Greater London Authority

London Plan Viability Study

Addendum Report

November 2018

Three Dragons

Turner & Townsend

Housing Futures Ltd

Contents

Executive Summary

1. This Addendum Report provides further information about the viability of development in London and supplements the London Plan Viability Study (LPVS). It has the following specific purposes:

    - Review market changes since 2017
    - Consider impacts of proposed Minor Suggested Changes to the London Plan
    - Consider consultation comments on the London Plan on grounds of viability and provide further information on the testing approach where appropriate and available.
    - Provide further viability testing of additional site types which were not tested in the 2017 LPVS
    - Provide additional sensitivity testing to that which was undertaken in the LPVS, both for a selection of the 2017 case study sites and a selection of the additional sites

<u>Changes in Market Values and Build Costs</u>

2. New build house prices have generally continued to rise in London, particularly in the lower value parts of the city. While forecasts of future values have weakened, they also suggest that prices will continue to increase even if there are shorter term fluctuations.

3. The picture for commercial values is varied – office and retail values have remained static while values for logistics and industrial spaces are rising.

4. Since the LPVS, the build cost information service (BCIS) report a minor reduction in construction costs. Factors that may influence costs in the future include potential labour shortages and supply chain issues.

<u>London Plan Minor Suggested Changes Viability Impacts</u>

5. The Minor Suggested Changes include a number of policy amendments that may improve viability, as well as some that provide further clarity about how policies may be implemented. The changes should not have a significant adverse impact on viability.

<u>Additional Typology and Sensitivity Viability Tests</u>

6. New small sites (1-12 dwellings) and large site typologies (large scale mixed use, estate regeneration and retail sites) have been tested. Sensitivity tests were undertaken in relation to development programme, alternative market and affordable housing values, ground rents, build costs and urban greening, CIL, finance costs and developer returns. Additional tests were undertaken in relation to energy costs (heat pumps), additional abnormal costs, grant support for affordable housing and to explore the impact of future changes in values and costs.

7. This testing found that while there is some variation according to development type and values, the additional typologies were viable in most cases. When sensitivity tests were applied to these typologies and a sample of the LPVS case studies, the combination of

changes in the main sensitivity tests make relatively little difference to the overall LPVS viability findings. Although in some cases the sensitivity tests reduce viability slightly, the overall conclusions remain the same – that the proposed policies for development in the draft London Plan are viable, and that this includes some variation in circumstances and values. Where typologies are tested on the basis of projected values and costs, viability is generally strengthened.

Conclusion

8. The LPVS found that most development types can meet the policy requirements of the Draft London Plan. While some individual schemes may face viability challenges the plan allows for consideration of site-specific issues where these present genuine barriers to delivery. The plan also recognises that boroughs may bring forward policies to achieve the aims of the plan in a way that takes into account local circumstances. This will enable boroughs to respond to local market conditions when developing Local Plans which will also support delivery of the plan.

9. Taking into account the market review, the minor suggested changes to the plan and additional testing set out in the Addendum Report, it is considered that the cumulative costs of the policies of the plan would not threaten the viability of development and put implementation of the plan at serious risk.

1. INTRODUCTION

Purpose of the report

1.1 The London Plan Viability Study (LPVS) was published as part of the evidence base for the Draft London Plan in December 2017. This was undertaken to assess the viability of development sites across London, to examine the cumulative impact of proposed policies and standards, and to provide strategic understanding of viability based on market trends. This Addendum to the Study provides additional information to be considered alongside the LPVS[1]. It has the following purposes:

- Review any market changes since costs and values used in the 2017 Study were collected;
- Consider any impact on development viability of proposed Minor Suggested Changes to the Plan being put forward by the GLA following consultation on the Draft Plan[2];
- Provide further testing of additional site types which were not tested in the 2017 LPVS. This section of the report identifies the assumptions used for the testing then sets out findings of the testing;
- Provide additional sensitivity testing to that which was undertaken in 2017, both for a selection of the 2017 typologies and a selection of the additional sites, tested for the first time in this report. As with the previous section, the testing assumptions and results of the testing are provided.

1.2 Consultation comments received by the GLA on the draft London Plan, in relation to the LPVS were summarised together with responses to the comments in a schedule which was published as part of the Evidence Base in July 2018[3]. Responses in the schedule are not repeated in this report, however, further information on the testing approach is provided where appropriate and available.

1.3 The report is structured around these objectives. Together with the LPVS, the Addendum report assists in addressing Matter 95 set out by the Examination Panel in September 2018 i.e.:

> *"Would the cumulative cost of the policy requirements set out in the Plan, along with any other national and local requirements, threaten the economic viability of development and put implementation of the Plan at serious risk?"*[4]

[1] See https://www.london.gov.uk/sites/default/files/london_plan_viability_study_dec_2017.pdf, and https://www.london.gov.uk/sites/default/files/london_plan_viability_study_technical_report_dec_2017.pdf

[2] See https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/download-draft-london-plan-0

[3] See https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/examination-public-draft-new-london-plan/eip-library

[4] Matters for Consideration at the Examination in Public, Annex 1, September 2018 https://www.london.gov.uk/sites/default/files/lp_panel_note_no.3_-_annex_1_matters_final2.pdf

2. MARKET COSTS AND VALUES UPDATE

Purpose of market update

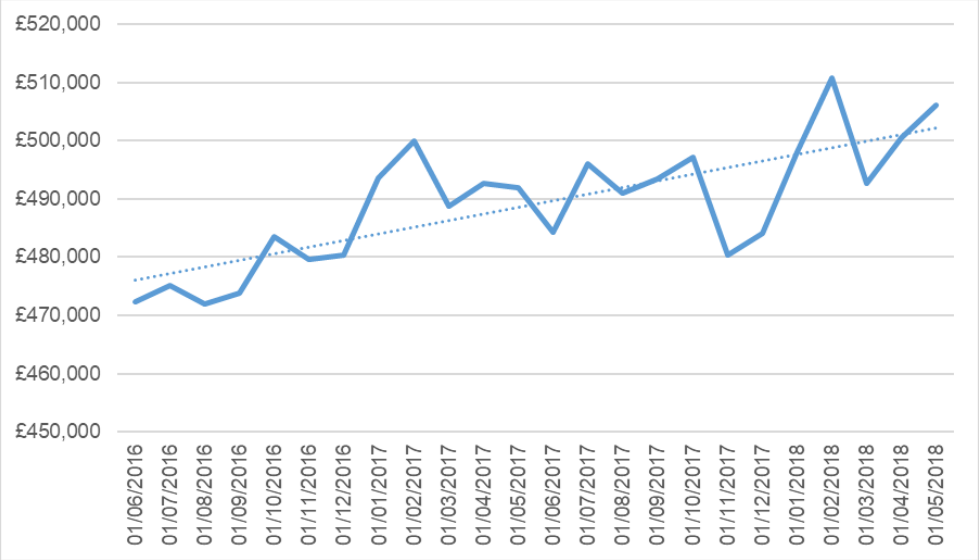
2.1 Development values and costs have been reviewed to assess whether there had been any material changes since the LPVS was prepared.

Market Housing Values

2.2 The housing for sale values in the 2017 LPVS were derived from Land Registry data on the price paid for new build dwellings from 2015 and 2016 indexed to end June 2017. As part of this exercise five value bands were identified as broadly representative, although within these there will be localised higher and lower values.

2.3 The graph below shows average new build dwelling prices since 2016 and the continued increase in values, albeit with some month-on-month fluctuations which probably relate to the location and types of schemes coming to market at that time.

Figure 2.1: Average New-build Dwelling Prices in London 2016-2018



Source: ONS HPI Full File September 2018

2.4 To determine changes within London since the LPVS was prepared, Land Registry new build data for April 2018 was compared with April 2017[5], based on the most representative value band for each borough. This shows a reduction in average values in the highest value boroughs, but increases in other parts of London, with the most significant change in the lowest value boroughs.

Table 2.1: Average of new build house price changes April 2017-April 2018

Value band	Average of changes in values
A	-1.2%
B	1.3%
C	2.7%
D	1.6%
E	6.3%

[5] New-build registrations lag by six to seven months and therefore it is not possible to get localised figures beyond April 2018 at the time of review.

2.5 A review of residential price information for fourteen recent schemes in the lowest value boroughs (Barking and Dagenham, Hillingdon, Havering, Redbridge and Bexley) recorded by Molior also indicates increases in residential values in low value locations, with an average value across these schemes of £5,000 sq m[6].

2.6 Given that new build residential values have increased in most parts of London, updating base values used in the LPVS would result in improved viability in most instances[7].

2.7 The LPVS included a review of agents' forecasts of house prices. These relate to the residential market as a whole rather than new build properties specifically. The table below reviews the most recent forecasts and this shows a mixture of negative/ nil / modest growth scenarios for 2018/ 2019, followed by higher rates of value growth from 2020.

2.8 The lower forecasts for 2018 and 2019 reflect factors such as the uncertainty associated with Brexit, however as noted above this relates to all properties rather than new build specifically, and the land registry data for the last year indicates positive growth for new build properties in London in all areas expect for Value Band A. As such these forecasts may underestimate value growth for new build properties, particularly in the initial years.

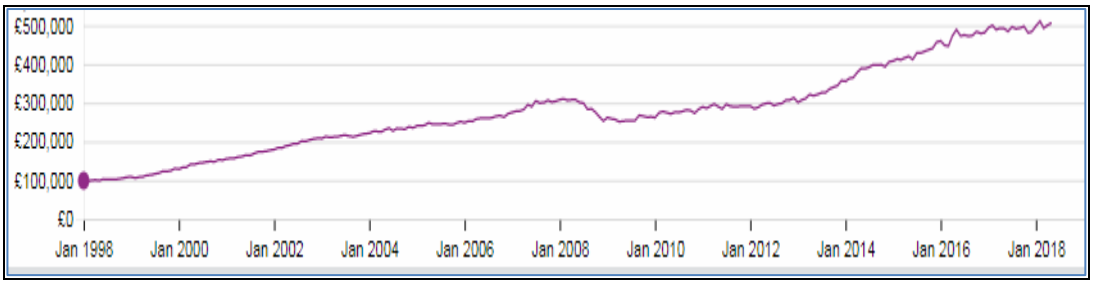
[6] These boroughs are in value band E, which used a value of £4,250/sq m in the LPVS

Table 2.2: House price forecasts

		2018	2019	2020	2021	2022	Average 2018-22
Savills (October 2018)	London	-2.00%	0.00%	5.00%	2.00%	2.00%	1.40%
Savills (October 2018)	Central London	0.00%	2.00%	8.00%	5.50%	3.50%	3.80%
Savills (October 2018)	Other London	-2.00%	0.00%	5.00%	4.50%	2.50%	2.00%
Savills (October 2018)	Suburban London	0.00%	0.00%	4.50%	4.50%	3.00%	2.40%
Savills (October 2018)	London Inner Commute	0.00%	2.00%	4.00%	4.00%	4.00%	2.80%
Savills (October 2018)	London Outer Commute	0.00%	1.00%	5.00%	4.50%	4.00%	2.90%
Knight Frank (May 2018)	London	-0.50%	2.50%	3.00%	3.50%	4.00%	2.50%
Knight Frank (May 2018)	Prime Central London E	0.50%	1.50%	2.50%	3.00%	5.00%	2.50%
Knight Frank (May 2018)	Prime Central London W	0.50%	1.50%	3.50%	3.00%	3.50%	2.40%
Knight Frank (May 2018)	Prime Outer London	0.00%	1.00%	3.00%	3.50%	4.50%	2.40%
OBR (March 2018)	UK	3.70%	2.70%	2.20%	2.40%	2.90%	2.78%
CBRE (April 2018)	London	1.00%	2.00%	4.00%	3.00%	3.00%	2.60%
CBRE (April 2018)	Prime Central London	1.00%	2.00%	5.00%	4.00%	4.00%	3.20%
Average London		-2%	1%	3%	2%	2%	
Average prime central London		1%	2%	5%	4%	4%	
Average outer London		-1%	0%	3%	3%	3%	
Median all		0%	2%	4%	4%	4%	2.5%

2.9 Given that the Plan period runs from 2019 to 2041 it is also useful to consider long term changes in new build house prices in London. Over the long term there have been significant increases in house prices in London, including for new build dwellings as indicated by the graph below of sales values from Land Registry data.

