton		Southwark
Redbridge		Tower Hamlets
Richmond		Waltham Forest
Sutton		Wandsworth
		Westminster

Table 3.1b Dwelling mix for each density used for the 1 ha tile

Dph	1 bed	2 bed	3 bed	4 bed	All flats?	Storeys (for flats in the scheme)
80 dph	20% (flat)	25% (flat)	25% (terrace)	30% (terrace)	No	3
160 dph	30%	40%	30%		Yes	5
320 dph	40%	35%	25%		Yes	12

3.33 Table 3.1b sets out the assumed dwelling mix for the different densities. This differs from the mix adopted in the SHLAA viability assessment which included for both the 160 and 320 dph SHLAA tile tests 5% of 4 bedroom flat units. The market consultation indicates there is limited demand for 4 bedroom flats, and where these were sometimes required as part of the affordable housing package there has been a refocus on delivering smaller affordable dwellings in higher density development in order to deal with the impact of the under occupancy penalty introduced as part of the Welfare Reform Act 2012. Therefore, the dwelling mix has been amended to reflect this.

Size of dwellings

3.34 A range of dwelling types were used in the testing. Dwelling sizes assumed were taken from the space standards as agreed with the GLA. It should be noted that the main differences between the space standards and existing London Plan standards are in respect of the size of the larger houses; the Government's standards are slightly smaller than the current London Plan standards. Given that 98% of London development is flats, this is of little relevance to the majority of development proposals that will come forward.

Houses

2 bed terrace (2b/4p) 79 sq m

3bed terrace (3b/5p – 2 storey) 93 sq m
4 bed terrace (4b/6p– 3 storey) 121 sq m

Flats

1 bed (1b 2p)	50 sq m
2 bed (2b/4p)	70 sq m
3 bed (3b/5p)	86 sq m
4 bed (4b/6p)	99 sq m (Used only for case studies)

Community Infrastructure Levy (CIL) /planning obligations

- 3.35 For the viability analysis to be complaint with NPPF, it is important that all planning requirements are taken into account. This includes Community Infrastructure Levy (CIL) payments as well as other s106 costs.
- 3.36 The Mayoral CIL has been adopted with a charge for residential development for every Borough (at £20, £35 or £50 per sq. m).
- 3.37 Not all Boroughs have an adopted CIL but where there is a published charging schedule (adopted, draft or preliminary draft), the most up to date schedule has been used for this study. It is recognised that where a draft or preliminary draft schedule has been used, the adopted schedule may be different and this will affect viability. However, experience to date indicates that where charging rates are modified through the examination process, this has been to reduce the rates, which will have the effect of improving viability.
- 3.38 For many Boroughs, there is more than one charging zone. For the case studies, it has been possible to identify the relevant rate for the location of the site. For the 1 ha tiles, a single CIL rate was identified for each borough. This was based on an analysis of the general average of the different rates across the Borough but with an element of common sense to discount rates for areas with very little development anticipated.
- 3.39 It is acknowledged that, for the analysis of the 1 ha tile, the adoption of an ‘average’ CIL rate means that viability would be weaker or stronger in different parts of the borough than the results indicate – although the average depicted is reasonable.
- 3.40 In addition to CIL, allowance was made for a scaled back s106 payment to account for on-site mitigation costs. This was estimated at £2,000 per dwelling reflecting the approach taken in the 2014 viability SHLAA study. The application of a £2,000 per dwelling S106 contribution is not intended to be an exact assessment of what the actual costs of S106 contributions will be as this will depend greatly on sites specifics, instead it is an averaged factor that is used for the purposes of modelling a range of scenarios.

- 3.41 There will be situations in practice where the actual S106 contribution may be zero, £2,000 per dwelling, or potentially more. What the modelling is intended to test is a common approach to the impact of the standards on the delivery of housing in London that does not ignore the fact that a s106 payment may be required in addition to CIL. It is recognised that in reality this will form part of wider site specific viability discussions on a case by case basis.
- 3.42 For Bromley, the only boroughs without a Borough CIL charging schedule (Preliminary Draft, Draft or adopted) a single s106 payment was assumed - £10,000 per dwelling. This is consistent with the assumptions made for the SHLAA viability assessment.
- 3.43 Full details of the CIL charges applied to the tests are provided at Appendix 8

Standards testing – 1 ha tile tests

- 3.44 The approach adopted for testing the National Housing Standards is as follows:

Baseline Appraisal

- 3.45 The baseline appraisal is based on a development at the relevant density, adopting the new standard unit sizes as set out above at paragraph 3.34, and applying the target level of affordable housing, averaged CIL and London CIL appropriate to each borough. In determining the costs for the tile tests, it is assumed that all existing London Plan requirements are met, including meeting the standards in the Housing SPG; including minimum ceiling heights, lifetime home requirements, not exceeding eight dwellings per core per floor, lifts for dwellings of 5 storeys and above, requirements for balconies and open space (see London Housing SPG for all detailed standards). It should be noted that the current minimum ceiling height in London is 2.5m and higher heights are encouraged. The costs assumptions therefore reflect this ceiling height (rather than the lower 2.3m that is in the Government's new national technical standards).
- 3.46 In addition, the tile tests reflect the requirement for 10% of units to be designed to be wheelchair accessible or wheelchair use. For these units, the following unit sizes were adopted:

Houses

2 bed terraced (2b/4p)	94 sq m
3bed terraced (3b/5p – 2 storey)	119 sq m
4 bed terraced (4b/6p– 3 storey)	135 sq m

Flats

1 bed (1b 2p)	58 sq m
2 bed (2b/4p)	87 sq m
3 bed (3b/5p)	103 sq m

4 bed (4b/6p)

118 sq m (Used only for case studies)

- 3.47 The Baseline therefore tests overall London viability of the Housing space standards. This was then sensitivity tested to assess the impact of applying the average levels of affordable housing being delivered in each borough, where these are lower than the target levels, to assess viability at status quo affordable delivery levels as a comparison to the policy compliant baseline.
- 3.48 The residual land values per ha were then compared to the CIL benchmark land values to assess overall viability.

Testing Optional Requirement M4(2)

- 3.49 Building regulation Optional Requirement M4(2) –‘accessible and adaptable dwellings’ will replace the London Plan’s Lifetime Homes standards. M4(2) broadly reflects lifetime home standards, however, it also requires step free access above ground floor to comply with this standard. The current London Plan requirement provides for lift access from the 5th storey and above. The 1 ha tile tests assumed mix at 80 dph flats includes development up to 3 storeys. All other tile tests include flats of 5 storeys and above and therefore already require lifts to be provided. The impact of the cost of providing lifts to the flatted development in the 80 dph tile tests has therefore been tested. For the purpose of the tests, it is assumed that the flatted development will be provided as follows:

1 x 3 storey block with 8 units per floor

1 x 3 storey block with 4 units per floor

- 3.50 An additional cost allowance has therefore been made for the provision of one lift in each block. The costs of the additional lifts were provided by Gardiner and Theobald, based on market evidence and experience. For the purpose of the 1 ha tile tests, it is assumed that the inclusion of a lift will not have any impact on the mix of units provided in the notional scheme.
- 3.51 The revised residual land values per ha were then assessed against overall viability in relation to benchmark land values, and the changes from the baseline position identified and quantified.

- 3.52 The additional costs per m² associated with the provision of the lifts was also expressed as a percentage of the base build cost per m² to provide an understanding of its significance within the overall build costs for the scheme.

Testing Optional Requirement M4(3) – Wheelchair user dwellings

- 3.53 The current London Plan target is for 10% of homes to be designed to be wheelchair accessible or easily adaptable standard. The MALP updates this by requiring 10% of units to meet Building Regulations optional requirement M4(3) – ‘wheelchair user dwellings’, given the similarities between the London Plan’s requirements and the Governments standards, it is assumed that meeting M4(3) has no additional cost implications to meeting the current London Plan standards.
- 3.54 In terms of the 1 ha tile tests, the inclusion of wheelchair housing in the baseline assessment did not assume any additional sales value for the additional floor space provided. The size increase was however reflected in the costs.

The impact on viability of the move to zero carbon homes

- 3.55 The Government’s Carbon Plan sets a target of all new homes being Zero Carbon from 2016²⁸. The London Plan currently requires a reduction in carbon dioxide emissions of 35% beyond Part L 2013 of the Building Regulations - this is deemed to be broadly equivalent to the 40 per cent target beyond Part L 2010 of the Building Regulations, as specified in Policy 5.2 of the London Plan for 2013-2016.
- 3.56 The baseline assessment assumes that this target is being met, as evidenced by the monitoring of the London Plan energy policies.²⁹ The additional costs to achieve the Government’s proposed zero carbon standard have been tested against the 1 ha tile indicative developments.
- 3.57 The additional CO₂ reduction required for each density and mix of units appropriate to the 80 dph, 160 dph and 320 dph tile tests has been calculated by Hoare Lea as a quantity of kilos of carbon per m² for both flatted and housing development. Carbon emissions were calculated using part L benchmarks. Part L benchmarks were based on calculations carried out on a range of recent Hoare Lea projects and are essentially averages from several large schemes, themselves including several dwellings which had been individually modelled in Part L. 3 benchmarks were then created, differentiating between low-rise apartments (traditional construction, un-cooled), private high-rise (curtain wall, cooled), and houses. A likely energy strategy

²⁸ Governments Plan for Growth 2011

²⁹ Mayor Of London Energy Planning - Monitoring the implementation of London Plan energy policies in 2013, GLA June 2014.

was then established for each scheme. These were validated by the GLA as reasonable and meeting their typical expectations. Using the figures derived from this process, the total amount of carbon to be addressed to achieve zero carbon has been calculated, and it is assumed for the 1 ha tile tests that this will be covered by carbon offset payments.

- 3.58 As agreed with the GLA, a carbon offset cost of £60 per tonne of carbon for a period of 30 years has then been applied to each of the indicative developments. This is a nationally recognised price for carbon and the central price cap option suggested by Government in their consultation on Allowable Solutions.³⁰ No allowance has been made for the Net Present Value of the annual costs as it is assumed this would be indexed.
- 3.59 The resultant residual land values per ha have then been assessed against overall viability in relation to benchmark land values, and the changes from the baseline position (now including the cumulative impact of Optional Requirement M4(2) on the 80 dph tiles) identified and quantified.
- 3.60 The additional costs per m² associated with the carbon offset payments has also been expressed as a percentage of the base build cost per m² to provide an understanding of its significance within the overall build costs for the scheme.
- The cumulative cost impact of this and the additional costs associated with M4(2) have also been considered.