Figure 2.2: Average London New Build Value



Source: HM Land Registry

2.10 These recorded changes in values vary between a 5.4% average annual increase over the 10 years to April 2018 and a 10.3% average annual increase in new build house prices over the 5 years to April 2018.

Table 2.3: Average Yearly Percentage change in new build property values in London

Period	Date	Average annual % change to April 2018
5 Year	Apr-13	10.30%
10 Year	Apr-08	5.40%
15 Year	Apr-03	6.50%
20 year	Apr-98	9.10%

Source: Land Registry House Price Index

House price summary

2.11 The review indicates that:

- Average new build prices in London have continued to rise since data for the LPVS was collected, following a long-term trend;
- Within London there has been a fall in new build values in the most expensive parts of London and a rise in values elsewhere;
    - Average prices in value band A have fallen by 1.2%;
    - Average prices in value bands B, C and D have risen by approximately 1-3%;
    - Average prices in value band E have risen by 6%;
- Forecasts of residential values have weakened since the 2017 LPVS however these relate to the market as a whole and the new build values have continued to grow in 2018;
- The medium and long-term trends show strong new build house price growth in London.

Value of Non-residential developments

Office

2.12 It is understood from the various property market reports produced over 2018, including those by BNP Paribas, Knight Frank and JLL that in the office market, both rents and yields are being maintained at a static level. While uncertainty in respect of Brexit continues to be a concern, there is an anticipated shortage in high quality office space and low vacancy rates leading to an increase in pre-lets. BNP Paribas state *"Prime rents are being maintained by low levels of new development"* (BNP Paribas Central London Office Market, 2018), and JLL have commented *"Development completions have continued to be quickly absorbed…The low levels of speculative supply being brought to market has kept the new build vacancy rate severely limited…This has been a major factor in keeping prime rents unchanged"* (JLL Market Report 2018). This picture of a static market is reflected across London with Knight Frank showing little or no change in rents over the past year (Knight Frank M25 Offices, 2018).

Retail

2.13 There is limited information regarding the current retail market in London. However, there is a general national pattern that prime areas have remained static in terms of both rents and yields. Whilst there has been a transition within the retail market, new stores and concepts have kept pace in replacing traditional store formats and brands especially in prime areas. For example, BNP Paribas report a "slight increases in prime rents in two of our six submarkets" in London (BNP Paribas London Retail Report 2018).

Industrial/logistics

2.14 London's connectivity and size makes it an important hub, with areas around Heathrow and the motorway corridors key. The market shift towards online retailers and other delivery reliant sectors has meant low vacancy and high demand for modern distribution space in recent years, a pattern which is likely to continue. Costar analysis suggests that industrial/ logistic rents have outperformed office rents, leading to lower yields which are currently around 4.5- 5%. Market rents are forecast to rise above £150/sq m in prime locations and rental growth is also forecast in secondary space due to strong demand.

2.15 Research undertaken by JLL (UK Industrial Market Tracker) suggests that industrial rents for industrial space are expected to see strong rental growth across London, with uplifts expected of 6.6% in 2018. This is largely a result of a robust level of demand but very low supply. The biggest demand for space is within prime areas such as Heathrow

Construction costs

Changes since the LPVS was undertaken

2.16 In the LPVS all capital construction costs provided by Turner & Townsend were adjusted to Q4 2017.

2.17 In addition to this data, Turner & Townsend also reviewed tender price inflation data from 2017 to 2021. Forecasted tender price inflation was provided within Table 3.3 of the LPVS as below:

Table 2.4: Tender Price Inflation

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

2.18 Given the complexity of the forecasts and considering the patterns of forecasts, the Study used an annual cost increase of 2.5% pa in sensitivity testing.

London Developer and Contractor Market Overview

2.19 The first half of 2018 has seen uncertainty in the market, with cooling and a decrease in construction output despite forecasts pointing to minor growth in 2018.

2.20 Results from a recent Turner & Townsend market survey show that contractors operating in the London developer market have described the current market as one with plenty of opportunities with work busier January to July than the previous half year.

2.21 Surveyed contractors in the London developer market have described the residential and education sectors as buoyant, with the residential sector noted as the busiest and highest growth sector in the market currently. Conversely, a small number of contractors have reported the commercial sector to be suffering from a slowdown in growth recently.

Tender Price Inflation

2.22 Following the same methodology used in the LPVS, the table below shows the Tender Price Inflation forecasts from a range of professional service companies'

published market surveys capturing tender price inflation from 2019 to 2021, including Turner & Townsend's current forecasts.

Table 2.5: Professional Services' forecast tender price inflation – London market

Author	Published	2019	2020	2021
AECOM	2017 Q3	1.9%		
Arcadis	2018 Q1	3.0%	4.0%	4.0%
Alinea	2018 Q1	2.5%		
Corefive	2017 Q2	1.0%	2.5%	
C&B	2017 Q4	1.6%	2.0%	3.0%
G&T	2018 Q1	0.5%	1.5%	2.0%
Gleeds	2018 Q1	3.0%	5.0%	5.0%
Mace	2018 Q1	1.5%	3.0%	4.0%
T&T	2018 Q1	2.9%	3.9%	4.3%
Average		**2.0%**	**3.1%**	**3.7%**

2.23 RICS Build Cost Information Service (BCIS) All-in Tender Price Index shows a reduction of -2.8% from Q4 2017 to Q4 2018[8].

2.24 The revised costs for 2018 and forecasts over the four-year period equate to an average of 1.5%, which again is within a reasonable range of the originally assumed tender price inflation allowances in the LPVS.

[8] Data taken September 2018

3. LONDON PLAN UPDATE

Policy Changes

3.1 In response to the consultation on the Draft London Plan the GLA is proposing Minor Suggested changes to the Plan. These have been reviewed and Table 3.1 below summarises the policy changes which are relevant to viability and provides commentary on their potential impact. The Minor Suggested Changes include a number of policy amendments that may improve viability, as well as some that provide further clarity about how policies may be implemented. It is not considered that the proposed changes to the draft London Plan would significantly affect testing outcomes beyond those included in the LPVS and the Addendum Report.

Table 3.1: Summary of London Plan Policy Minor Suggested Changes relevant to viability

Plan Chapter	Chapter Title	Policy Number /Paragraph Number	Policy Title	Suggested change	Reason	Relevance to viability
3	Design	Policy D11 Part A (1A)	Fire Safety	1) Identify suitably positioned unobstructed outside space: i) for fire appliances to be positioned on if required ii) appropriate for use as an evacuation assembly point	Clarification regarding objectives of policy	Design consideration. Assembly space can be provided on external amenity space. No/ limited additional costs. Unlikely to impact viability.
4	Housing	Policy H2, Para 4.2.9	Small sites	The principle of no net loss of green cover can be met through off-site provision where site constraints mean that it cannot be achieved on site.	Confirms that off-site provision of green infrastructure could be an acceptable form of mitigation (e.g. payment in lieu) where site constraints mean that the policy of no net loss on small sites cannot be met on site.	Additional flexibility to meet policy requirement through off-site provision where not possible to achieve this onsite will assist deliverability/ viability.
4	Housing	Policy H6	Threshold approach to applications	A minor change has been suggested to Policy H6 to allow for tenure flexibility for small sites, and where there is no demand from affordable housing providers, boroughs may permit small housing developments, to access the Fast Track Route where the relevant threshold is met off-site or as an in-lieu payment.	Allows for additional tenure flexibility for small sites and access to the Fast Track Route even where affordable housing is provided offsite, in order to support delivery of small sites.	This approach will assist with viability.
4	Housing	Policy H6	Threshold approach to applications	A minor change has been suggested to Policy H6 so that where there is no net loss of industrial floorspace, the 35% threshold will apply.	In recognition of the costs that can arise through the re-provision of industrial floorspace.	This approach will assist with viability.

Plan Chapter	Chapter Title	Policy Number /Paragraph Number	Policy Title	Suggested change	Reason	Relevance to viability
4	Housing	Policy H7	Affordable housing tenure	A minor change to Policy H7 has been suggested to allow the tenure of affordable housing provided above 35% on private, public or industrial sites to be flexible (and which may comprise of intermediate tenures).	Allows for additional flexibility and supports delivery of 50% affordable housing target on public and industrial land.	This approach will assist with viability.
4	Housing	Policy H15, Para 4.15.7	Specialist older persons housing	The change clarifies that the Fast Track Route is available for specialist older persons housing. There is tenure flexibility which also applies to small sites development (including for older people) as set out in Policy H2 Small sites and small housing developments and Policy H6 Affordable housing tenure.	Change makes it clear that the Fast Track Route is available with tenure flexibility to support delivery.	This approach will assist with viability.
5	Social Infrastructure	Policy S6, Para 5.6.3	Public toilets	Where gender-specific toilets are provided, a gender-neutral option should also be provided wherever possible (in addition to unisex disabled persons toilets).	To clarify approach to gender-neutral provision as something that complements rather than replaces gender-specific toilets.	The policy requires that gender-neutral toilets are provided where this is possible and is unlikely to affect viability.
8	Green Infrastructure and Natural Environment	Policy G5, Part BA	Urban Greening	Existing green cover retained on site should count towards developments meeting the interim target scores set out in (B) based on the factors set out in Table 8.2.	To clarify that existing green cover on site that is retained as part of a development should be counted towards meeting the UGF targets.	This provides additional scope to achieve the UGF targets and will reduce the costs of additional green infrastructure provision.

Plan Chapter	Chapter Title	Policy Number /Paragraph Number	Policy Title	Suggested change	Reason	Relevance to viability
8	Green Infrastructure and Natural Environment	Policy G6, Part D	Biodiversity and access to nature	Development proposals should aim to secure net biodiversity gain and be informed by the best available ecological information which should be considered from the start of the development process.	The draft Plan stated that proposals which result in positive biodiversity gains should be supported (Part E). The minor amendment to part D states that proposals should aim to secure net biodiversity gains. This increases the potential for securing biodiversity gains in new developments where feasible.	Linked to policies on green infrastructure and urban greening (see paragraphs 8.3.1, 8.5.2, 8.5.3). The policy can be addressed through ensuring that ecological advice informs landscaping and design of development to achieve biodiversity gains where possible. Any cost impact is likely to be marginal.
9	Sustainable Infrastructure	Policy SI1	Improving air quality	A minor change to Policy SI1 Part A (3) has been suggested to clarify that the policy applies principally at the master planning stage of the development.	This clarification has been added because at master planning stage design and layout options are more fluid and it is possible to consider built form, layout and the interactions between emissions sources and public spaces as part of the design optimisation process for the largest development proposals.	This approach will assist with delivery.
9	Sustainable Infrastructure	Policy SI2, Part C	Minimising greenhouse gas emissions	Minor changes suggested to explain the approach to the zero carbon target and to clarify the targets for energy efficiency.	To clarify how the targets at various stages of the energy hierarchy are intended to apply	The change reflects past performance of development schemes in London which demonstrates that these targets are achievable. The on-site reduction of at least 35% over building regulations and energy efficiency targets were tested within the LPVS.

Plan Chapter	Chapter Title	Policy Number /Paragraph Number	Policy Title	Suggested change	Reason	Relevance to viability
9	Sustainable Infrastructure	Policy SI2 Part DB	Minimising greenhouse gas emissions	The suggested change is part of the clarification of the approach to zero carbon requiring that development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.	This change clarifies the approach to the zero carbon target by removing reference to construction in SI2 (A) and by inserting a requirement for whole life-cycle carbon emission assessments for development proposals referable to the Mayor in SI2 (DB).	The inclusion of whole life cycle approach for applications referable to the Mayor will entail accounting for all carbon emissions of a development rather than just the construction from building material. This clarifies the approach to calculating carbon emissions. Any viability impacts are likely to be marginal.
10	Transport	Policy T5, Part F, Table 10.2	Cycling	A suggested change to cycle standards for C3/ C4 uses clarifies that 1 long stay space will be required for a 1 person 1 bedroom dwelling (rather than 1.5 spaces) and 1.5 spaces will only be required from 2 person 1 bedroom dwellings.	To distinguish between cycle provision for 1 person 1 bedroom units and 2 person 1 bedroom dwellings.	Amendment to reduce long stay cycle parking for 1 person 1 bedroom units from 1.5 to 1 space per unit will reduce the cost of provision of cycle parking on smaller units.
10	Transport	Policy T5, Part F, Table 10.2	Cycling	Suggested change requires 2 short term cycle spaces for schemes with 5 to 40 dwellings rather than 1.	Clarification and request for developments of 5 to 40 dwellings to provide 2 short-stay spaces.	Provision of 2 rather than 1 short stay cycle space in developments of 5 to 40 dwellings will have marginal cost implication, which will not have a significant impact on viability.
10	Transport	Policy T6.3, Part EA	Retail Parking	Suggested change to policy to require that where car parking is provided at retail development, provision for rapid electric vehicle charging should be made	If parking is necessary, then this provides opportunity for the provision rapid charging points.	In many cases this will be funded directly by the provider, however a cost allowance for rapid charge points has been included within new supermarket case studies (see below).

4. FURTHER SITE TYPE TESTING

Introduction

4.1 Following the consultation on the draft London Plan in 2017, additional case study viability testing has been undertaken in response to the representations. Additional small site testing has been undertaken as well as further testing of different forms of large-scale development.

Small sites

Case studies selected

4.2 The additional small site testing is based on six case studies ranging from 1 to 12 dwellings, with different built forms on different site types. Table 4.1 summarises the additional small site case studies.

Table 4.1: Small Sites Additional Case Studies.

Case study	Development description	Site area (ha/ sqm)	Existing units	Existing residential floorspace	New dwellings tested	Gross new floor area
RES13	Infill development on existing garage either at end of terrace or side of house and development of 1 new 2 storey house	0.0075 ha (75 sqm)	0	0	1 new house	80 sq m
RES14	Conversion and extension of existing 3 bed two storey house through a two storey rear extension and single storey roof extension to provide 3 flats	0.022 ha (220 sqm)	1	100 sqm	3 new flats	200 sq m
RES15	Infill development on rear of curtilage of an existing house with side access to provide 1 storey 2 bed flat to the rear	0.01 ha (100 sqm)	0	0	1 additional flat	70 sq m
RES16	Demolition of 2 existing semi-detached houses and their replacement with a three storey block of 6 flats	0.09 ha (900 sqm)	2	360 sqm	6 new flats	635 sq m
RES17	Comprehensive infill on garages site to provide 5 two storey houses	0.0526 ha (526 sqm)	0	0	5 new terraced houses	450 sq m
RES18	Demolition of 2 existing semi-detached houses and their replacement with a four storey block of 12 flats	0.2 ha (2,000 sqm)	2	400 sq m	12 new flats (10% PartM(4).	1,027 sq m

Assumptions used for the testing

4.3 The assumptions taken forward from the testing undertaken in LPVS 2017 are:

- Sales values and ground rents, which are set out in Table 5.4 and Table 5.6 in the LPVS;
- Affordable housing values and tests for developments over 10 dwellings (RES18) – see Tables 5.8-5.11 and Annex D; and Table 9.1 for the affordable housing scenarios;
- Affordable housing contributions for developments under 10 dwellings – scenario with £30,000 per new dwelling off-site contribution;
- Demolition costs for the relevant case studies[9] (RES13, RES16, RES17 and RES18) – see para 5.6.12 in the LPVS;
- External works – see para 5.6.11 in the LPVS;
- Other development costs – see Table 5.14 in the LPVS, except the return for affordable housing is on value rather than cost;
- Policy costs relating to energy standards – see paras 5.8.3 and 5.8.4 in the LPVS. Note that these are only applied to developments of more than 10 dwellings (RES18);
- Costs of a fire evacuation lift and additional fire safety for case studies of 4-10 storeys – see paras 5.8.14 and 5.8.15 in the LPVS this applies to RES18 only;
- Parking and cycle storage costs – see para 5.8.5 onwards in the LPVS;
- Planning contributions - CIL (see table 5.17 in the LPVS), although this has been applied to the estimated new floorspace rather than the total floorspace. A S106 local mitigation cost has also been applied to RES18 in line with the approach in the LPVS (see para 5.8.20).

4.4 The specific assumptions for these small sites relate to:

- Build costs, which have been estimated by Turner & Townsend to reflect the built form of each case study. These draw upon BCIS cost data, which contains a greater population of benchmark projects compared with the larger sites forming the bulk of the 2017 testing, bringing a reliable set of data for small site testing;

Table 4.2: Small sites build costs

Build costs (including allowance for external works)	**Band A**	**Band B**	**Band C**	**Band D**	**Band E**
RES13	£2,604	£2,481	£2,379	£2,176	£2,093
RES14	£2,231	£2,127	£2,039	£1,865	£1,794
RES15	£2,910	£2,774	£2,659	£2,432	£2,339
RES16	£2,191	£2,088	£2,002	£1,831	£1,761
RES17	£1,659	£1,582	£1,516	£1,387	£1,334
RES18	£2,125	£2,025	£1,942	£1,776	£1,708

- There are specific assumptions about accessibility relating to the characteristics of the case studies and the policy requirements for small sites. New dwellings on small sites are required to meet Part M4(2) if they are accessed from the

[9] Noting that these standard allowances may be higher than required for the infill development anticipated for RES13 and RES17.

ground floor, while for developments of over 10 dwellings (RES18) 10% of units are required to meet Part M4(3);

- There are also specific assumptions for the *quantity* of disabled persons parking and electric car charging points based on the characteristics of the case study;
- The testing assumes that developer's return will be drawn down at the project end stage. This is so that development finance is not calculated on the profit amounts in the cashflow.

4.5 The largest of the small site case studies (RES18 – 12 dwellings) is subject to Policy G5 Urban Greening. This allows for a range of urban greening types to be applied taking into account site circumstances in order to obtain the proposed target score (0.4 for residential development) with different weightings. The GLA has confirmed that the score would most likely be met through the retention and provision of urban greening types such as trees, planting, amenity grassland or an extensive green roof. Turner and Townsend have identified these urban greening types as common within landscape design and included in the benchmarked costs allowances used in the testing[10].

4.6 The other small site case studies are subject to Policy H2 (HB) i.e. to benefit from the presumption in favour of small housing developments, minor developments should achieve no net loss of overall green cover. Complying with this policy may involve some of the urban greening types noted above (which are already in the cost allowances).

4.7 The development period for the small sites is assumed to be one year, except for RES18 which is two years.

4.8 The small sites are tested in all the value bands. These small sites may be less prevalent in the highest value area.

Benchmark land values

4.9 The smaller sites are considered against benchmark land values (BLV) based on typical values for the specific site types based on their current use for each of the value bands.

4.10 Three of the small site case studies involve development of existing dwellings - RES14, RES16 and RES18, with the latter two involving demolition and redevelopment of pairs of existing semi-detached dwellings. RES18 is a larger development and therefore the site is likely to be larger than RES14 or RES16.

4.11 The approach has been to assume that sites that are most likely to come forward for redevelopment will be existing stock in poorer than average condition and/or poorly utilised. Land Registry Price Paid data for existing semi-detached dwellings in London has been reviewed to come to a view on what might be a suitable benchmark for these three case studies. The benchmarks for RES14, RES16 and RES18 are based upon lower quartile sales checked against EPCs and measured site areas[11].

4.12 The other three case studies are developments on garage sites or within the curtilage of existing dwellings, and these will have lower values. Here, the approach has been informed by the LPVS benchmark land values and available information on garage and plot sales, adjusted to take account of different sites and value areas.

[10] A Minor Suggested change to the policy allows for existing green cover retained on site to count towards the interim target scores.

[11] The approach to BLVs has been informed by land registry sales data and is based on the price at which the current owner has been incentivised to sell, at 2017 values, which is consistent with the approach in the base testing.

Table 4.3: Specific Assumptions for the Small Site Case Studies

Factor	RES13	RES14	RES15	RES16	RES17	RES18
New dwellings	1	3	1	6	5	12
Disabled persons parking + electric charging	0	0	0	0	0	2
Fire safety costs	n/a	n/a	n/a	n/a	n/a	Yes
Accessibility	Part M4(2)	None required as conversion	Part M4(2)	Part M4(2)	Part M4(2)	Part M4(2) and 10% Part M4(3)
Energy standards	n/a	n/a	n/a	n/a	n/a	Yes
Local s106 mitigation	n/a	n/a	n/a	n/a	n/a	Yes
Site size	0.0075ha	0.022ha	0.01ha	0.09ha	0.0526ha	0.2ha
Current site	Garage - redevelopment	2 storey house – conversion & extension	Rear Curtilage	2 semi-detached houses - redevelopment	Garages	2 semi-detached houses - redevelopment
BLV value band A	£125,000	£1.48m	£0.65m	£2.96m	£2.8m	£4.61m
BLV value band B	£63,000	£0.89m	£0.35m	£1.775m	£1.55m	£2.765m
BLV value band C	£50,000	£0.61m	£0.2m	£1.21m	£1.05m	£1.89m
BLV value band D	£43,000	£0.475m	£0.15m	£0.925m	£0.805m	£1.44m
BLV value band E	£31,500	£0.40m	£0.1m	£0.63m	£0.51m	£0.98m

Results

4.13 All of the small site case studies were tested in each value band and the testing is compared to the BLVs in table 5.3 above. Results are presented as scheme residual values less the site BLV estimate, as opposed to the equivalent value *per hectare* used for the larger sites. Case studies RES13-RES17 are tested with and without a £30,000/dwelling offsite affordable housing contribution, which reflects that some boroughs require an off-site contribution from minor residential developments where justified by local affordable housing need and where viable.