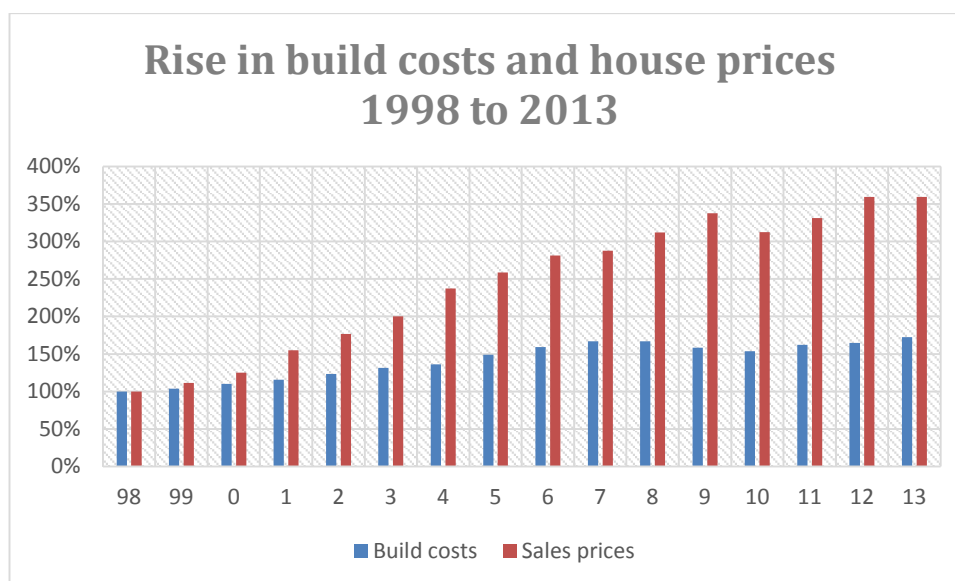
Sensitivity analysis

- 3.61 The cumulative impact of the testing of the housing standards has then been subjected to sensitivity testing to explore the position in relation to potential changes in the housing market.
- 3.62 The basis on which to conduct the sensitivity testing was explored as part of the consultation survey, setting out a suggested basis as adopted for the SHLAA viability testing, as follows:
- 3% house price growth with 3% build cost inflation
 - -1% house price growth with 3% build cost inflation
 - 3% house price growth with no build cost inflation

³⁰https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/226610/130731_ALLO_WABLE_SOLUTIONS_CONDOC_FOR_PUBLISHING.pdf

- Availability of grant at £30,000 per affordable home
- 3.63 Following consultation via the surveys, and taking into account a review of predicted changes in house price growth for the foreseeable future, the following alternative sensitivity tests were adopted:
- No house price growth with 5% build cost inflation
 - No house price growth with 8% build cost inflation
 - -0.5% house price growth with 8% build cost inflation (worst case scenario)
 - 3% house price growth with 8% build cost inflation – only applied to those locations showing a residual land value of less than 10m per ha at the worst case scenario
 - Average affordable housing delivery levels rather than target levels of affordable housing for those sites demonstrating less than £5m RLV/ha
 - Availability of grant at £30,000 per affordable home only for those locations demonstrating less than £5m RLV/ha
- 3.64 It should be noted that none of the testing has included any additional value generated by the sale of the ground rents from the leasehold flatted developments. This reinforces the pessimistic position adopted.
- 3.65 In each case, the revised residual land values per ha were then assessed against overall viability in relation to benchmark land values, and the changes from the baseline position identified and quantified. This has enabled the magnitude of the impact of changes in market conditions to be compared to the impact of the housing standards.
- 3.66 In terms of viability modelling house price rises improve viability unless they are accompanied by even larger increases in build or other development costs. Our assumptions for sensitivity testing are therefore pessimistic- in each case it is assumed there will be a higher increase in costs than in house price rises.
- 3.67 Historically house prices have risen faster than build costs (see chart 3.2 below)

Chart 3.2 Changes in house prices and build costs (1996 =100)



Sources; London house prices DCLG live table 582, BCIS General Building Cost Index

3.68 BCIS forecasts that over the period Q4 2015 to Q4 2019 are set out below. This shows an overall increase of just under 4% per annum:

Table 3.2. BCIS Forecast of Building Costs

Year on Year	Forecast	
	Feb 2015	Mar 2015
4Q2014 to 4Q2015	+1.9%	+1.3%
4Q2015 to 4Q2016	+3.1%	+3.4%
4Q2016 to 4Q2017	+3.6%	+3.6%
4Q2017 to 4Q2018	+3.7%	+3.8%
4Q2018 to 4Q2019	+4.2%	+3.9%

Source: BCIS

3.69 We then looked in detail at potential change in house prices across London. The range of published forecasts is summarised in table 3.3 below:

Table 3.3 Published London house price forecasts (4th qtr 2014)

London house price forecasts		2015	2016	2017	2018	2019	5 year Total	Source
CEBR		-3.3%	4.3%	5.7%	5.7%	6.1%	-	January 2015
Hamptons International		1.5%	4.0%	-	-	-	-	Housing Market Forecasts Winter 14/15
Jones LaSalle	Prime Central London	1.5%	4.0%	4.5%	4.5%	4%	19.9%	Residential Forecast November 2014
	Central London	4%	5.5%	5.5%	5%	4%	26.4%	
	Greater London	5.5%	6%	6%	5%	4%	29.4%	
Oxford Economics		-	-	-	-	-	32.5%	Oxford Economics/Rightmove October 2014
Savills Research	Prime London	-0.5%	7 %	5.5%	4.5%	4.5%	22.7%	House Price Predictions November 2014
	Prime Suburbs	1.0%	7%	6%	5%	4.5%	25.7%	
	Mainstream London	0%	3%	3%	2%	2%	10.4%	
Average of forecasts		1.2%	5.1%	5.2%	4.5%	4.1%	23.9%	Annual average change +4.02%

3.70 This indicates that house prices are predicted to continue to grow faster than build costs over the next 5 years. The sensitivity testing carried out is deliberately biased towards a static or falling market, and rising costs. This is at odds with the optimism of recent published forecasts but is justified by our role in the evaluation of the viability of housing standards which is to test the impact on the delivery of housing developments. In general strong housing markets with moderate to strong house price growth improve development viability unless this is accompanied by even greater increases in costs. We have purposely focussed on the downside scenarios because they pose a potential threat to viability and delivery of the London Plan, whereas rising house prices should improve viability and encourage delivery.

4.0 VIABILITY TESTING: RESULTS FOR THE 1 HA TILE

Borough groupings

- 4.1 For testing the 1 ha tile, the Boroughs were assigned to one of three groups based on an assumed 'typical' future development density (80 dph, 160 dph or 320 dph) as set out in table 3.1a at paragraph 3.31 above. Most boroughs fell into either the 80 dph category or the 320 dph category. Kingston has been tested at both 160dph and 80dph residential development to test the viability of different density levels in outer London.

Assessment of benchmark land values for policy purposes

- 4.2 Assessment of land value is a sensitive and hotly debated subject. It is worth noting the comments of the Examiner on the viability evidence presented in support of the London CIL:

"The market value approach.... while offering certainty on the price paid for a development site, suffers from being based on prices agreed in an historic policy context." (para 8) and that "I don't believe that the EUV approach can be accurately described as fundamentally flawed or that this examination should be adjourned to allow work based on the market approach to be done"

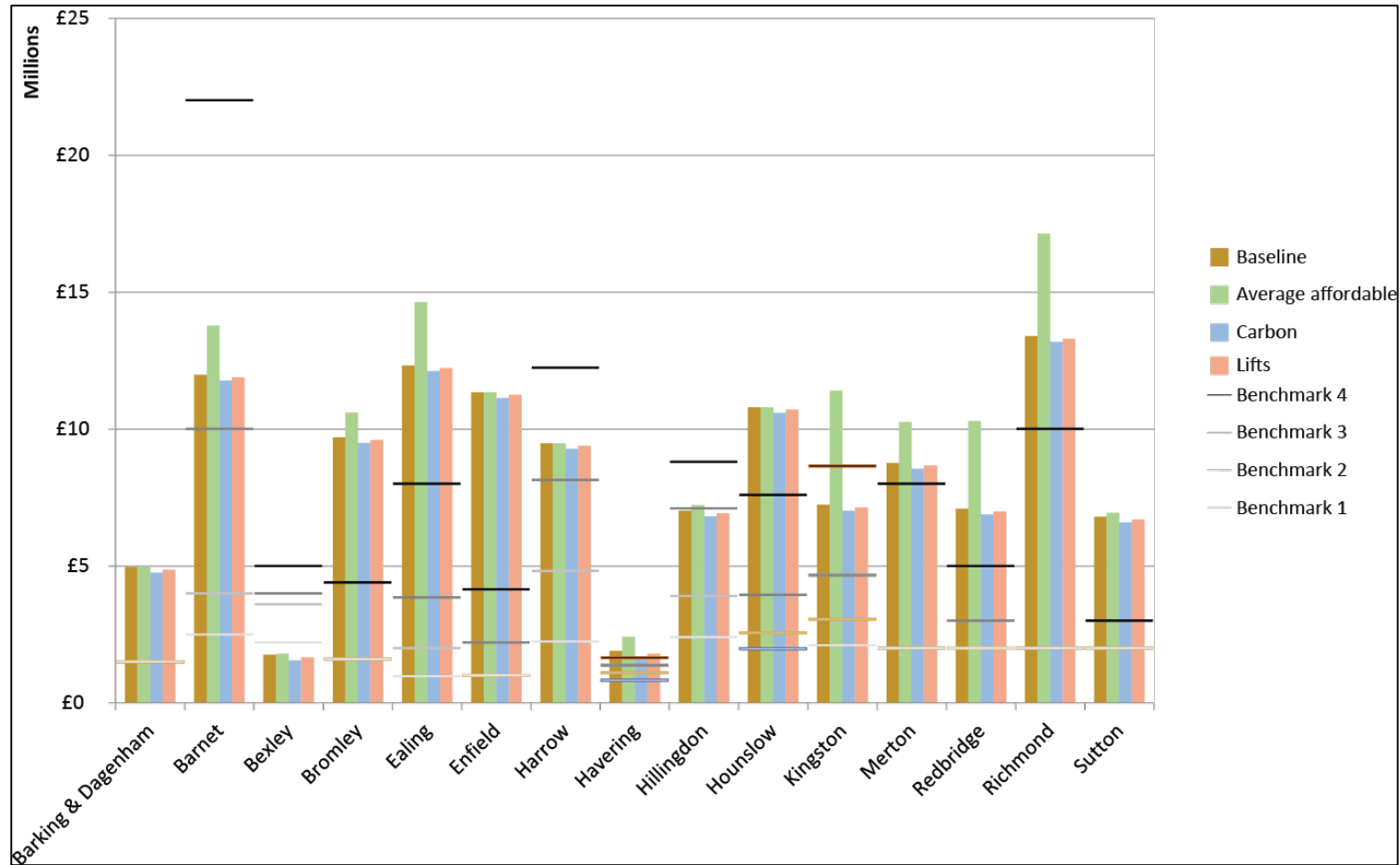
"the price paid for development land may be reduced [so that CIL may be accommodated]. As with profit levels there may be cries that this is unrealistic, but a reduction in development land value is an inherent part of the CIL concept. It may be argued that such a reduction may be all very well in the 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. (para 32 – emphasis added).

- 4.3 For assessing the results of the tile testing, the range of CIL benchmark land values adopted for the Borough CIL viability assessments were identified, and where either more complex (e.g. a range of values applied to different areas within a borough) or not in evidence, these were extrapolated from the information provided, and from those applicable to comparable boroughs. The derived table provided a range of 4 CIL benchmarks for each borough, reflecting alternative uses from good quality secondary offices at the upper value end through secondary and industrial uses to community uses as the lowest value.
- 4.4 In each case, the CIL viability assessments already included in these figures an assumed incentive payable to the landowner to ensure a willing land sale. This may not be consistent across all boroughs, but will reflect the local nature of the assessment. The table of CIL benchmark land values is set out at Appendix 4

Results from the 1 ha tile

- 4.5 The 1 ha Tile tests were analysed against the benchmark land values to assess the impact on viability of the proposed new standards. These findings are set out below in two ways. Firstly graphs are presented that show the results per borough for each of the density categories. This is followed by commentary and tables discussing the overall impact on viability in London – setting out in how many cases the residual land value per hectare exceeded the benchmark land value. This means there were four potential outcomes for each tile, as in some cases the lower benchmarks were exceeded, but higher benchmarks were not. This has enabled the outcome to be expressed as a percentage viability against the total number of viability hurdles. This section also includes a sensitivity analysis of the impact of market changes.
- 4.6 The graphs below show the implications of adopting the new housing standards on residual values against the CIL benchmarks discussed above for each borough at the different assumed densities. Chart 4.1, shows the results for the 80 dph tiles; for each borough the first column (baseline) shows the baseline assessment as described above, the second (average affordable) shows the baseline with average affordable housing delivery, the third (lifts) shows the residual value once the costs of including lifts to achieve step free access has been taken into account (based on policy compliant affordable housing levels), the fourth column (Carbon) shows the residual land values taking account of the inclusion of lifts and the cost of reaching zero carbon (again based on policy compliant levels of affordable housing).
- 4.7 Charts 4.2 and 4.3a and b follow the same approach as chart 4.1; column one for each borough shows the baseline residual land value, column two the impact of assuming average affordable housing delivery levels and column three the impact of reaching zero carbon (assuming policy compliant levels of affordable housing).