4.14 RES18 is tested with 0%, 35% and 20% affordable housing with various tenure mixes (see Table 9.1 in the LPVS). RES 18 is unlikely to be located on public or industrial land and so the relevant affordable housing threshold under Policy H6 would be 35%. Furthermore, a minor suggested change to the plan allows small housing developments of less than 25 units to access the Fast Track Route where on-site affordable housing is provided in a single tenure where agreed by the borough[12]. This could be entirely intermediate tenure, whereas the testing assumes a proportion of low-cost rent (at different levels) in all scenarios which is a cautious approach in view of the additional flexibility arising from the suggested change.

4.15 Commentary and graphs are provided below, and Annex A sets out the findings in full.

Value Band A

4.16 In value band A all of the small sites tested are viable against the BLVs. The case studies as modelled are able to meet higher site values than the BLVs used here, with the exception of RES15 where the margin is smaller.

Value Band B

4.17 In value band B all of the small sites tested are viable against the BLVs. Again, with the exception of RES15, the case studies as modelled are able to meet higher site values than the BLVs used here.

Value Band C

4.18 In value band C all of the small sites tested are viable against the BLVs. RES15 is relatively marginal if it is also making offsite affordable contributions. Again, higher site values than the benchmarks can be afforded in most cases.

Value Band D

4.19 In value band D all of the small sites tested are viable against the BLVs except for RES14 and RES15 which are not viable if they are required to make the contribution to offsite affordable housing. RES15 is marginally viable without the offsite affordable housing contribution. Again, higher site values than the benchmarks can be afforded in most cases.

Value Band E

4.20 In value band E only RES13 and RES17 are viable. The other small site case studies do generate positive residual values, but not sufficient to meet the estimated benchmarks. However, where lower cost sites can be identified in this value band, development may still be able to proceed.

[12] Paragraph 4.6.8A and 4.6.8B of the Minor Suggested Changes version of the plan.

Figure 4.1: Small Sites Net RV less BMLV in Value Band A

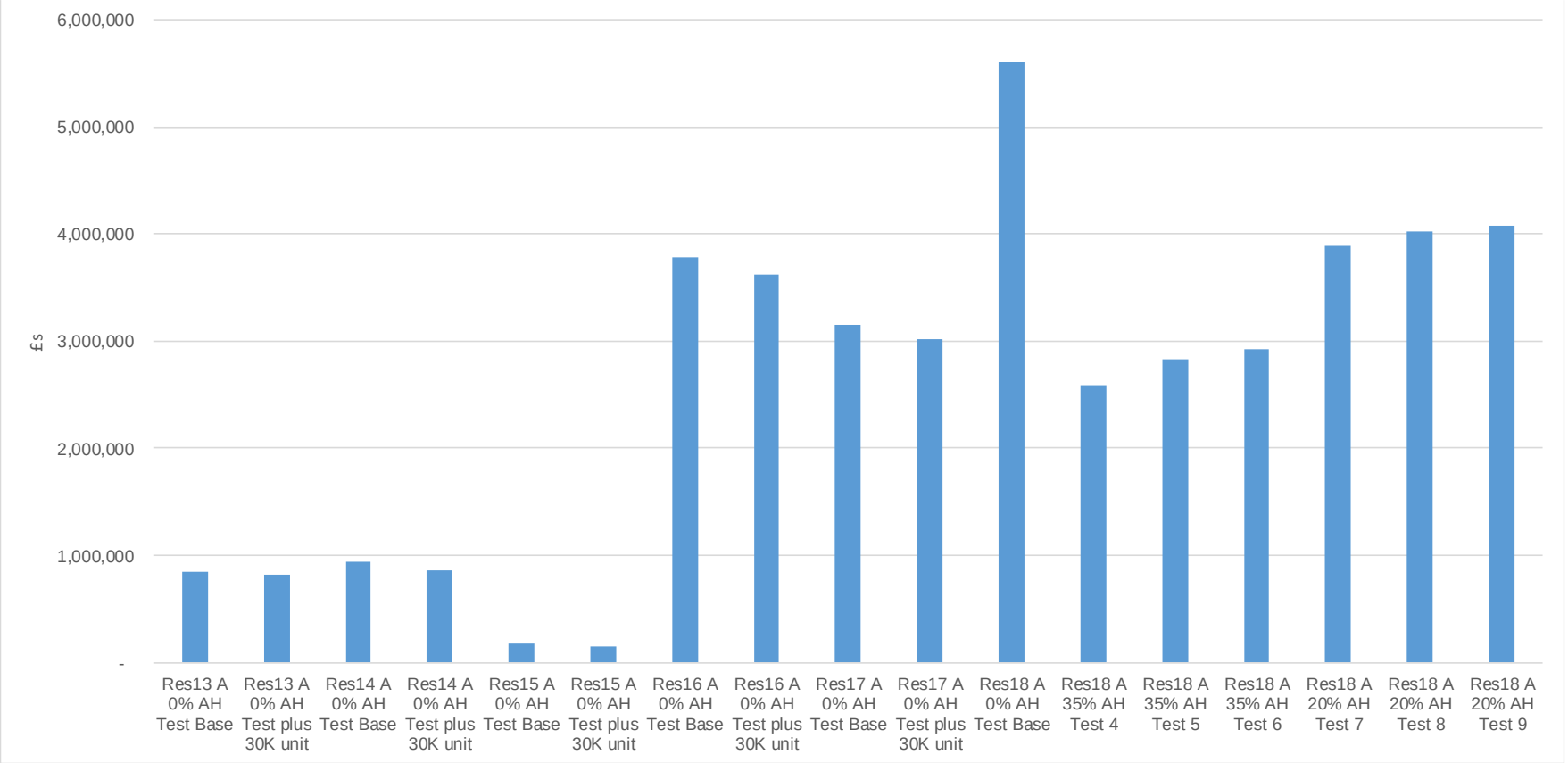


Figure 4.2: Small Sites Net RV less BMLV in Value Band B

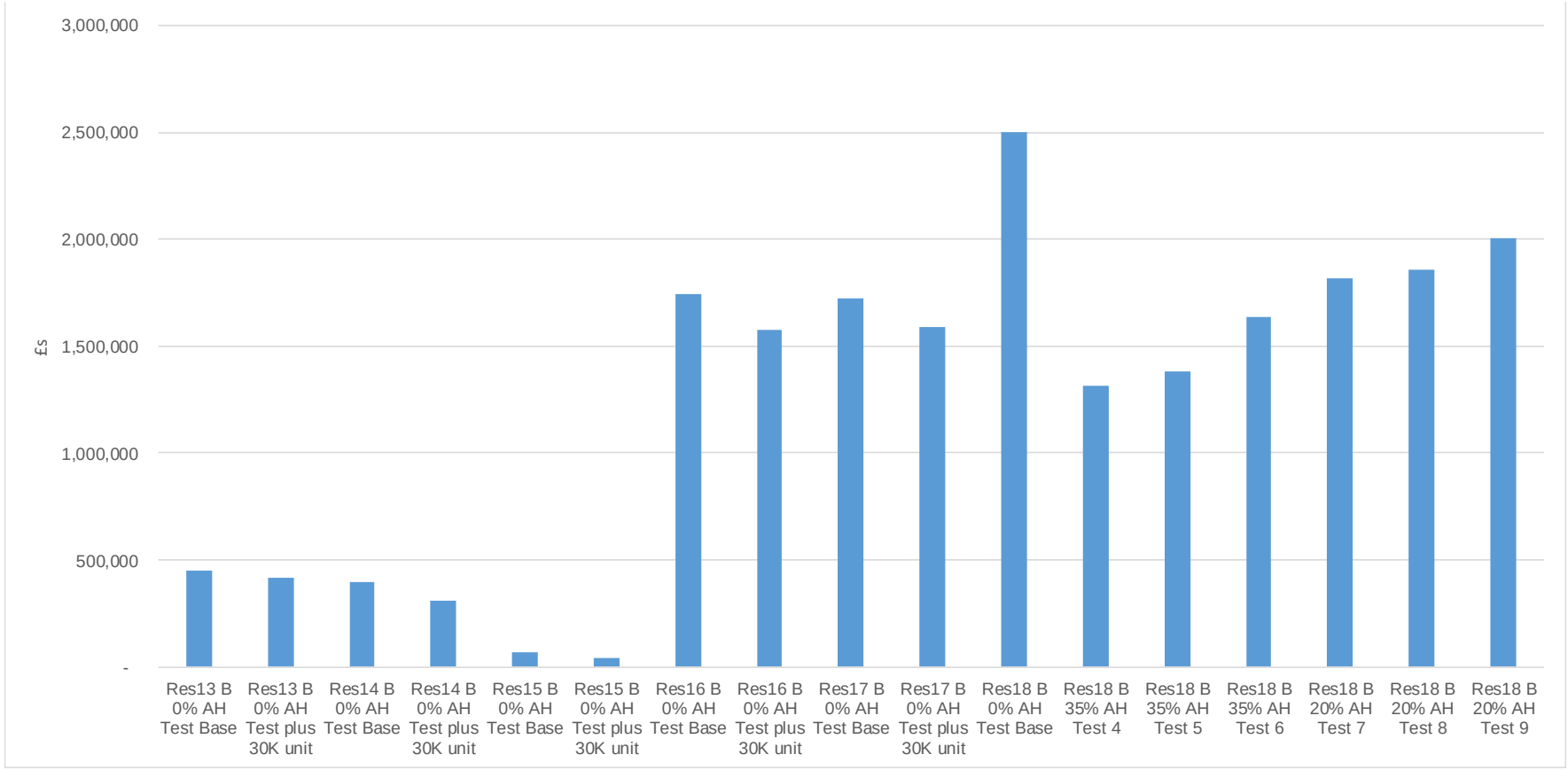


Figure 4.3: Small Sites Net RV less BMLV in Value Band C

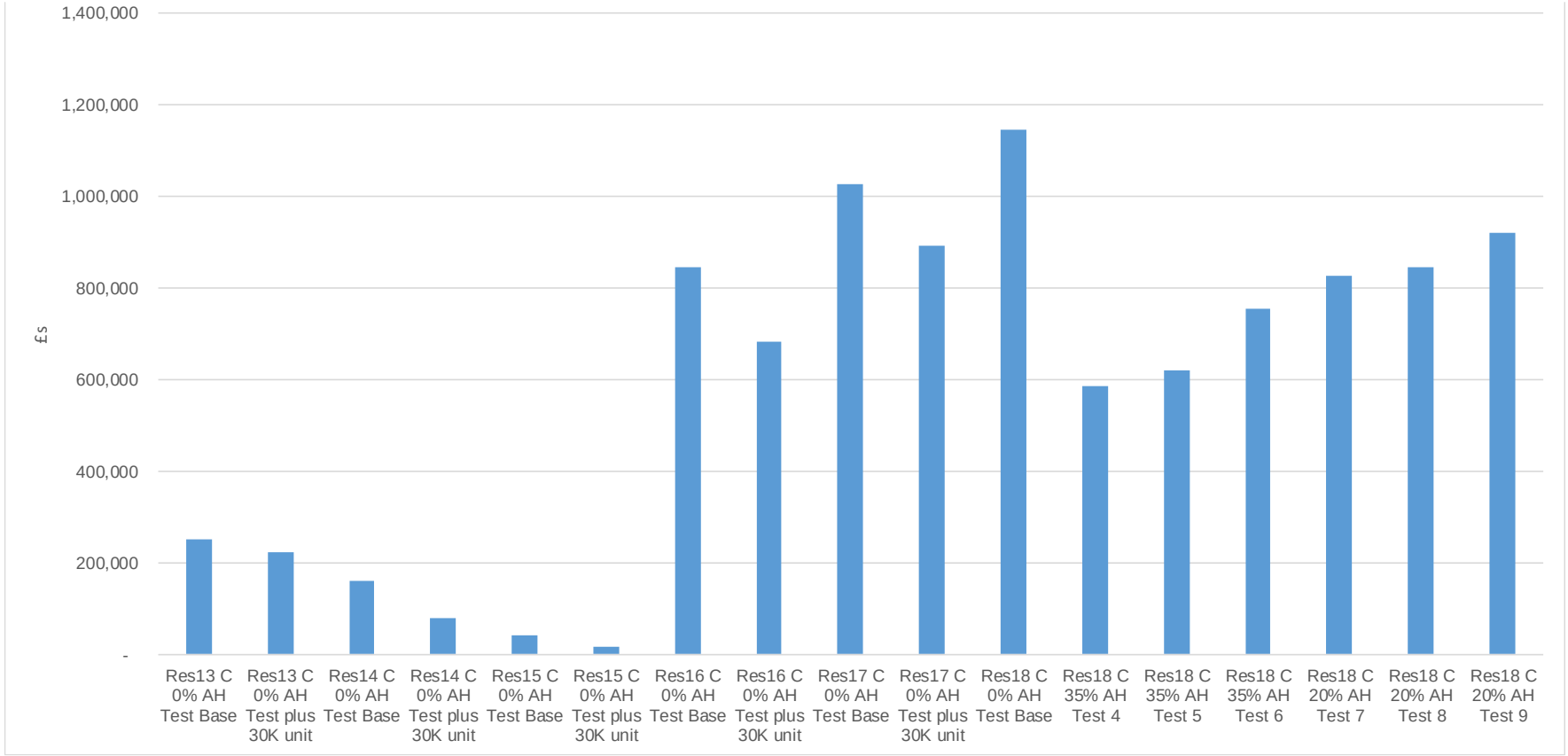


Figure 4.4: Small Sites Net RV less BMLV in Value Band D

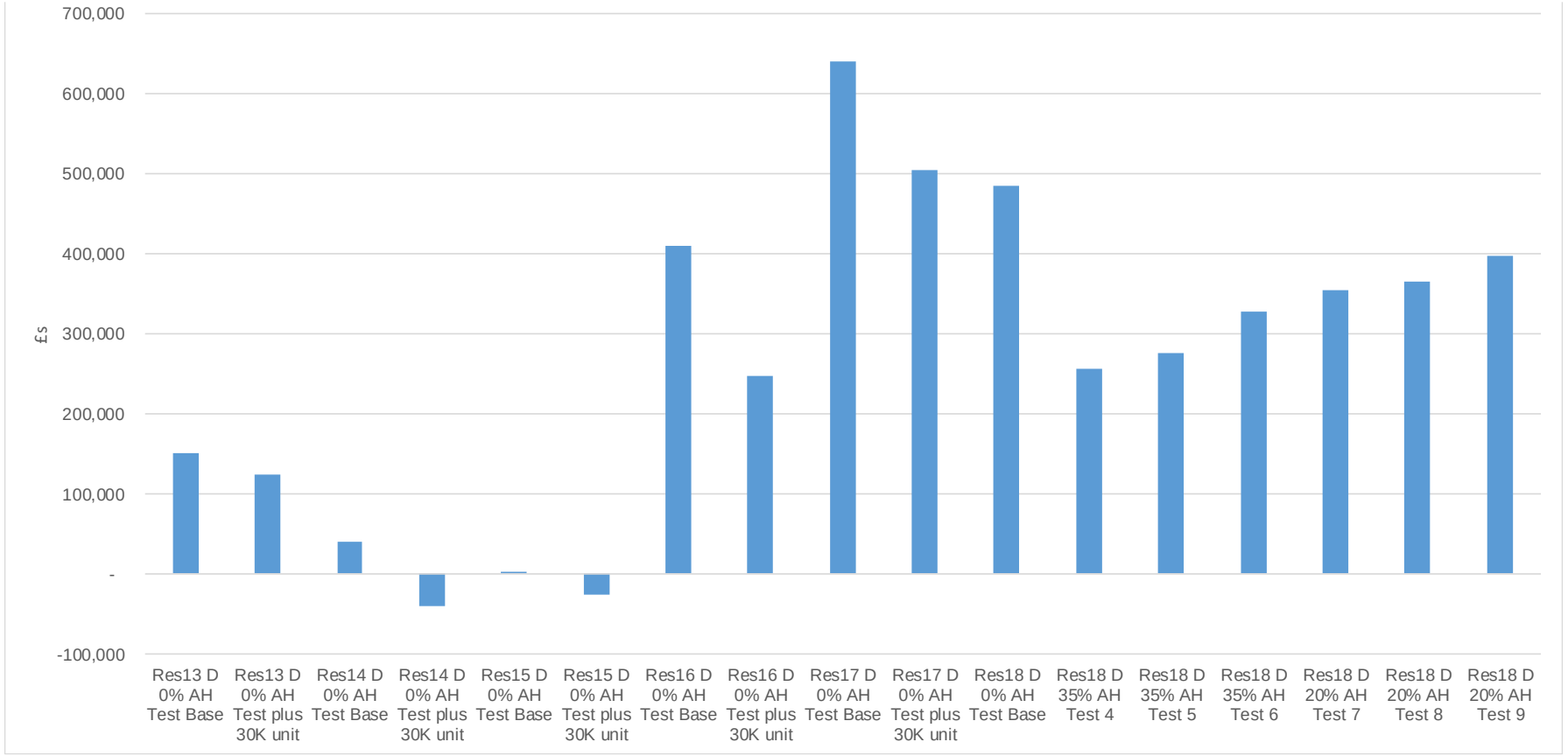
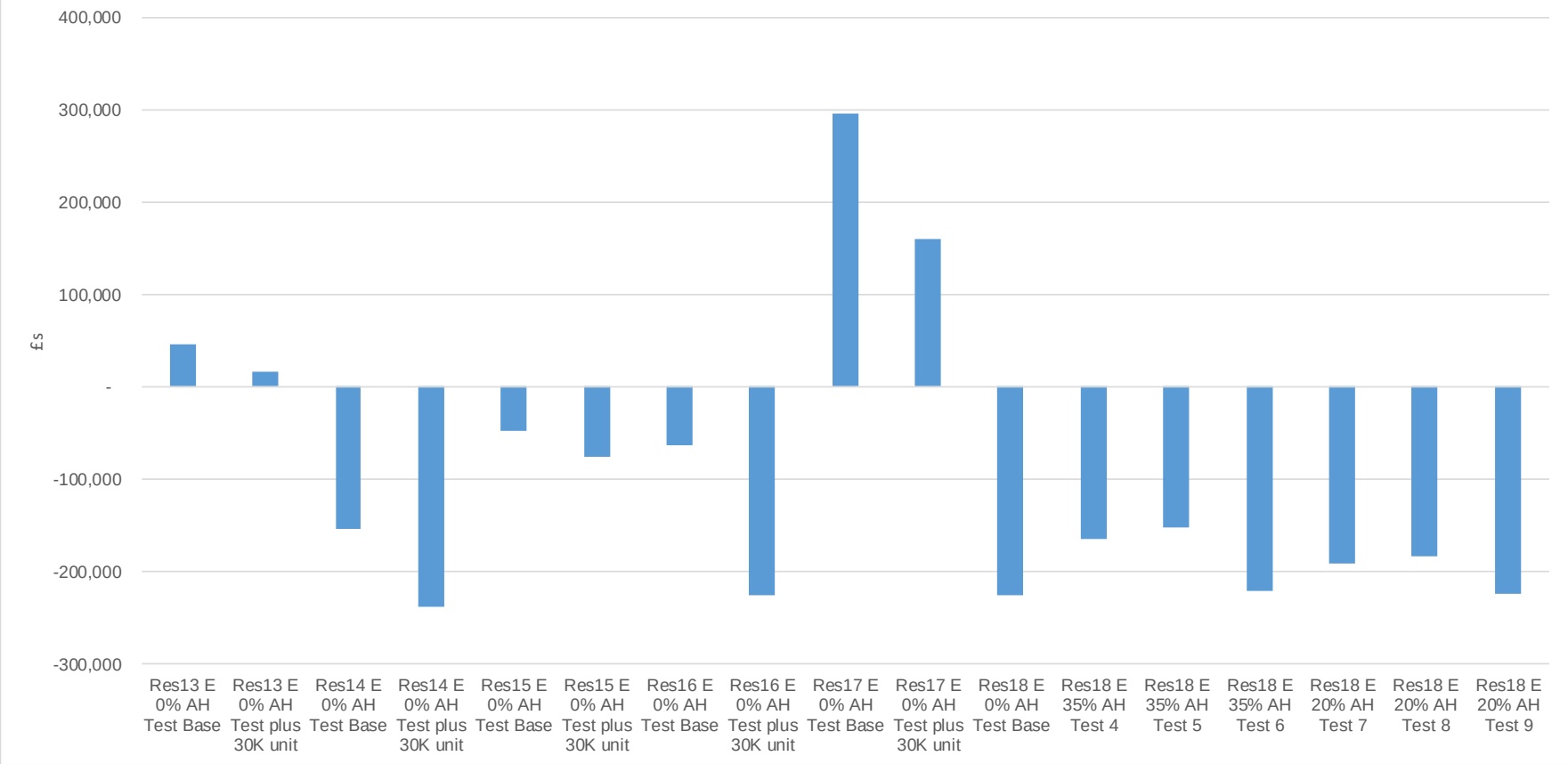


Figure 4.5: Small Sites Net RV less BMLV in Value Band E



Small Sites Conclusion

4.21 The small sites case studies are generally viable in all of the value bands except for value band E, although even here two of the six case studies are viable. These overall conclusions include the case study RES18 that is above the threshold for affordable housing.

4.22 RES15 is less viable than the other case studies tested, although it still meets the benchmark in most value bands.

4.23 Overall, the testing indicates that the small sites as modelled in this study are generally viable.

Large-scale Strategic sites

Case studies selected

4.24 The additional large site testing is based on four case studies, with different built forms on different site types. Table 4.4 summarises the additional large-scale case studies.