Chart 4.1 80 dph 1 ha tile test results



David Lock Associates with
 Hoare Lea and Gardiner and Theobald
 May 2015

Chart 4.2 160 dph 1 ha tile test results

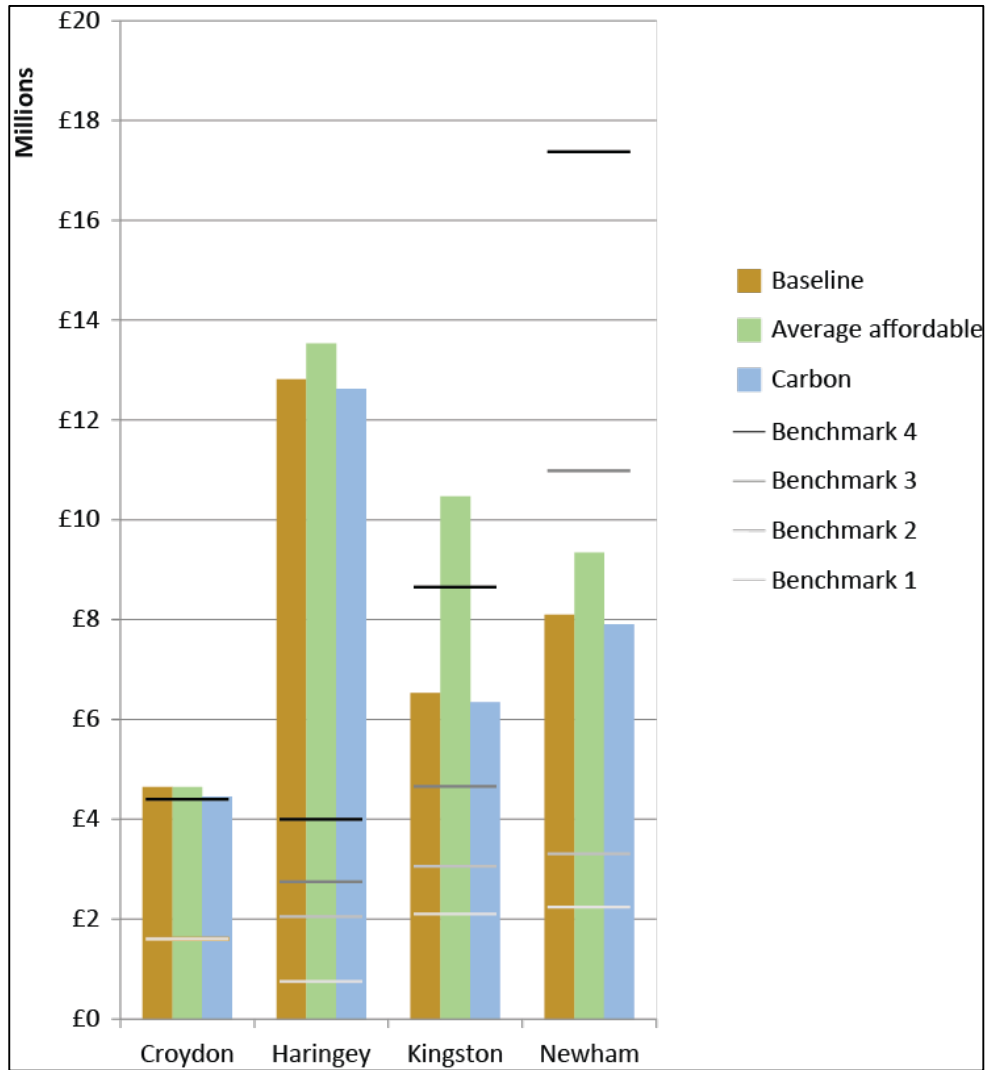
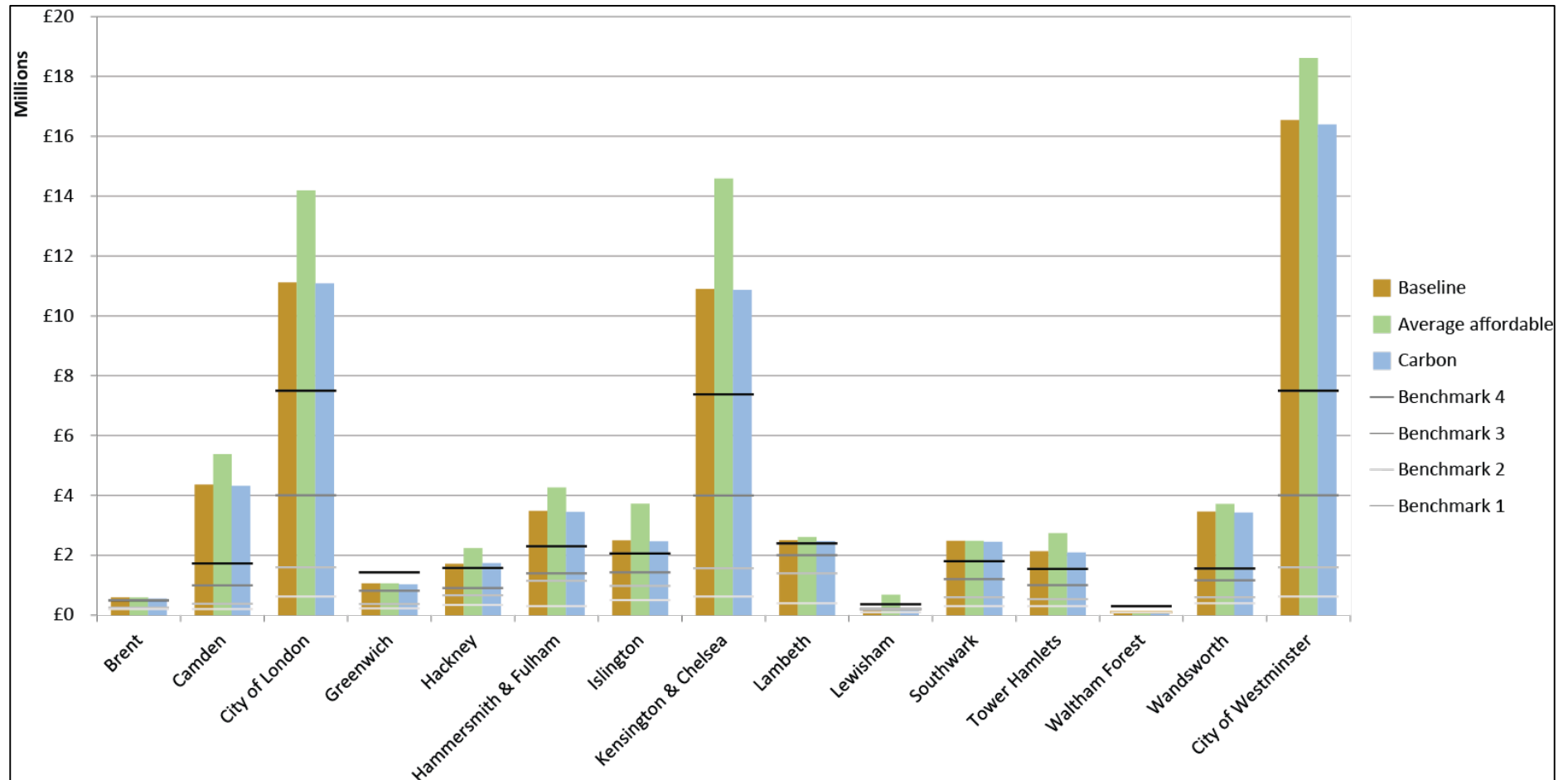
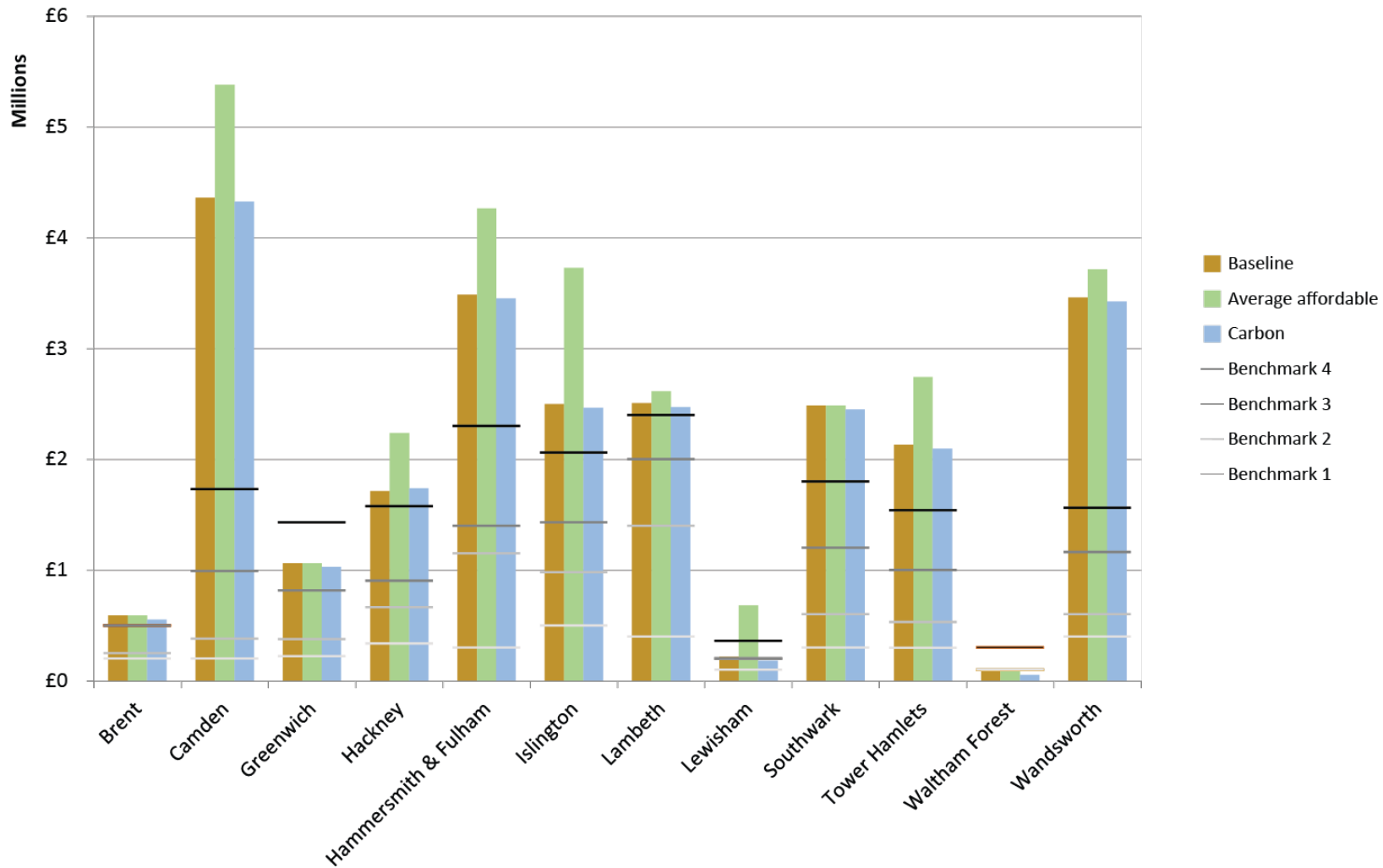


Chart 4.3a 320 dph 1 ha tile test results



4 Chart 4.3b 320 dph 1 ha tile test results (as above but with high RLV boroughs removed).



4.8 In each case, these results indicate that the impact of the standards on the baseline assessment is minimal. There is a significantly more noticeable impact from the application of average rather than target affordable housing levels where these are below the target level. The detailed results analysis is set out below:

Baseline assessment

4.9 For the baseline assessment, the outcomes were as follows:

Table 4.1a Baseline 1 ha tile test outcomes

33 London boroughs		
4 benchmark values for each		
Total	132	100%
Viable	116	88%
Unviable	16	12%

Table 4.1b Baseline 1 ha tile test outcomes by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	24	73%
Medium high	30	91%
Medium low	31	94%
low	31	94%

Reference Paragraph 3.14-3.18 and Appendix 4 for details of benchmark bands

4.10 This indicates that only two boroughs failed to meet the two lowest viability hurdles at their target affordable housing rates. These were Bexley and Waltham Forest. This differs from the SHLAA viability assessment in that Barking and Dagenham shows positive viability. The SHLAA assessment applied a 50% affordable housing target to Barking and Dagenham, however, the borough’s policy only refers to the London Plan’s approach of maximum reasonable. Although this is likely to be greater than zero, for the purposes of this viability study, zero affordable housing has been assumed.