Table 4.4: Large-scale Additional Case Studies

Case study	Development description	Site area (ha)	Existing use	New dwellings	Other new uses	Height (storeys)	Development period (yrs)
MU3	Large scale town centre scheme	8	-	3,000	Office 20,000 sq m Retail 10,000 sq m Leisure 5,000 sq m Nursery, medical centre	4 - 10	18 180 dpa
MU4	Estate regeneration	16	2,000 – 1,600 social rent and 400 right to buy units	4,500 – 1,600 social rent and 2,900 market for sale	Retail 1,000 sq m Medical centre	7	20 180 dpa
MU5	Supermarket mixed use	2	Supermarket	750	New supermarket 1,400 sq m Nursery	4 - 10	6 180 dpa
MU6	Large supermarket mixed use	2.5	Supermarket	500	New supermarket 5,000 sq m Nursery	4 - 10	5 150 dpa

Assumptions used for the base testing

4.25 The assumptions taken forward from the LPVS are:

- Dwelling mixes and sizes – see Tables 5.1 and 5.3, and para 5.3.2 in the LPVS;
- Sales values and ground rents, which are set out in Table 5.4 and Table 5.6 in the LPVS. Base values have been applied for the first five years in line with the NPPF. Given the long-term nature of these schemes projected changes in values and costs in the LPVS have been applied from development year 6 for MU3, MU4 and MU5;
- Affordable housing values and tests – see LPVS Tables 5.8-5.11 and Annex D for values and Table 9.1 for the affordable housing scenarios;
- Benchmark land values for MU3, MU5 and MU6 – see Annex J in the LPVS. The approach to BLVs has been considered further by the GLA at Addendum Annex J, which references additional information that has become available following the LPVS;

- Non-residential values – see table 7.1 in the LPVS;
- Demolition costs – see para 5.6.12 in the LPVS;
- Build costs – see Table 5.17 in the LPVS;
- Non-residential build costs, external works and other costs (except for MU5 and MU6) – see tables 7.2 and 7.3, and para 7.2.6 in the LPVS;
- Other development costs – see Table 5.14 in the LPVS;
- Policy costs relating to energy standards – see paras 5.8.3 and 5.8.4 in the LPVS;
- Costs of fire evacuation lifts and additional fire safety measures – see paras 5.8.14 and 5.8.15 in the LPVS;
- Parking and cycle storage costs and quantities – see para 5.8.5 onwards in the LPVS;
- Planning contributions - CIL (see table 5.17 in the LPVS) and local S106 mitigation (see para 5.8.20).

4.26 The specific assumptions for these large-scale sites relate to:

MU3

- An allowance for affordable retail space has been included within the testing. This has been calculated on the same basis as the affordable workspace undertaken in the LPVS, whereby it is assumed the 10% of the retail floorspace is let at 80% of the market rent (also applies to MU5 and MU6);
- Costs of provision for nursery and health care facilities have been included in line with the LPVS and it is assumed that each will also attract a value. The values are based on figures provided by GLA with rent of £162 per sqm and yield of 7%[13];
- Developer return at the same rate as in the LPVS but taken at the end of the development period, rather than cashflowed as a cost through the development cycle (also applies to MU4, MU5 and MU6 noting that for MU4 alternative developer return rates were also tested);
- Contractor return for affordable housing at same rate as in the LPVS but taken as a return on revenue[14];
- In many instances the purchase of a site will not be in a single transaction and is likely to be in stages over the course of the development, particularly for longer term schemes. For MU3 which has an eighteen-year development programme, the land finance assumptions have been aligned over five stages.

MU4

- Compensation / leaseholder buyback - The land assembly cost on MU4 includes the costs of leaseholder buy backs and tenant compensation. These have been calculated on the basis that 400 of the units currently on the site have been acquired under Right to Buy provisions and so will need to be acquired before redevelopment can proceed. The number of leaseholders will vary between and across estates, depending on the location and typology of the blocks, with lower rise estates and traditionally built blocks generally having higher numbers of

[13] Nursery costs and values also applicable to MU5 and MU6.
[14] Also applies to MU4, MU5 and MU6. PPG on viability (2018) also references return being calculated as a percentage of development value.

leaseholders. The figures used are based on an average from six estates across London with differing built form reviewed by the GLA. An additional allowance of 10% of property value has been added for home loss and a further 10% for SDLT on the leaseholders' new property together with legal and removal costs. Compensation for tenants has been allowed at a rate of £6,300 per unit in line with current government guidance;

- Land costs - To facilitate regeneration of the site the borough or registered provider is likely to bring forward the site at nominal cost with any financial interest (if applicable) reflected in overage or profit share arrangements. On this basis the benchmark for these schemes would be achieving a positive residual value after vacant possession and relocation costs are included as development costs;
- Profit - Because this is assumed to be initiated or led by the local authority or a registered provider it is expected that levels of return would vary, reflecting different risk levels. The level of return has been tested at 17.5% on the private market component, with a further test at 10% reflecting lower levels of risk arising from council/ RP involvement and the release and acquisition of land;
- Affordable housing social rent – at a value of £1,900/sq m with costs as per other rented affordable housing. This value is lower than the average of a range of Registered Provider transaction prices for social rented units (see Annex C).

<u>MU5 and MU6</u>

- Construction costs – These vary according to the location, number and form of car park spaces and is MU5 £4,289 - £4,470/sq m and MU6 £2,971 - £3,054/sq m. This includes base build costs, externals, parking and charge points;
- Car parking – for MU5 a conservative approach has been taken with 58 spaces of basement car parking included in all value areas which assumes the re-provision of existing spaces[15]. For MU6 the level of car parking included is 67 spaces in Value Bands B and C and 100 spaces in Band D, in podium form which are the maximum allowed under policy T6.3;
- Rapid electric car charging – an allowance (£40,000 per point) for charging points is included within the construction cost[16]. This is considered to be at the upper end of costs as in many cases instalment, operation and maintenance of the chargers are paid for by the energy provider[17].

4.27 MU3, MU5 and MU6 are all tested in value bands B, C and D where schemes at this scale are most likely to come forward using the different affordable housing tests noted in Table 9.1 in the LPVS 2017 report. As with the small sites testing, the supermarket sites are unlikely to be located on public or industrial land and so the 50% affordable housing threshold is unlikely to apply for MU5 and MU6.

[15] This exceeds the standards at Table 10.5. Policy T6 I states that where sites are redeveloped, existing parking provision should be reduced and not be re-provided at previous levels where this exceeds the standards set out in this policy. The policy allows for some flexibility to be applied where retail sites are redeveloped outside of town centres in areas which are not well served by public transport, particularly in outer London. The typology has been tested with levels of parking that exceed plan standards which would only be acceptable in limited scenarios. This increases build costs and is a conservative testing approach.

[16] See Policy T6.3 part EA

[17] Transport for London work with a number of providers that install, operate and maintain rapid charging units.

Results

4.28 The results are shown in the graphs below to aid comparison, preceded with a commentary by each band area. Annex B has a table of findings.

Value Band B

4.29 In value band B the large mixed-use scheme (MU3) and the two supermarket/ residential schemes are viable against all the BLVs. MU5 with 750 dwellings and a 1,400 sq m supermarket is more viable than MU6 with 500 dwellings and a 5,000 sq m supermarket across all BLVs.

Value Band C

4.30 In value band C the viability is less strong than Band B, however the scenarios tested remain viable with low benchmarks.

4.31 MU3 is also viable with mid and high BLV, MU5 and MU6 are viable at the mid BLV but only MU6 is viable for some of the tests in the high BLV.

Value Band D

4.32 In value band D the schemes remain viable although generate a lower residual land value over the benchmark land value. MU5 continues to produce improved viability over MU6. The least viable scheme is MU6 with 50% affordable housing, however as noted above, under Policy H6 the 35% threshold would apply, with the higher threshold only applicable on public and industrial land.

4.33 In addition to being viable at the low BLV, M3 is also viable at the mid BLV and for some of the tests at the high BLV. MU5 and MU6 are viable with some of the tests at the mid BLV but are not viable at the high BLV. The following graphs indicate the net residual value less the low BLV for each value band. The outcomes against the mid and high BLVs are considered above, with results set out in Annex B.

Estate Regeneration MU4

4.34 In value band B and band C MU4 estate regeneration is viable with a positive residual value after all the relocation and development costs have been taken into account, including a 17.5% developer return. The existing affordable units can be re-provided, with surplus value available to provide additional affordable housing in line with Policy H10.

4.35 In value band D the scheme is positive but more marginal with a 17.5% developer return. Viability is improved with a reduced profit level of 10%.

4.36 The base testing assumes that land costs are associated with securing vacant possession and includes the costs of leaseholder buybacks and compensation. There is no further land purchase for the scheme and therefore the results are shown as a return per hectare with no allowance for a benchmark mark land value (see assumptions above).

4.37 Following the graphs, Table 4.5 sets out the residual values if standard benchmark land values were assumed. It can be seen that even if a land cost was applied in addition to other acquisition costs referred to above, the scheme would remain viable for all scenarios except an assumption of 17.5% developer return in value band D where the result is marginal.

Figure 4.6: Large Scale (MU3, MU5, MU6) Net RV less BMLV/ha per hectare in Value Band B

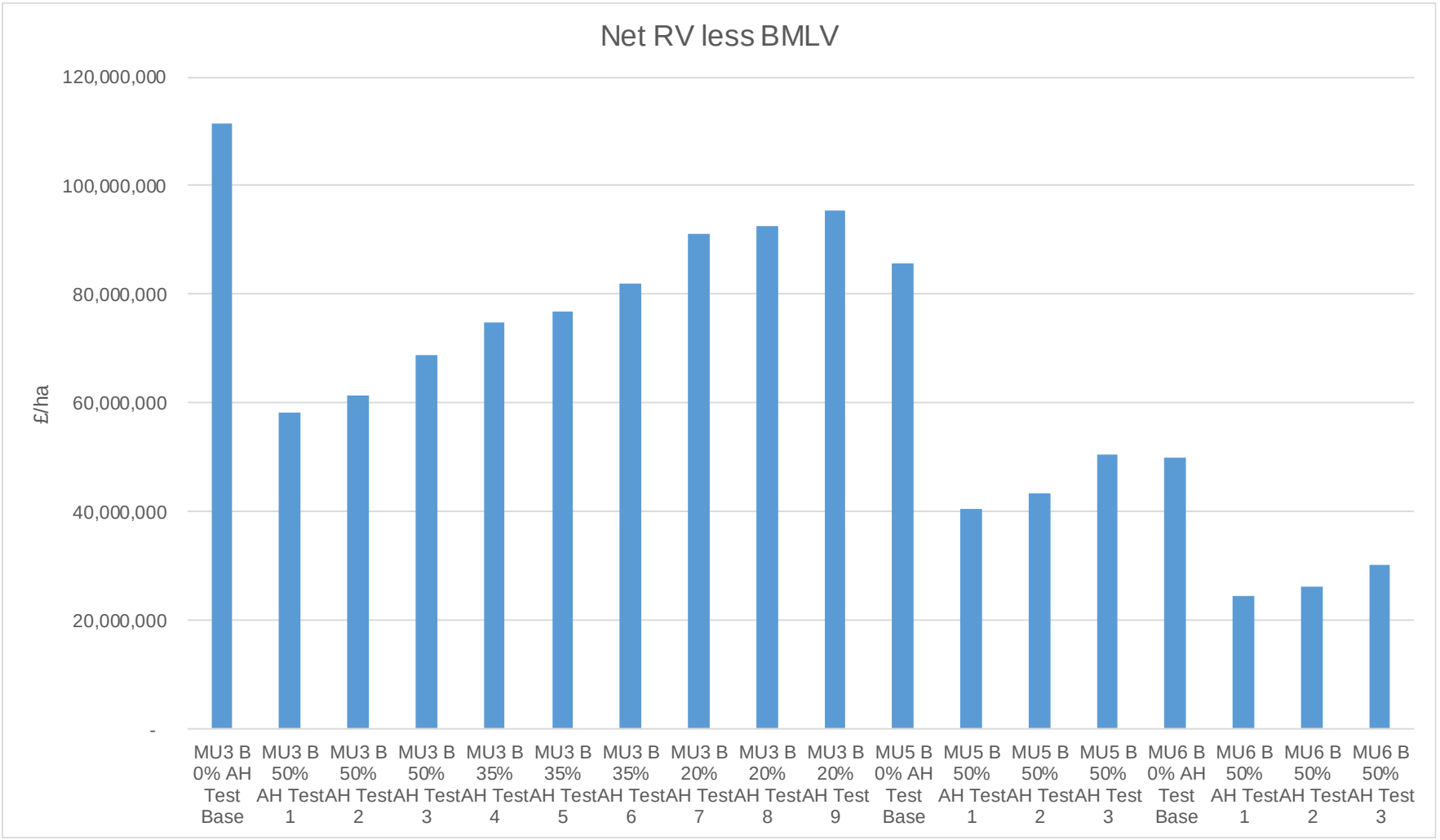


Figure 4.7: Large Scale (MU3, MU5, MU6) Net RV less BMLV per hectare in Value Band C