4.11 One additional borough failed to meet the Medium high viability benchmark, this was Newham, where the benchmark value at this level was £10.98 million. At the highest benchmark level these boroughs were joined by Barnet, Greenwich, Harrow, Hillingdon, Kingston and Lewisham. This reflects that the values applied have been averaged across the Boroughs and that there will be areas and uses in those Boroughs that attract higher and lower values.

Baseline using average affordable delivery percentages

4.12 When tested at average delivered percentages of affordable housing, based on GLA monitoring, where these are lower than target levels, the results were as follows:

Table 4.2a Baseline 1 ha tile test outcomes reflecting actual levels of delivered affordable housing

33 London boroughs		
4 benchmark values for each		
Total	132	100%
Viable	117	89%
Unviable	15	11%

Table 4.2 b Baseline 1 ha tile test outcomes reflecting actual levels of delivered affordable housing by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	25	76%
Medium high	30	91%
Medium low	31	94%
low	31	94%

4.13 The use of average delivered affordable housing levels improved viability above benchmark values in Kingston, where all benchmark levels were now viable.

4.14 Overall, it is clear that the Housing Space Standards used for the baseline assessment, which in any event are either the same as or in some cases marginally lower than existing London Plan space standards, are not a threat to the viability of housing delivery across London.

4.15 The findings above show that it is viable to deliver the space standards in London, as is also evidenced by the fact that the London Plan has been applying space standards since 2011. The NPPG requires the consideration of the impact of space standards on affordability as well as viability. It states “*evidence should be provided on the size and type of dwellings currently being built in the area to ensure the impacts of the space standards can be properly assessed*”. In 2012 the GLA commissioned HATC³¹ carry out a snapshot assessment of the size of dwellings being built in London prior to the

³¹ HATC LTD London Housing Standards 2009/10.

implementation of the 2011 London Plan. The study focused on private dwellings (as the affordable housing sector was already required to meet the standards), it found that only 42% of the 2009/10 sample met or exceeded the space standards. This shows a clear need for standards to drive quality (as set out in the GLA Housing Standards Review report of Evidence of Need). In terms of affordability, given similar standards are already in place in London, it can be assumed that the adoption of the government's standards will not affect affordability.

Optional Requirement M4(2) – step free access

- 4.16 This test only applied to those tiles with indicative development at below 5 storeys. This sample included all the 80 dph tile tests. The **baseline** position for the 80 dph tile test was as follows:

Table 4.3 a Baseline 80 dph 1 ha tile test outcomes

15 London boroughs 80 dph baseline		
4 benchmark values for each		
Total	60	100%
Viable	52	87%
Unviable	8	13%

Table 4.3b Baseline 80 dph 1 ha tile test outcomes by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	10	67%
Medium high	14	93%
Medium low	14	93%
low	14	93%

- 4.17 The outcomes when the additional costs of providing lifts to the two notional flatted low rise blocks were applied are as follows:

Table 4.4 a Optional M4(2) requirement outcomes

15 London Boroughs		
4 benchmark values for each		
Total	60	100%
Viable	51	85%
Unviable	9	15%

Table 4.4 b Optional M4(2) requirement outcomes by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	10	67%
Medium high	13	87%
Medium low	14	93%
Low	14	93%

- 4.18 This demonstrates that the impact of the cost of the additional lifts on the tile tests is very minor, with only one benchmark band in one of the boroughs tested at this level moving from viable to unviable. This was in Hillingdon, where the revised RLV failed to meet the benchmark value of £7m per ha. Again, the averaging of values for the testing implies that this may not be the case across all areas of the Borough, as values will vary.
- 4.19 Through the consultation surveys and discussions with the HBF and NHF, it was pointed out that the impact of M4(2) may not be limited to the cost of the provision of the lifts, but in very constrained sites could also impact on the mix of units, or in extreme cases reduce the number of units. This could have a more significant impact on viability in individual developments, and has therefore been tested through the case studies as part of scheme type 1, the outcomes of which are considered later in this report. Clearly there will always be a need for individual circumstances to be considered on their merits, should such impact arise.
- 4.20 Concern was also raised at the impact lifts in low rise developments would have on maintenance and management charges, as there are fewer units across which these will be shared, and high service charges could impact on demand for and affordability of these flats in comparison to others. Again, the impact of this will vary from location to location based on the levels of value and market to which the units will appeal, and is something that can be considered at the margins in locations where lower values dictate against strong demand for units with relatively high service charges.
- 4.21 Gardiner and Theobald have assessed an indicative whole life cost for a lift at circa £120,000 over a 25 year period. At current values this equates to an annual service charge cost per lift of circa £4,800 pa. Spread over a very small low rise development of only 12 units, this would amount to an additional charge of in the order of £400 per annum. For a larger block, the cost per unit would be lower. It is not anticipated that this would be a determining factor that would impact on the purchase price of or demand for individual units for private sale. This additional cost was raised as a

potential issue for the affordable sector in the consultation exercise, therefore the GLA may want to consider insuring there is sufficient flexibility in the standards to take these affordability implications into account on a case by case bases, while reflecting the importance of ensuring accessible accommodation.

4.22 As a percentage of costs, the additional cost per m2 of development was compared to the base build cost (i.e. the construction costs excluding on-costs, fees and finance) per m2 of the flatted development. The aim of this was to have some understanding of the magnitude of the additional cost within the overall build cost context. For all 80 dph boroughs the maximum percentage additional cost was found to be below 2.4%.

4.23 Overall, from the tile test results it can be reasonably concluded that the impact of Optional Requirement M4(2) step free access on the deliverability and viability of housing development in London is minimal (and only relevant for units consisting of four storeys or below) and is insufficient to be considered to challenge the overall viability of housing delivery.

The move to zero carbon homes

4.24 The tile testing for the move to zero carbon homes added a cost per tonne of carbon (based on £60 per annum for a 30 year period) for the assessed amount of carbon to be offset between the existing London Plan standard and Zero Carbon. For the 80 dph units for which the M4(2) step free access requirements represent an additional cost, the costs were cumulative, so the impact of both standards is included. The outcomes are set out below:

Table 4.5 a Zero Carbon test outcomes

33 London boroughs		
4 benchmark values for each		
Total	132	100%
Viable	113	86%
Unviable	19	14%

Table 4.5 b Zero Carbon test outcomes by benchmark land value band

Benchmark Land values	No. of Boroughs Viable	% Viable
Highest	24	73%
Medium high	28	85%
Medium low	30	91%
low	31	94%

- 4.25 Compared with the baseline, the cumulative impact of the standards is as follows:
- Reduction in overall viability across all boroughs and all test benchmark values from 89% to 86% (3% change)
 - 0% Reduction at the lowest CIL benchmark value
 - 3% reduction at the Medium low CIL benchmark value
 - 6% reduction at the Medium high CIL benchmark value
 - 3% reduction at the Highest CIL benchmark value
- 4.26 Again, to assess the overall magnitude in cost terms of the additional carbon offset requirements the cost was expressed as a percentage of base build cost. For all locations this was found to be at or below 1.4%. Combined with the cost impact of the access requirements for the 80 dph locations, the overall cost impact of applying these standards therefore represents less than 4% of the base build costs. This only applies to those low rise developments affected by the requirement. Full details of the carbon cost analysis are set out at Appendix 9.
- 4.27 Overall, from the tile test results it is fair to conclude that the cumulative impact of Optional Requirement M4(2) step free access and the move to zero carbon homes on the deliverability and viability of housing development in London is 5% overall, which is insufficient to be considered to challenge the viability of housing delivery.

Sensitivity Analysis

- 4.28 To test the impact of the standards in changing market conditions a range of sensitivity analyses were carried out as described at paragraph 3.63 above. These additional tests were cumulative to the Standards above, so the additional costs associated with the Housing standards are included before the sensitivity testing is carried out. The outcomes of these analyses are as follows:

0% house price inflation with 5% build cost inflation

Table 4.6 a Outcome of 5% cost increase sensitivity test

33 London boroughs		
4 benchmark values for each		
Total	132	100%
Viable	102	77%
Unviable	30	23%

Table 4.6 b outcome of 5% cost increase by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	18	55%
Medium high	25	76%
Medium low	29	88%
Low	30	91%

4.29 The impact of the additional 5% build cost inflation is to reduce the overall viability from 86% to 77%. The majority of this change is at the Highest benchmark value, as would be expected. Overall, housing development remains viable across all benchmark values for the majority of locations.

0% house price inflation with 8% build cost inflation

Table 4.7 a Outcome of 8% cost increase sensitivity test

33 London boroughs 4 benchmark values for each		
Total	132	100%
Viable	97	73.5%
Unviable	35	26.5%

Table 4.7 b outcome of 8% cost increase by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	17	52%
Medium high	23	70%
Medium low	28	85%
low	28	85%

4.30 The impact of the additional 8% build cost inflation is to further reduce the overall viability to 73.5%. The majority of this change is at the Medium High benchmark value. Overall, housing development remains viable across all benchmark values for the majority of locations.

0.5% fall in house prices with 8% build cost inflation – worst case scenario

Table 4.8 a Worst Case Scenario outcome

33 London boroughs		
4 benchmark values for each		
Total	132	100%
Viable	97	73%
Unviable	35	27%

Table 4.8 b Worst Case Scenario outcome by benchmark land value band

Benchmark Land values	No. of Boroughs Viable	% Viable
Highest	17	52%
Medium high	22	67%
Medium low	28	85%
low	28	85%

- 4.31 The impact of the 0.5% fall in values together with the 8% build cost inflation is to further marginally reduce overall viability to 73%. The change is the failure of one more borough to achieve the Medium High benchmark value. Overall, housing development remains viable across all benchmark values for the majority of locations.
- 4.32 The predicted changes in house prices and build costs for the next 5 years suggest all the above sensitivity tests represent a highly pessimistic view of market conditions.
- 4.33 **The overall conclusion is that the combination of the new standards with a pessimistic downturn in market conditions remains insufficient to be considered to challenge the overall viability of housing delivery in London.**

Exploring the impact on Lower Value Boroughs

- 4.34 An additional level of analysis has been carried out to assess the impact on the lower value boroughs. There are some very high value locations where viability is unlikely to be affected by any changes at the margins of development requirements. Those at the lower end of the spectrum are far more susceptible to marginal changes affecting viability and deliverability. To make sure we include a wide enough group, we have therefore looked in more detail at the boroughs that produced indicative land values of below what remains for many locations a robust figure of £10 million per hectare. At the baseline assessment, this comprised 15 Boroughs, circa 45.5% of all locations:

Bexley
 Havering
 Barking & Dagenham
 Harrow
 Hillingdon
 Kingston
 Merton
 Redbridge
 Sutton
 Bromley
 Croydon
 Newham
 Lewisham
 Waltham Forest
 Brent

4.35 For the worst case scenario test (8% rise in build costs plus a 0.5% fall in values), two additional boroughs had fallen below £10m/ha: Greenwich and Hounslow, bringing the total to over 50% of all boroughs. The viability performance for this group in the worst case scenario was as follows:

Table 4.9 a Sub £10m/ha group Worst Case Scenario outcomes

17 London boroughs		
4 benchmark values for each		
Total	68	100%
Viable	38	56%
Unviable	30	44%

Table 4.9 b Sub £10m/ha group Worst Case Scenario outcomes by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	5	29%
Medium high	9	53%
Medium low	12	71%
low	12	71%

4.36 For this group, the majority of boroughs remain viable overall, and over 70% of boroughs are viable at the two lowest levels of benchmark value. Given the projections for house price increases, and the pessimistic approach adopted for the sensitivity analysis set out above, this further reinforces the ongoing strong prospects for delivery of housing across London. A test was then carried out to see what would happen to the baseline position for these Boroughs if there was a 3% increase in

values, rather than a 0.5% decrease in values, combined with an 8% increase in costs:

Impact on sub £10m/ha boroughs of +3% house prices with 8% build cost inflation:

Table 4.10 a Sub £10m/ha group +8% build costs, +3% values sensitivity test outcomes

17 London Boroughs		
4 benchmark values for each		
Total	68	100%
Viable	42	62%
Unviable	26	38%

Table 4.10 b Sub £10m/ha group +8% build costs, +3% values sensitivity test outcomes by benchmark land value band

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	6	35%
Medium high	9	53%
Medium low	13	76%
Low	14	82%

4.37 This demonstrates that a relatively low increase in house prices (Compared to average predictions) has a meaningful impact on this group, raising overall viability from 56% to 62%, and improving viability at both upper and lower CIL benchmark values. As a result of this change, the RLV for Hounslow returned to above £10m/ha.

Sub £5m RLV boroughs

4.38 Six boroughs produced RLV's of below £5m per ha following the application of the impact of the additional costs incurred by the optional access standards and zero carbon requirements. These are the locations most vulnerable to competition for suitable development sites from alternative uses, and to minor changes impacting on the viability and deliverability of housing. These were:

- Barking & Dagenham
- Bexley
- Croydon
- Havering
- Lewisham

Waltham Forest

4.39 The cumulative outcome of the application of the Housing Standards and zero carbon requirements in terms of viability for these Boroughs is as follows:

Table 4.11 a Sub £5m/ha group Housing Standards and Zero Carbon Outcomes

6 London boroughs		
4 benchmark values for each		
Total	24	100%
Viable	13	54%
Unviable	11	46%

Table 4.12 b Sub £5m/ha group Housing Standards and Zero Carbon Outcomes by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	3	50%
Medium high	3	50%
Medium low	3	50%
Low	4	67%

4.40 To make a comparison with current delivery, the performance for these locations has been tested against average delivered levels of affordable housing rather than the targets for these locations. The outcome of this test is as follows:

Table 4.11 a Sub £5m/ha group Housing Standards and Zero Carbon, average affordable housing delivery level Outcomes

6 London Boroughs		
4 benchmark values for each		
Total	24	100%
Viable	16	67%
Unviable	8	33%

Table 4.11 b Sub £5m/ha group Housing Standards and Zero Carbon average affordable housing delivery level Outcomes by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	4	67%
Medium high	4	67%
Medium low	4	67%
low	4	67%

4.41 All but two of the boroughs, Bexley and Waltham Forest, became viable at all benchmark values. These locations have therefore been further tested against the availability of grant for the affordable element. This improved the outcome significantly:

Table 4.12 a Bexley and Waltham Forest with grant

6 London Boroughs		
4 benchmark values for each		
Total	24	100%
Viable	21	88%
Unviable	3	13%

Table 4.12 a Bexley and Waltham Forest with grant by benchmark land value band

Benchmark land values	No. of Boroughs Viable	% Viable
Highest	5	83%
Medium high	5	83%
Medium low	5	83%
low	6	100%

4.42 This demonstrates that with grant, all the lower value boroughs are now indicate viability at the lowest benchmark value, and all but one for all other benchmark levels. The most challenged borough in terms of viability is Bexley. There is however evidence of new development taking place in Bexley, and the borough supports a range of values with significant differences in value from lower priced locations such as Thamesmead and Erith, and higher value locations such as Sidcup. The tile testing cannot therefore represent all locations in a borough, and in Bexley has adopted values at the lower end of the spectrum.

4.43 Full details of the results of the 1ha tile tests are provided at Appendix 10.

5.0 VIABILITY TESTING: SCHEME TYPE CASE STUDIES

Selection of Scheme Types

- 5.1 Selection of the Scheme Types for case study assessment is consistent with the National Planning Practice Guidance which states that:

“Evidence should be proportionate to ensure plans are underpinned by a broad understanding of viability. Greater detail may be necessary in areas of known marginal viability or where the evidence suggests that viability might be an issue – for example in relation to policies for strategic sites which require high infrastructure investment.”³²

- 5.2 6 scheme types were identified and then tested across in total 43 locations, building on the case study analysis that was carried out for the SHLAA viability assessment. The scheme types were selected specifically to include a range of site sizes and densities, and configurations including a variety of mixes of housing and apartment development, and storey heights. Some are more suited to certain test locations than others, this is commented upon in the analysis. The scheme types are based on actual examples of sites included in the SHLAA. Full details of the scheme types and their assumed configurations are provided at Appendix 11
- 5.3 5 of the 6 Scheme Types are tested across 8 boroughs, in the location (where possible) of similar sized sites identified by the SHLAA. The 6th Scheme Type tests the viability of very high rise development. This has only been tested in boroughs where such development might reasonably be expected to be proposed.
- 5.4 The case study boroughs used for this study are the same ones that were tested through the SHLAA viability assessment. The primary selection criterion then used for the case study boroughs was that they were expected to make a significant contribution to overall housing land supply in London but had shown low actual output, compared to London Plan targets and were identified as areas where viability may be an issue.
- 5.5 Case study boroughs were also selected to give a range of market values and a reasonable geographic spread across London together with a range of scheme sizes, as suggested by respondents to the consultation surveys. The table below summarises the scheme types and the case study locations in which they were tested:

³² Department for Communities and Local Government. *National Planning Practice Guidance*, para 005, reference ID: 10-005-20140306

Table 5.1 Case study summaries

Case studies for viability testing											
Case study summaries											
Sub 1 ha sites			1-2 ha sites			2-4 ha sites		4-10 ha		High Rise	
Scheme Type 1		Scheme Type 2		Scheme Type 3		Scheme Type 4		Scheme Type 5		Scheme Type 6	
area ha	0.49	area ha	0.51	area ha	1.59	area ha	2	area ha	5.28	area ha	1.33
Units	53	Units	362	Units	643	Units	182	Units	400	Units	920
Density	108.2	Density	709.8	Density	404.4	Density	91.0	Density	75.8	Density	691.7
1 bed f	25%	1 bed f	45%	1 bed f	45%	1 bed f	25%	1 bed f	25%	1 bed f	45%
2 bed f	25%	2 bed f	40%	2 bed f	40%	2 bed f	25%	2 bed f	30%	2 bed f	40%
3 bed f		3 bed f	15%	3 bed f	15%	3 bed f		3 bed f	20%	3 bed f	15%
4 bed f		4 bed f		4 bed f		4 bed f		4 bed f	5%	4 bed f	
2 bed h		2 bed h		2 bed h		2 bed h		2 bed h	10%	2 bed h	
3 bed h	25%	3 bed h		3 bed h		3 bed h	25%	3 bed h	10%	3 bed h	
4 bed h	25%	4 bed h		4 bed h		4 bed h	25%	4 bed h		4 bed h	
floors	3	floors	12	floors	11	floors	5	floors	5	floors	45
Vacant		Warehousing		Industrial/ part vacant		Commercial/ industrial		Commercial		Mixed	
Test Locations Scheme Type 1		Test Locations Scheme Type 2		Test Locations Scheme Type 3		Test Locations Scheme Type 4		Test Locations Scheme Type 5		Test Locations Scheme Type 6	
Barking & Dagenham Brent		Barking & Dagenham Brent		Barking & Dagenham Brent		Barking & Dagenham Brent		Barking & Dagenham Brent		Greenwich Southwark Tower Hamlets	
Croydon		Croydon		Croydon		Croydon		Croydon			
Greenwich		Greenwich		Greenwich		Greenwich		Greenwich			
Hounslow		Hounslow		Hounslow		Hounslow		Hounslow			
Newham		Newham		Newham		Newham		Newham			
Southwark		Southwark		Southwark		Southwark		Southwark			
Tower Hamlets		Tower Hamlets		Tower Hamlets		Tower Hamlets		Tower Hamlets			

5.6 It is important to note that the SHLAA viability study was assessing the deliverability of the findings of the SHLAA. This study is concerned with the impact of the standards on viability.

5.7 The overall impact on viability has been assessed using the 1 hectare tile tests. The purpose of the case studies is to apply this to real examples of development sites, as identified by the SHLAA, to see if the findings from the tile tests hold true, and to enable specific issues to be explored in more detail, such as the potential for the inclusion of lifts in smaller low rise developments to impact on the unit mix. This was a specific concern raised through the consultation process.

Characteristics of the scheme types

5.8 To test the viability of the scheme types across the case study locations, the site information was used to provide the inputs to populate the GLA Toolkit. The key information was:

- Height of buildings (notably number of storeys for apartments)
- Mix of dwelling types (reflecting site characteristics, density of development and comparison with known dwelling mixes for recent planning permissions)

5.9 In addition, estimates were provided for each case study for market sale prices (reflecting the location of the size of site in consideration). These are bespoke estimates and differ from the average values used for the analysis of the 1 ha tile. Similarly specific costs per m² for each location and building type were assessed, which

again differ from the averages assumed for the 1 ha tile tests. Full details of these assumptions are provided at Appendix 12.

- 5.10 All other assumptions were the same as used for the 1 ha tile, based on compliance with the existing London Plan standards. This includes dwelling sizes (and % assumed for circulation space, ceiling heights and other standards) and other development costs (including developer return, professional fees and finance costs). Full details of the assumptions used are found in Appendices 5,6 and 7.
- 5.11 In each case, unless otherwise stated as part of the testing, affordable housing was included at the target levels for each borough. NB: Only two of the 8 test boroughs have an average affordable housing delivery level across last three years (2010/11, 11/12 and 12/13) that is less than their target rate, these are Newham and Tower Hamlets.
- 5.12 A series of residual values were assessed for each case study as follows:
- Baseline Appraisal: using the nationally described space standards as for the 1 ha tile testing
 - Testing the impact of Optional Requirement M4(2) – This applied to case study 1, and was tested on the assumption that the scheme includes two 3 storey blocks, one with 8 units per floor, one with 4 units per floor. The additional costs of provision of 1 lift per block were tested. In addition, it was then assumed that if the site were very constrained, the inclusion of lifts could impact on the mix, therefore in each case a 2 bed unit was replaced with a 1 bed unit on each floor of each block, and the impact of this on viability assessed.
 - Testing the impact of the move to zero carbon homes – each scheme type was assessed using the baseline viability appraisal which reflects the existing London Plan requirement to achieve a 35% improvement on Building Regulations Part L 2013. The testing firstly considered the ability to provide on-site carbon reduction measures, and assessed the additional costs this would represent. Any further carbon reduction then required to achieve zero carbon was addressed through offset payments calculated at £60 per tonne of carbon over a 30 year period. The total additional costs involved were then applied to the appraisals to test the impact on viability in each location. Full details of the assumptions used are set out at Appendix 13
 - Each test was assessed against the following Benchmark Land Value table:

Table 5.2 Benchmark land values for Case Studies

Benchmark land values £millions	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets
Highest (e.g. Good quality secondary offices)	1.5	5	4.4	14.31	7.595	17.37	18	15.4
Medium high (e.g. lower quality secondary offices/higher other employment)	1.5	5	1.6	8.16	3.94	10.98	12	10.01
Medium low (e.g. industry)	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
Low (e.g. other less commercial uses, community use)	1.5	2	1.6	2.24	1.975	2.24	3	2.99

Table 5.2 shows the benchmark value to be achieved for a range of alternative uses in each location. As for the 1 ha tile tests, the benchmark land values are derived from the CIL viability testing and include an incentive to ensure sale for development (see paragraph 3.14). It should be noted that some of the scheme types tested are more likely to occur in specific locations and land use bands rather than across all locations and all existing uses – this will impact on the overall viability of the scheme in the different locations. This is commented on in the review of the outcomes from paragraph 5.15 below. For each scheme type, the tables shows the residual land value (RLV) assessed against each benchmark value – green boxes indicate the benchmark has been reached or exceeded, pink boxes indicate where the benchmark has not been reached.