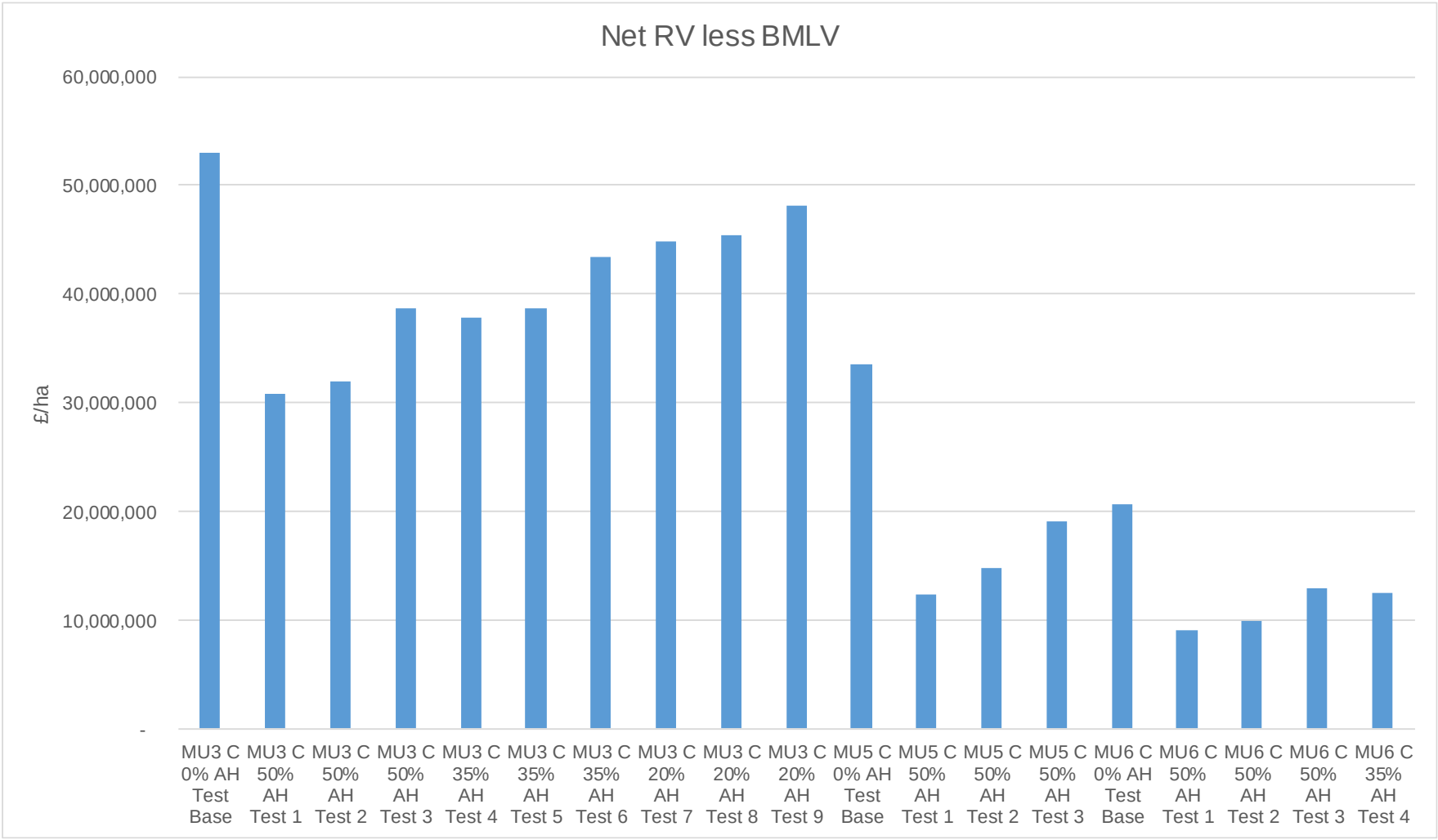


Figure 4.8: Large Scale (MU3, MU5, MU6) Net RV less BMLV per hectare in Value Band D

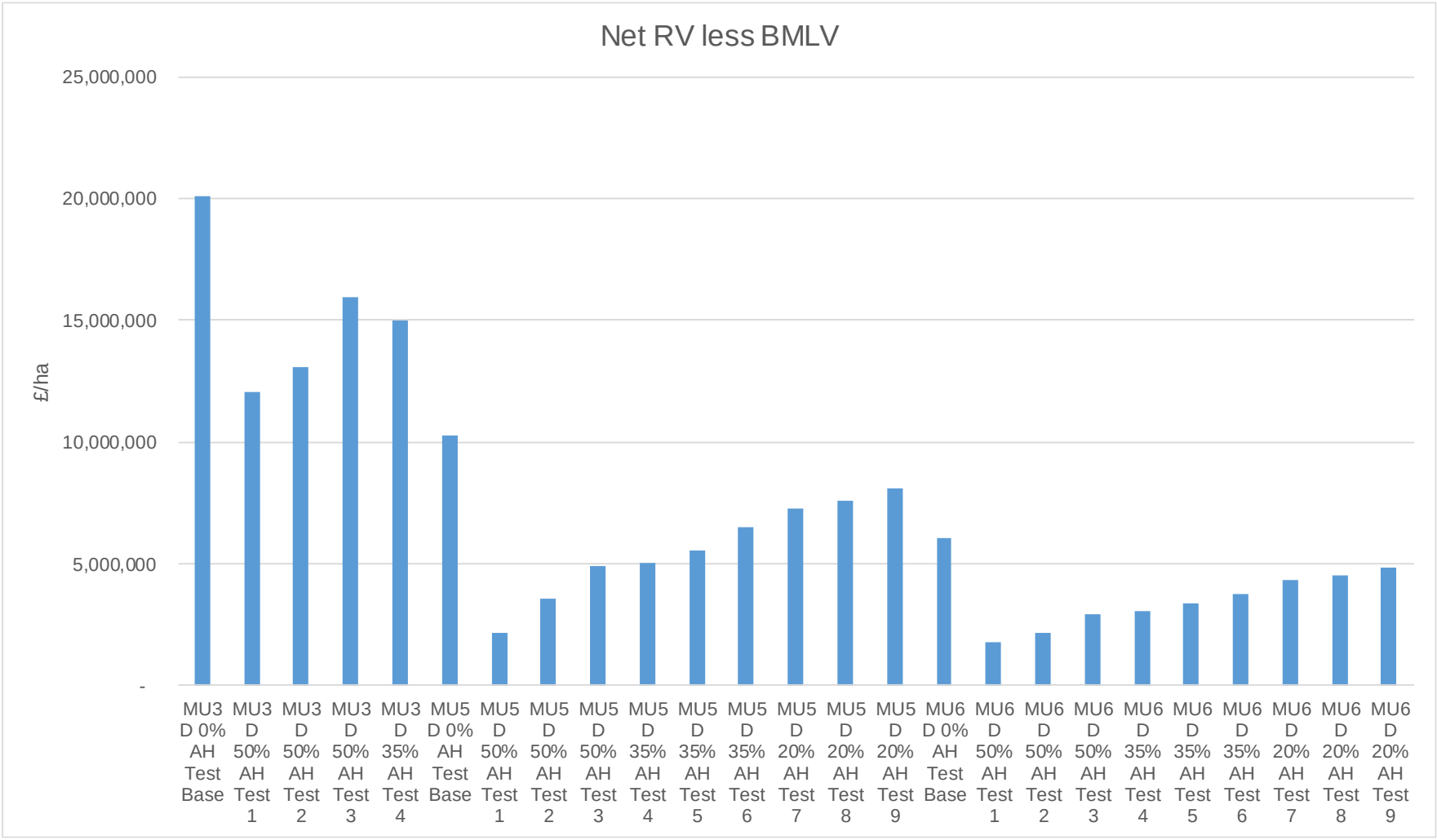


Figure 4.9: MU4 Estate Regeneration with varying developer return in value bands C, D & E

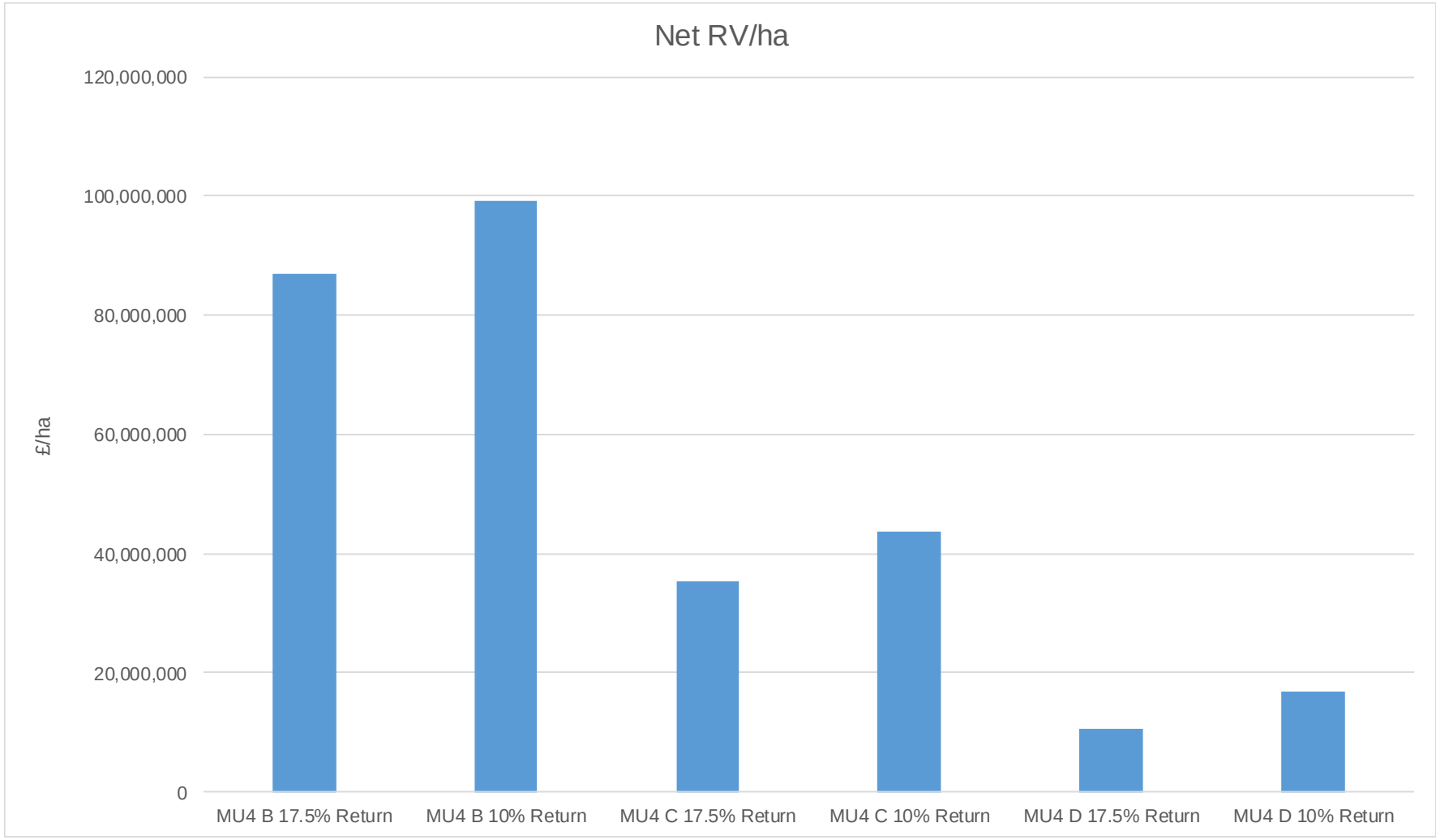


Table 4.5: MU4 Residual Value with Low Benchmark Land Values

	Net RV scheme £s including land finance and fees	Low BMLV £s	Net RV less BLV Low £s
MU4 B 17.5% Return	897,602,806	180,000,000	717,602,806
MU4 B 10% Return	1,027,114,488	180,000,000	847,114,488
MU4 C 17.5% Return	348,482,906	135,000,000	213,482,906
MU4 C 10% Return	437,494,915	135,000,000	302,494,915
MU4 D 17.5% Return	83,255,243	90,000,000	-6,744,757
MU4 D 10% Return	150,674,796	90,000,000	60,674,796