5.13 As for the 1 ha tile tests, a series of sensitivity tests were carried out, as set out below

- No house price growth with 5% build cost inflation
- No house price growth with 8% build cost inflation
- -0.5% house price growth with 8% build cost inflation (worst case scenario)
- Where relevant, we have also tested 3% house price growth with 8% build cost inflation
- Average levels of affordable housing delivered rather than target levels of affordable housing are tested for relevant locations where this may have an impact on overall viability outcomes
- Availability of grant at £30,000 per affordable home is tested for Brent and Hounslow in scheme type 3.

5.14 A summary of the results of the testing is set out below. The residual values generated for each scenario are compared with benchmark land values set out in Table 5.2 above.

Scheme Type 1

5.15 This assesses the impact of the standards on a small site accommodating a mixture of low rise low density flatted and housing development. This scheme test is based on a vacant site. It is therefore unlikely that such a development proposal would realistically come forward on a site with a high existing use value, or in a very high value area where a much higher density is likely to be sought by developers. This case study is therefore most suitable to the lower value less central test locations such as Barking & Dagenham, Brent, Croydon and parts of Newham and Hounslow. The baseline results for scheme type 1 case studies are as follows:

Table 5.3 Scheme Type 1 Baseline case study outcomes

Residual land values									
Test Borough	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha	£ 5,556,000	£ 6,322,028	£ 9,873,000	£ 26,284,000	£ 5,872,000	£ 9,599,000	£ 22,652,000	£ 21,703,000	
With lift access	£ 5,359,000	£ 6,104,000	£ 9,676,000	£ 26,079,000	£ 5,680,000	£ 9,408,000	£ 22,449,000	£ 21,511,000	
Percentage of baseline	96%	97%	98%	99%	97%	98%	99%	99%	
Lifts plus loss of 1 x2 bed for 1 x 1	£ 5,173,000	£ 6,094,000	£ 9,475,000	£ 25,591,000	£ 5,760,000	£ 9,184,000	£ 21,879,000	£ 20,707,000	
Percentage of baseline	93%	96%	96%	97%	98%	96%	97%	95%	
Lifts plus carbon	£ 5,051,000	£ 5,796,000	£ 9,364,000	£ 25,775,000	£ 5,357,000	£ 9,097,000	£ 22,141,000	£ 21,201,000	
Percentage of baseline	91%	92%	95%	98%	91%	95%	98%	98%	
Lifts plus unit impact plus carbon	£ 4,864,000	£ 5,785,000	£ 9,161,000	£ 25,287,000	£ 5,442,000	£ 8,878,000	£ 21,576,000	£ 20,399,000	
Percentage of baseline	88%	92%	93%	96%	93%	92%	95%	94%	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.16 All locations are viable for the two lower benchmark values, Newham fails to achieve the two higher levels and Hounslow fails to achieve the highest level. This reflects in part that the higher value areas of these boroughs are unlikely to support a development of this nature and relatively low density. The table also shows the impact of the standards and the move to zero carbon homes in terms of cumulative percentage impact on residual land value. It can be seen that this has no overall impact on viability. This is set out in more detail below:

Impact of optional access requirements M4(2)

5.17 The application of the cost of two lifts, one in each 3 storey block, had a minor negative impact on the RLV, but this was of insufficient magnitude to make a difference to the overall viability assessment. The analysis of a more major impact in which, say for a very constrained site offering similar low rise flatted development, a two bedroomed unit had to be converted to a one bedroomed unit on each floor of each block also had no impact on the overall viability outcome, as the locations and spread of viability across the four benchmark land values remained the same. Table 5.4 sets out the number and percent of boroughs that reach each of the four benchmark land values

Table 5.4 Scheme Type 1 M4(2) test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	6	75%
Medium high	7	88%
Medium low	8	100%
Low	8	100%

- 5.18 For Newham, if the average level of affordable housing provision of 43% (based on 2010-2013) is applied rather than the target of 50%, the overall picture remains the same, as this does not raise the RLV above the second benchmark land value.
- 5.19 An issue raised at the consultation stage in respect of the provision of lifts in lower rise development is the impact on ongoing management and maintenance costs, and the impact related increases in service charges could have on affordability. Based on evidence provided by Gardiner and Theobald Cost Consultants an indicative lifecycle cost for a lift for a low rise residential development would be in the order of cost of £120,000 over a period of around 25 years. This represents an annual present cost in the order of £4,800 per lift, which for the smallest block in the tile test assumptions (which accommodates 12 flats) would be an additional service charge of £400 per annum or £33 per calendar month. For the larger block the amount could be half of this as there are twice as many units per floor (while still ensuring no more than 8 units per core on each floor as set out in the housing SPG).
- 5.20 Whilst prospective tenants and purchasers will consider overall service charges in their decision making process, a sum of £33 per calendar month (less than £1 per sq ft per annum for the smallest 1 bed roomed flat) is in our opinion unlikely to be a significant determining factor for market units. There remains however a concern that this could impact on the lettability of affordable units, particularly in low value areas. Therefore, the GLA may want to explore if some flexibility should be provided when applying this standard in particular circumstances where it may lead to an unrealistic service charge.

Impact of the move to zero carbon homes

- 5.21 In addition to the costs associated with the access requirements the additional costs of moving to zero carbon homes was tested, as described at paragraph 5.12 above
- 5.22 **For scheme type 1, the impact of the additional build costs and carbon offset payments made no impact on the overall viability outcome. The total maximum cost impact for scheme type 1 locations amounts to some 2.17% of base build costs.** In summary, the overall viability outcome of testing the impact of the housing standards on scheme type 1 is as follows:

Table 5.5 Scheme Type 1 cumulative M4(2) plus Zero Carbon test
 Case Study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	6	75%
Medium high	7	88%
Medium low	8	100%
low	8	100%

Sensitivity analysis

5.23 Sensitivity analysis was then carried out to the Scheme Type 1 case studies to assess the impact on viability of a 5% and 8% rise in build costs, and a 0.5% reduction in sales values. For each sensitivity test, and cumulatively, the overall outcome was as follows:

Table 5.6 Scheme Type 1 Cumulative standards testing and
 Sensitivity analysis case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	5	63%
Medium high	6	75%
Medium low	8	100%
low	8	100%

5.24 This indicates that for the locations tested, Scheme Type 1 is robustly viable at the two lowest benchmark land values, and viable in the majority of locations at the upper benchmark land values. As commented on at 5.15 above, this is based on a scheme promoted on a small vacant site, and is unlikely to be proposed on a site with a high existing use value.

5.25 The application of the standards had no discernible impact on viability, but the sensitivity testing indicated an impact at the two upper levels. Full details of the scheme type 1 Case Study results are set out at Appendix 14.

Scheme Type 2

5.26 This assesses the impact of the standards on a small high density higher rise flatted development of circa 12 storeys. This is based on an existing employment (warehousing) site. The baseline results for scheme type 2 are as follows:

Table 5.7 Scheme Type 2 baseline case study outcomes

Residual land values		Baseline							
Test Borough		Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets
£/ha		£ 1,258,000	£ 18,397,000	£ 16,606,000	£ 12,362,000	£ 9,388,000	£ 19,032,000	£ 45,804,000	£ 96,955,000
Benchmark	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
Land Values	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
£ millions	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.27 This indicates that all locations are viable for all benchmark values other than Greenwich, which is not viable at the highest benchmark value, and Barking and Dagenham. This reflects the findings of the SHLAA viability assessment, where the viability challenges of delivering higher rise development in Barking and Dagenham were also evident. It also reflects that the market in Barking and Dagenham is as yet unlikely to support such high density high rise development as the additional costs associated with going up are not adequately compensated for by sufficiently strong sales values. This may well change over time.

5.28 To reflect market norms, and the demand for car parking spaces, we have added in the likely need for the site to accommodate underground car parking. This has been allowed at 0.5 spaces per unit, at an estimated cost of £25,000 per space. We have not however assumed any additional value for the sale of these spaces, which in reality in many locations may well cover or exceed their costs. It should also be noted that there is no requirement in the London Plan for any parking to be provided as part of such a scheme, and that other cheaper parking options such as undercroft parking or in lower density locations on-plot parking may also be relevant to individual cases. This therefore reflects a worst case scenario. The impact of the additional costs on viability is as follows:

Table 5.8 Scheme Type 2 baseline case study outcomes including the costs of underground car parking

Residual land values		Baseline With underground car parking							
Test Borough		Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets
£/ha		£ 10,322,000	£ 9,702,000	£ 7,945,000	£ 3,624,000	£ 569,517	£ 10,387,000	£ 37,244,000	£ 88,394,000
Percentage of baseline		-821%	53%	48%	29%	6%	55%	81%	91%
Benchmark	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
Land Values	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
£ millions	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.29 This demonstrates that the inclusion of underground car parking costs impacts viability in Greenwich, Hounslow and Newham locations, but otherwise has insufficient impact to reduce overall prospects for development delivery. It also helps demonstrate the small impact on RLV the application of the new standards have compared to including measures such as underground parking, which is very rarely a planning requirement. For Newham, this was further tested at its average affordable housing level rather than its target. The outcome of this sub-test was that the second highest land value benchmark indicated viability.

Impact of the move to zero carbon homes

5.30 For Scheme Type 2 (as for Scheme Type 1 above), the impact of the additional build costs and carbon offset payments on the case studies made **no impact on the overall viability outcome**. The total maximum cost impact for scheme type 2 case study locations amounts to less than an additional 1.5% of base build costs (excluding on-costs). In summary, the overall viability outcome of testing the impact of the housing standards on Scheme Type 2 in the case study locations is as follows:

Table 5.9 Scheme type 2 Impact of the housing standards and move to zero carbon homes

Residual land values		Baseline with carbon costs/offsets							
Test Borough	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha	Not viable	£ 17,224,000	£ 15,447,000	£ 11,201,000	£ 8,217,000	£ 17,816,000	£ 44,588,000	£ 95,768,000	
Percentage of baseline	Not viable	94%	93%	91%	88%	94%	97%	99%	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

Table 5.10 Scheme Type 2 Baseline plus carbon costs test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	6	75%
Medium high	7	88%
Medium low	7	88%
low	7	88%

5.31 The impact in conjunction with the costs of underground car parking was as follows:

Table 5.11 Scheme Type 2 Impact of changes in conjunction with underground car parking

Residual land values		With underground car parking and carbon costs/offsets							
Test Borough	Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha	Not viable	£ 8,503,000	£ 6,739,000	£ 2,406,000	-£ 662,324	£ 9,143,000	£ 36,021,000	£ 87,212,000	
Percentage of baseline	Not viable	49%	44%	21%	-8%	51%	81%	91%	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

Table 5.12 Scheme Type 2 underground car parking costs plus carbon costs test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	4	50%
Medium high	4	50%
Medium low	5	63%
low	6	63%

This indicates that the costs of providing underground car parking have a significant impact on the overall outcome, whereas, the addition of standards and the move to zero carbon homes has no impact on overall viability. As mentioned above, inclusion of parking provision is rarely a planning requirement (apart from for wheelchair users) and underground parking is only viable in higher value areas.

Sensitivity analysis

5.32 The sensitivity of the Scheme Type 2 case studies (including underground parking) was then tested against cost and value sensitivity, reflecting potential market changes. The outcomes were as follows:

Table 5.13 Scheme type 2 (all costs) 5% increase in build costs sensitivity test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	2	25%
Medium high	2	25%
Medium low	4	50%
low	4	50%

(NB includes underground car parking costs plus standards testing)

Table 5.14 Scheme type 2 (all costs) 8% increase in build costs, and 8% increase in build costs plus 0.5% decrease in values sensitivity test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	2	25%
Medium high	2	25%
Medium low	2	25%
low	2	25%

(NB includes underground car parking costs plus standards testing)

5.33 This indicates that this development scenario becomes much less viable across the majority of locations if there are significant negative changes to the wider economy for housebuilding. Of the 8 case study locations, only Southwark and Tower Hamlets continued to demonstrate viability at full target affordable levels. If a more positive view of value growth is paired with the 8% rise in build costs assumption the outcome improves as follows:

Table 5.15 Scheme Type 2 (all costs) 8% increase in build costs + 3% increase in sales values sensitivity analysis case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	4	50%
Medium high	4	50%
Medium low	5	63%
low	5	63%

(NB includes underground car parking costs plus standards testing)

5.34 Clearly, this will vary from location to location, but as market commentary suggests that values will continue to rise at a faster rate than costs (see paragraph 3.70) it is likely that viability will be maintained. Again, it is worth noting that this scheme type is based on a site in existing employment use, and therefore the most relevant benchmark land values to use to establish overall viability for this type of development are the two lower bands. Full details of the case study results for Scheme Type 2 are provided at Appendix 15

Scheme Type 3

5.35 This assesses the impact of the standards on a larger (1.59ha) high density flatted development of up to 11 storeys. This scheme type is based on a part industrial, part vacant site. The baseline results for the Scheme Type 3 case studies are as follows:

Table 5.16 Scheme Type 3 baseline case study outcomes

Residual land values		Baseline							
Test Borough		Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets
£/ha		-£ 5,807,000	£ 4,031,000	£ 6,468,000	£ 6,089,000	-£ 545,000	£ 5,539,000	£ 36,776,000	£ 30,671,000
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
Values £ millions	Medium Low	1.5	2.5	1.6	3.75	2.65	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.36 This indicates that this configuration of scheme and density is not viable in the locations tested in Barking and Dagenham and Hounslow. As for scheme type 2, such high density and high rise development will only be promoted in locations demonstrating sufficient value to support the additional costs associated with higher rise. Barking and

Dagenham is currently the least likely location where such development would be likely to take place. The other test locations are based on actual sites of a similar size. This is a relatively large site size for London, and is therefore more likely to arise outside central locations, but not in all cases for this indicative configuration.

5.37 Overall, it indicates viability in 6 out of the 8 boroughs at the two lower benchmark values, and 3 out of the 8 boroughs at the higher benchmark values. Overall, viability is indicated in 18 of the possible 32 outcomes, i.e. in 56% of cases. The site on which this proposal is based in an industrial/part vacant site, which would fall into the third benchmark level. At this level, the indicative scheme indicates viability in 6 out of 8 locations, i.e. in 75% of instances. It is also worth noting that in the actual location on which the site is based is in one of the higher value boroughs. The fact that it indicates viability for 75% of the case studies at the relevant benchmark value therefore indicates a relatively robust viability outcome.

5.38 For Newham, the impact of reducing the 50% target affordable level to the 43% achieved level of affordable housing was also tested. This did not impact on the overall outcome of the baseline assessment, as the first and second benchmark land values continued to indicate non-viability in Newham.

5.39 As for scheme type 2 above, scheme type 3 was also tested on the assumption that at least part of the parking provision would be provided underground. It is assumed that 25% of the parking requirement can be met at ground level, with 75% accommodated below ground at 0.5 spaces per unit at a cost of £25,000 per space. Again, to demonstrate a worst case in terms of viability, no additional value from the car parking has been included. The outcome of this test is as follows:

Table 5.17 Scheme Type 3 baseline with underground car parking costs case study outcomes

Residual land values		With underground car parking							
Test Borough	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha	Not relevant	£ 787,195	£ 3,242,000	£ 2,947,000	Not relevant	£ 2,391,000	£ 33,634,000	£ 27,529,000	
Percentage of baseline	Not relevant	20%	50%	48%	Not relevant	43%	91%	90%	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.40 On these assumptions, the indicative scheme indicates viability in 3 out of 8 case studies at the third benchmark level of value, i.e. 37.5% of cases, and overall in 13 out of 32 cases, i.e. 41% of cases. When the average percentage affordable housing delivered over the last three years of 43% was applied to Newham, viability was indicated at the third level of benchmark land value, improving overall viability at this level to 50%.

5.41 For this scheme type, the impact of the availability of grant for boroughs failing to reach the lowest viability benchmark was also explored. This was applied to Brent and Hounslow. The outcome of the case studies when grant was applied to the assumed scheme (including the underground car parking) was as follows:

Table 5.18 Scheme Type 3 with underground car parking costs, outcome of Brent and Hounslow case studies with grant, and Newham at average affordable housing levels

Test Borough	Newham average affordable	Brent with Grant	Hounslow with grant
RLV	£ 4,907,000	£ 5,864,000	£ 338,146
% of baseline	89%	145%	Gone positive
Benchmark Land Values £ millions	17.37	5	7.595
	10.98	5	3.94
	3.31	2.5	2.55
	2.24	2	1.975

5.42 This adds a further 6 case studies where viability is demonstrated, bringing the total to 19 out of a possible 32 case studies indicating viability, which (if this grant were to be available) represents some 59% of cases.

Impact of the move to zero carbon homes

5.43 The move to zero carbon homes was tested against the baseline position with and without the inclusion of the costs of providing underground car parking. **For scheme Type 3 (as for Scheme Types 1 and 2 above), the impact of the additional build costs and carbon offset payments on the baseline case studies without underground car parking made no impact on the overall viability outcome.** The total maximum cost impact for scheme type 3 case study locations amounts to less than an additional 1.4% of base build costs. In summary, the overall viability outcome of testing the impact of the housing standards on case study 3 is as follows:

Table 5.19 Scheme Type 3 Overall impact of housing standards and move to zero carbon homes

Residual land values		Baseline with carbon costs and offsets							
Test Borough	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha	not viable	£ 3,356,000	£ 5,851,000	£ 5,443,000	Not viable	£ 4,891,000	£ 36,169,000	£ 30,031,000	
Percentage of baseline	not viable	83%	90%	89%	Not viable	88%	98%	98%	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

Table 5.20 Scheme Type 3 Carbon costs test Case study outcomes without underground car parking – no change to baseline

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	3	38%
Medium high	3	38%
Medium low	6	75%
Low	6	75%

Table 5.21 Scheme Type 3 Overall impact of housing standards and move to zero carbon homes with underground car parking

Residual land values	With underground car parking and carbon costs/offsets							
	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets
Test Borough								
£/ha	Not relevant	Not relevant	£ 2,649,000	£ 2,299,000	Not relevant	£ 1,744,000	£ 32,988,000	£ 26,869,000
Percentage of baseline	Not relevant	Not relevant	41%	38%	Not relevant	31%	90%	88%
Benchmark Land Values £ millions	Highest 1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High 1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low 1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low 1.5	2	1.6	2.24	1.975	2.24	3	2.99

Table 5.22 Scheme Type 3 Carbon costs test Case study outcomes with underground car parking:

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	2	25%
Medium high	3	38%
Medium low	3	38%
Low	4	38%

5.44 The cumulative impact of the car parking costs and the additional carbon costs was to reduce the viability to below lowest benchmark value for one borough – Newham. When tested at average affordable delivery levels of 43% rather than 50% for Newham there was no change to the “with car parking” baseline outcome.

Sensitivity analysis

Table 5.23 Scheme Type 3: 5% increase in build costs, 8% increase in build costs; and 8% increase in build cost with - 0.5% values sensitivity test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	2	25%
Medium high	2	25%
Medium low	2	25%
Low	2	25%

5.45 For all the sensitivity tests, only the two higher value case study locations, Southwark and Tower Hamlets, demonstrated viability across all benchmark values. As for scheme type 2 case studies above, as market commentary suggests that values will continue to rise at a faster rate than costs it is likely that baseline levels of viability for this type of development will be maintained. Full details of the Scheme Type 3 case study results are provided at Appendix 16.

Scheme Type 4

5.46 This assesses the impact of the standards on another larger (2ha) site but with an assumed low density mixed development of houses and flats in blocks of 5 storeys (therefore already providing lifts). Again, this type of site is more suited to an outer London location, and is more likely to be promoted in lower value areas. This is based on a site in existing commercial/industrial use. The baseline results for scheme type 4 are as follows:

Table 5.24 Scheme Type 4 Baseline case study outcomes

Residual land values		Baseline							
Test Borough		Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets
£/ha		£ 4,437,000	£ 5,868,000	£ 4,640,000	£ 8,869,000	£ 3,736,000	£ 7,028,000	£ 10,156,000	£ 15,894,000
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.47 This indicates viability at all viability benchmark levels for 4 of the 8 boroughs, and for all boroughs at the two lower levels. Overall, viability is indicated in 25 out of 32 possible case study outcomes, i.e. circa 78%. This example is based on a mixed commercial and industrial site that is likely to fall in the medium or medium low benchmark land value band. At the medium benchmark land value level, the assessment indicates viability for 5 of the 8 case study locations tested, for the lower medium level viability is indicated at all case study locations. It is worth noting that the

specific case study location being tested in Southwark indicates a much lower value performance than that demonstrated in earlier test cases. This shows the range of values that can exist across a borough depending on the actual location of the site, and how site specific viability in London can be.

5.48 Due to the lower density for this scheme type, the implication of underground car parking has not been tested.

Impact of the move to zero carbon homes

5.49 The case study outcomes when the cost of achieving zero carbon status were applied are as follows:

Table 5.25 Scheme Type 4 Carbon costs test Case study outcomes

Residual land values	With carbon offsets and costs to zero carbon								
	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
Baseline	£ 4,437,000	£ 5,868,000	£ 4,640,000	£ 8,869,000	£ 3,736,000	£ 7,028,000	£ 10,156,000	£ 15,894,000	
£/ha with carbon costs	£ 3,699,000	£ 5,596,000	£ 4,363,000	£ 8,599,000	£ 3,464,000	£ 6,745,000	£ 9,886,000	£ 15,621,000	
Percentage of baseline	83%	95%	94%	97%	93%	96%	97%	98%	
Benchmark Land Values	Highest 1.5	5	4.4	14.31	7.595	17.37	18	15.4	
£ millions	Medium High 1.5	5	1.6	8.16	3.94	10.98	12	10.01	
	Medium Low 1.5	2.5	1.6	3.75	2.55	3.31	6	5.3	
	Low 1.5	2	1.6	2.24	1.975	2.24	3	2.99	

5.50 For Scheme Type 4 case studies (as for scheme types 1, 2 and 3 above), the impact of the additional build costs and carbon offset payments on the baseline case studies made **no impact on the overall viability outcome**. The total maximum cost impact for scheme type 4 case study locations amounts to less than an additional 2.3% of base build costs.

In summary, the position is as follows:

Table 5.26 Scheme Type 4 Carbon cost test case study outcomes by benchmark land value band

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	4	50%
Medium high	5	63%
Medium low	8	100%
low	8	100%

Sensitivity analysis

Table 5.27 Scheme Type 4 (all costs) 5% build costs increase sensitivity test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	1	13%
Medium high	3	38%
Medium low	8	100%
low	8	100%

Table 5.28 Scheme Type 4 (all costs) 8% build costs increase; and 8% build cost increase plus 0.5% value decrease sensitivity test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	1	13%
Medium high	3	38%
Medium low	7	88%
low	8	100%

5.51 This indicates that the indicative scheme is robustly viable across all case study locations at lower benchmark land values, but is sensitive to cost changes where base land values are higher. As for the scheme types above, as market commentary suggests that values will continue to rise at a faster rate than costs it is likely that baseline levels of viability for this type of development will be maintained. Full details of Scheme Type 4 case study results are provided at Appendix 17.

Scheme Type 5

5.52 This assesses the impact of the standards on a very large (5.28ha) low density mixed development of houses and flats in blocks of 5 storeys. This is based on a site with an existing commercial use. Such a site is extremely unlikely in central higher existing use value areas, and would require fairly high sales values to justify a competitive land price per hectare if in direct competition with other uses. The baseline results for Scheme Type 5 are as follows:

Table 5.29 Scheme Type 5 Baseline case study outcomes

Residual land values		Baseline							
Test Borough	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha	£ 278,019	£ 3,180,000	£ 3,243,000	£ 6,495,000	£ 5,333,000	£ 4,528,000	£ 5,277,000	£ 7,815,000	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.53 The outcomes reflect that to accommodate a site of this size in London it is likely to be in a less developed lower value area. This is reflected in the specific locations selected for the case study tests, based as far as possible on comparable SHLAA sites for each test borough. The outcomes for this case study indicate viability that at the lowest benchmark value in 7 out of 8 of the case study boroughs, and at the third benchmark land value in 6 out of the 8 case study boroughs. At upper benchmark land values the position reflects the nature and likely location of such a site, and indicates viability in only two locations at the second highest levels, including Hounslow. None of the case study locations indicate viability at the highest level.

5.54 The density of Scheme Type 5 is only 75 dph. In the lowest value case study locations, (whilst in general low rise development is likely to be more viable) such low density as is indicated here might generate insufficient residual value to compete with existing use values per hectare based on averages across a borough. This is apparent in Barking and Dagenham. For the two lower benchmark land value bands the overall case study results represent just over 81% viability overall; for the two upper levels benchmark land value bands the result is only 12.5% viability.

Impact of the move to zero carbon homes

5.55 The outcomes when the cost of achieving zero carbon status are applied is as follows:

Table 5.30 Scheme Type 5 Carbon costs test Case study outcomes

RLV	Baseline with carbon costs and offsets								
Test Borough	Barking & Dagenham	Brent	Croydon	Greenwich	Hounslow	Newham	Southwark	Tower Hamlets	
£/ha Baseline	£ 278,019	£ 3,180,000	£ 3,243,000	£ 6,495,000	£ 5,333,000	£ 4,528,000	£ 5,277,000	£ 7,815,000	
£/ha with carbon costs	Not viable	£ 3,049,000	£ 3,114,000	£ 6,364,000	£ 5,202,000	£ 4,397,000	£ 5,147,000	£ 7,684,000	
Percentage of baseline	Not viable	96%	96%	98%	98%	97%	98%	98%	
Benchmark Land Values £ millions	Highest	1.5	5	4.4	14.31	7.595	17.37	18	15.4
	Medium High	1.5	5	1.6	8.16	3.94	10.98	12	10.01
	Medium Low	1.5	2.5	1.6	3.75	2.55	3.31	6	5.3
	Low	1.5	2	1.6	2.24	1.975	2.24	3	2.99

5.56 For Scheme Type 5 case studies (as for scheme types 1, 2, 3 and 4 above), the impact of the additional build costs and carbon offset payments on the case study baseline made **no impact on the overall viability outcome**. The total maximum cost impact for Scheme Type 5 case study locations amounts to less than an additional 1.6% of base build costs.

In summary, the position is as follows:

Table 5.31 Scheme Type 5 Carbon costs test Case study outcomes by benchmark land value band

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	0	0%
Medium high	2	25%
Medium low	6	75%
Low	7	88%

Sensitivity analysis

Table 5.32 Scheme Type 5 (all costs) 5 % build cost increase; 8% build costs increase; and 8% build cost increase plus 0.5% value decrease sensitivity test case study outcomes

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	0	0%
Medium high	2	25%
Medium low	5	63%
Low	7	88%

5.57 For all negative impact sensitivity tests, the outcome was that one case study borough became unviable at the medium low level of benchmark land value, however Scheme Type 5 remained relatively robust across the vast majority of case study locations at the lowest level. As for the Scheme Types above, as market commentary suggests that values will continue to rise at a faster rate than costs it is likely that baseline case study levels of viability for this type of development will be maintained. It is also, in our opinion, unlikely that a scheme of such low density as this will be proposed in London other than in a lower value area where appropriately priced land would be available. Full details of Scheme Type 5 case study results are provided at Appendix 18.

Scheme Type 6

5.58 This assesses the impact of the standards on a very high density very high rise development of flats at 45 storeys. This is based on a site located in Tower Hamlets. This has only been case study tested in Greenwich, Southwark and Tower Hamlets, as it is considered unlikely that a development of such height would realistically be proposed in an outer London location, and if it were, it would only be proposed if it

demonstrated viability. The baseline results for Scheme Type 6 case study locations are as follows:

Table 5.33 Scheme Type 6 Baseline case study outcomes

Residual land values				
Test Borough		Greenwich	Southwark	Tower Hamlets
£/ha Baseline		-£ 46,096,000	£ 9,445,450	£ 11,066,102
Benchmark Land Values £ millions	Highest	14.31	18	15.4
	Medium High	8.16	12	10.01
	Medium Low	3.75	6	5.3
	Low	2.24	3	2.99

5.59 This indicates viability in 5 out of the 12 possible case studies (almost 42%). The locations tested for Greenwich does not indicate viability for this form of development at all. Of the remaining two locations, Southwark and Tower Hamlets, viability is indicated in 5 out of 8 possible cases, over 62%.

5.60 Such high density development is particularly sensitive to the values in a specific location. The location tested in Greenwich is not in a very high value part of the Borough. The indicative test location is in Woolwich. If an alternative location in Greenwich were tested, closer to the National Maritime Museum area as adopted for Scheme Type 1, then the position would have been as follows:

Table 5.34 Scheme Type 6 Baseline case study outcomes for alternative Greenwich location

		Greenwich SE10
RLV		£ 8,588,000
% of baseline		Greenwich SE10
Benchmark Land Values £ millions	Highest	14.31
	Medium High	8.16
	Medium Low	3.75
	Low	2.24

5.61 It should also be noted that the use of the GLA toolkit does not readily allow for the fine grain variation in value at different floors, so the average values adopted based on local evidence do not reflect the additional value that can be achieved from the sale of penthouse units with views across London and the Thames. The additional costs of a premium penthouse product are also excluded.

5.62 As for the other high density/higher rise developments, we have tested the impact of the costs of providing some underground car parking. For this Scheme Type we have assumed a lower provision of only 0.25 spaces per unit, reflecting the very high density of the development. Again, no allowance has been made for the value of these spaces, which could be significantly in excess of their costs in high value central London locations. As before, no such requirement is included in the London Plan. The cost impact of the car parking is as follows:

Table 5.35 Scheme Type 6 Baseline case study outcomes with underground car parking costs

Residual land values									
Test Borough	Greenwich	Southwark	Tower Hamlets					Greenwich SE10	
£/ha	Not viable	£ 5,808,000	£ 7,428,000			RLV		£ 4,980,000	
Percentage of baseline	Not viable	61%	67%			% of baseline		58%	
Benchmark Land Values £ millions	Highest	14.31	18	15.4			Benchmark Land Values £ millions	14.31	
	Medium High	8.16	12	10.01	Viable	3		25%	8.16
	Medium Low	3.75	6	5.3	Unviable	9		75%	3.75
	Low	2.24	3	2.99				2.24	

5.63 This demonstrates that in the locations tested, the significant additional costs of providing underground car parking impact on the viability of the case studies at the upper levels of benchmark land value.

Impact of the move to zero carbon homes

5.64 The outcome when the cost of achieving zero carbon status were applied to the baseline is as follows:

Table 5.36 Scheme Type 6 Zero Carbon costs test case study outcomes

Residual land values							
Test Borough	Greenwich	Southwark	Tower Hamlets				
£/ha	Not viable	£ 8,468,000	£ 10,033,000				
Percentage of baseline	Not viable	90%	91%				
Benchmark Land Values £ millions	Highest	14.31	18	15.4			
	Medium High	8.16	12	10.01			
	Medium Low	3.75	6	5.3			
	Low	2.24	3	2.99			

5.65 For Scheme Type 6 (as for Scheme Types 1, 2, 3, 4 and 5 above), the impact of the additional build costs and carbon offset payments on the baseline case studies made **no impact on the overall viability outcome**. The total maximum cost impact for Scheme Type 6 case study locations amounts to less than an additional 0.8% of base build costs.

5.66 When tested against the variant case study location in Greenwich, the impact was as follows:

Table 5.37 Scheme Type 6 Baseline case study outcomes Zero Carbon costs for alternative Greenwich location

		Greenwich SE10
RLV		£ 7,552,000
% of baseline		88%
Benchmark Land Values £ millions	Highest	14.31
	Medium High	8.16
	Medium Low	3.75
	Low	2.24

In this instance the additional 0.8% build costs was enough to trip one case study from marginal viability into a marginally unviable position for the second highest benchmark land value band.

5.67 In summary, the overall position is as follows:

Table 5.38 Scheme Type 6 Carbon costs test Case study outcomes by benchmark land value band

Benchmark Land Values	No. of Boroughs Viable	% Viable
Highest	0	0%
Medium high	1	25%
Medium low	3	75%
low	3	75%

Sensitivity analysis

5.68 For all the sensitivity assessments that have a negative impact (Increased costs, reduced value), and for the test allowing for an 8% increase in costs balanced by a positive 3% improvement in values, none of the case study locations indicated viability at any benchmark value for Scheme Type 6. This demonstrates the sensitivity to additional costs of high rise development where there is a larger proportion of the floor space given over to common areas.

5.69 However, as for the Scheme Types above, as market commentary suggests that values will continue to rise at a faster rate than costs it is likely that baseline levels of viability for this type of development will be maintained. It is also our opinion that such high rise development will only be promoted in locations where strong viability can be demonstrated, therefore the sub 1% impact on costs of the move to zero carbon will not

be the determining factor that will influence overall delivery. Full details of the Scheme Type 6 case study results are provided at Appendix 19.

Key outcomes from the Scheme Type based case study tests

- 5.70 The Scheme Type based case studies have indicated that both the optional M4(2) access requirements and the move to zero carbon homes have very little impact on the potential deliverability of housing, and associated affordable housing development across the test locations. For Scheme Type 1, the total cost impact of the housing standards represented below 4% of base build costs, and so would represent a lower percentage of total build costs including fees, finance and other on-costs. None of the results would be improved upon if the national space standards were not applied, as the existing London Plan standards are marginally more onerous.
- 5.71 For the remaining Scheme Types, where development was of a configuration that would already be required to include lifts, the cost impact of the on-site carbon reduction measures and the balancing carbon offset payments amounted to between 0.8% and 1.5% of base build costs. This is insufficient in isolation to be a determinant of viability, and falls well within the contingency included at the planning stage for development of the types considered in the testing.
- 5.72 Key factors influencing viability were found to be:
- House prices (which can vary considerably at local level)
 - Very high density/high rise development – where apartment blocks above 11 storeys have a step change in build costs and also an increase in non-saleable floor space – both of which reduce RLV.
 - Very low density, where the limited amount of saleable floor space provided per hectare results in a residual land value that has a lesser prospect of exceeding existing/alternative use values.
 - Cost sensitivity to significant cost increases (i.e. over 5%), particularly in higher rise blocks.

A full detailed analysis of all the Scheme Type case study results is provided at Appendix 20.

6.0 CONCLUSIONS

6.1 The viability assessment has demonstrated the following findings:

- Consultation with the market indicated that
 - The nationally prescribed space standards were considered to have no significant impact on demand, supply, sales, build costs and housing delivery programmes.
 - The optional water requirement was considered to have no significant impact on demand, supply, sales, build costs and housing delivery programmes.
 - The optional step free access requirement M4(2) was considered to have a negative impact on small low rise flatted development.
- The 1 ha tile testing outcomes indicated that
 - The nationally describes space standards do not represent a threat to the viability of housing delivery across London
 - The impact of the optional step free access requirement M4(2) is minimal, and is insufficient to be considered a challenge to the overall viability of housing delivery across London
 - The cumulative impact of the optional step free access requirement M4(2) and the move to zero carbon homes on the deliverability and viability of housing development affects the viability of fewer than 5% of the test outcomes, which is insufficient to be considered to challenge the overall viability of housing delivery across London
- The sensitivity testing of a pessimistic down turn in market conditions against the test outcomes had insufficient impact to challenge the overall viability of housing delivery across London. All market indicators suggest that price increases will continue to outpace cost increases for the foreseeable future, rendering the sensitivity assumptions unlikely to arise.
- The outcomes of the case studies, based on 6 scheme types, indicated that
 - There was no discernible impact on viability as a result of the application of the optional step free access requirements of M4(2) to a low rise flatted

scheme type which has not previously been required to provide step free access.

- There was no significant impact on overall viability of the application of a move to zero carbon homes on any of the scheme types tested

6.2 The conclusion drawn from the study is therefore that the introduction of the new Housing Standards, and the move to zero carbon homes in 2016, do not represent a significant determinant in the viability and the deliverability of housing development in London.