Conclusions

4.38 The large-scale mixed-use scheme tested has been found to be viable across the bands albeit to a lesser extent in lower value areas.

4.39 The supermarket/ residential schemes are viable in each of the value bands tested, although the version with more dwellings and a smaller quantum of retail is more viable. In lower value areas the scheme characteristics become more important, as the supermarket/ residential schemes with less housing but more retail become more marginal.

4.40 The estate regeneration scheme is capable of re-providing existing affordable housing on a like for like basis and providing additional affordable housing, particularly in the higher value areas.

4.41 Sensitivity Testing on these typologies is discussed in the next Chapter.

5 SENSITIVITY TESTING

Introduction

5.1 While the majority of inputs and assumptions in the testing remain unchanged from the LPVS, we have undertaken a number of sensitivity tests to assess the impact of a combination of alternative assumptions regarding development values and costs. A second set of tests combine these alternative assumptions with an assessment of projected changes in values and costs.

5.2 The first step in the process was to select case study sites that would be tested in this way. The sample selected, in consultation with the GLA, included residential and mixed-use case studies from the LPVS as well as the small and large sites tested in the Addendum Report. Case studies were selected to represent a range of development types, scale and density and have been tested in value bands that are appropriate to the typology.

Sample of case studies

5.3 The case studies selected for the sensitivity testing are set out in the table below.

Table 5.1: Case studies selected for sensitivity testing

Case Study	Type	Dwellings
LPVS		
Res3	Residential for sale	80
Res5	Build to Rent	80
Res9	Residential for sale	300
Res10	Residential for sale	750
Res11	Residential for sale	750
Res12	Build to rent	750
SR2	Student Residential	300 beds
MU2	Residential/ retail/ leisure/ office	1,500 plus commercial and community uses
Additional Small Sites		
RES17	Infill on garages site - 5 two storey houses	5
RES18	Demolition of 2 existing semi-detached houses - replacement with 16 flats	12
Additional Large Sites		
MU3	Large scale town centre scheme	3,000 plus commercial and community uses
MU4	Estate regeneration	4,500 – 1,600 social rent, 2,900 market plus commercial and community uses
MU5	Supermarket led mixed use.	750 plus commercial and community uses

Sensitivity tests

5.4 The sensitivity testing assumptions are set out in the table below which shows:

- The variable;
- The assumption used;
- Reason for its inclusion;
- To which case studies the assumption has been applied.
- The sensitivity tests were based on a selection of the affordable housing options used in the LPVS[18]. They were tests 3 (50%AH with 30% London Affordable

[18] See Table 9.1 in the LPVS

Rent: 70% Intermediate)[19], 4 (35%AH with 60% London Affordable Rent: 40% intermediate) and 6 (35%AH with 30% London Affordable Rent: 70% intermediate) for Residential for Sale schemes and Test 5 (35%AH with 50% London Living Rent: 50% Discounted Market Rent) for Build for Rent schemes[20].

[19] This reflects the minor suggested change to Policy H7 B which allows the tenure of affordable housing provided above 35% on private, public or industrial sites to be flexible (and which may comprise of intermediate tenures).

[20] This is consistent with the testing in the LPVS, however it should be noted that Policy 13C of the draft Plan allows for build to rent development to qualify for the Fast Track Route where 30% of the affordable units are provided at the equivalent rent to London Living Rent, with the remaining 70% at a range of genuinely affordable rents. Build to rent affordable housing Test 5 assumes a higher proportion of units at London Living Rents than required by the plan.

Table 5.2: Assumptions used in the sensitivity testing

Variable	Which case studies	Assumption used	Reason for inclusion
Residential market values	All	Adjusted market values as follows: **Band A** £19,714 **Band B** £12,185 **Band C** £8,500 **Band D** £6,350 **Band E** £4,675	Development values and costs have been reviewed in the market report set out in Chapter 2. This found that there have been modest increases in new build residential values in most parts of London since the date of values used to inform the LPVS. Changes in average new build values recorded by the Land Registry and Molior indicate a more significant level of increase in low value boroughs, with a slight decrease in Band A. Band E values were informed directly by Molior data. Of the typologies tested in the LPVS, Res 3 and 9 have been sensitivity tested in Value Band E, in line with the conclusions of the LPVS that lower density schemes were more likely to come forward in lower value areas based on current values.
Values for affordable housing (LAR and LSO)	All	Alternative capital values of: LAR – value for all units at £2,200/sq m LSO - value all unit sizes Band C - £5,100/sq m Band D - £ 4,700/sq m Band E - £3,900/sq m Affordable Student Accommodation values reduced to £129,000 in Band D and £127,000 in Band E.	To complement the evidence provided by the LPVS and the Addendum regarding affordable housing values (see Annex C), lower affordable housing values have been tested as a sensitivity. LSO values in Band E have been increased reflecting rising market values in the lowest value areas (see Chapter 2). Affordable Student Accommodation values in Bands D and E have been reduced to bring these in line with market values.

Variable	Which case studies	Assumption used	Reason for inclusion
Ground rent	All	Two tests used; i) Nil ground rents on houses, ground rents on flats as follows: £600 pa (Band A), £500pa (B), £450pa (C), £350pa (D), £300pa (E) with a yield of 4.5% ii) Nil ground rent for flats and houses	The Government is consulting on amendments to ground rents. While the outcome of this is currently unknown and changes are yet to be made, the sensitivity testing applies a zero ground rent to houses and lower ground rents and more conservative yields. Further sensitivity tests were carried out assuming a nil ground rent scenario for both houses and flats[21]. The LPVS applied nil ground rents to build to rent schemes, which is unchanged in the sensitivity testing.

[21] Nil ground rents may result in higher residential prices as available purchaser expenditure will increase. Given this, together with the fact that proposed changes are still subject to consultation and revised legislation is not yet available, the testing of a nil ground scenario can be considered to be a conservative assumption.

Variable	Which case studies	Assumption used	Reason for inclusion
Build costs/ Urban greening	All Except Res 17 – reflecting its size	The sensitivity testing has been undertaken using amended build costs equivalent to the LVPS base build costs but without an uplift of 8.55% of build costs for external works. A separate allowance of £41.50 sq m of floorspace for premium cost urban greening types has been used. Policy G5 enables applicants to determine the most appropriate approach in meeting the interim target for each site. Most urban greening types identified in the policy are typical within landscape design and are incorporated in base build costs. An additional cost for premium urban greening types has however been applied to all development floorspace. Turner and Townsend have identified a cost premium at an average of £41.50 /sq m of site area based on recent London proposals and cost rates from the City of London report in Green Space Factors, dated June 2018. This has, however, been applied as a cost on development floorspace rather than site area which increases the cost and is a conservative approach.	Turner and Townsend have reviewed additional benchmark schemes since the LPVS, supplemented with viability cost reviews submitted to the GLA for large development proposals over the same period. The additional scheme information indicates that costs are equivalent to the LPVS base build costs but without an uplift of 8.55% for external works. The sensitivity test applies base build costs without the additional external cost allowance which were reflected in the benchmark costs used to inform the base costs. However an additional cost for premium urban greening types has been applied. This is considered further at Annex D.

Variable	Which case studies	Assumption used	Reason for inclusions
CIL	All	CIL has been applied at 66 per cent of rates used in the 2017 Study For Res17 and Res18, with a known existing floor area, CIL was applied to the net additional area only	The LPVS applied borough and Mayoral CIL on all new floorspace which it recognised was a conservative approach and is likely to overstate CIL costs in many cases. Under the CIL Regulations 2010 (as amended), CIL is typically charged on net additional floorspace. The LPVS testing included a demolition cost for every typology and so it is reasonable to assume an amount of existing floorspace when determining CIL. In view of this the sensitivity testing has applied CIL at 66 per cent of LPVS costs. While the proportion of net additional floorspace will vary from site to site this is a reasonable scenario to test for a strategic study and has been informed by GLA analysis of the London Development Database of the average proportion of net additional floorspace in developments in London.
Finance costs on developer and contractor return	2017 Case Studies (Applied as baseline to 2018 Small and Large Sites)	The developer's return is drawn down at the project end stage.	To ensure development finance is not calculated on the profit amounts in a cashflow which is one of the recognised approaches to viability testing.
Return on affordable housing applied to revenue	2017 Case Studies (Applied as baseline to 2018 Small and Large Sites)	The return allowed for affordable housing is unchanged (at 6%) but is applied to the value of the affordable housing rather than to costs.	Some commentators noted this approach which is an alternative method in viability testing and consistent with PPG on Viability (July 2018).

Variable	Which case studies	Assumption used	Reason for inclusions
School/Nursery provision/Health facilities	2017 Case Study MU2	Any requirement for education facilities will be funded through CIL/ S106 and/or through the Education and Skills Funding Agency. Costs for nursery provision and health facility as per the LPVS but with income derived on same basis as for 2018 Large Sites.	Section 106 and CIL costs have been included in the testing. CIL Regulations 2010 (as amended) allow for the in-kind provision of community infrastructure. The Education and Skills Funding Agency makes funding available for new school places to accommodate additional demand.
Development programme	2017 Study Res3, Res9, Res10, Res 11	See Annex E	Sensitivity tests to assess longer development programme.
Heat pumps	Limited testing in MU3 and MU5	A further sensitivity test was run with amended costs for energy infrastructure with an additional £11/sq m build cost identified regarding costs of heat pumps compared with baseline district heating network.	To consider the use of heat pumps within the heating hierarchy set out at Policy SI2. Informed by research commissioned by GLA (Low Carbon Heat: Heat Pumps in London, Etude).
Additional abnormal costs	All	£183/sq m	As in the LPVS
Availability of grant	All	LAR - £60,000 Intermediate - £28,000	The Mayor's Affordable Homes Programme Funding Guidance 2016-21 sets out a grant rate of £28,000 per affordable unit and £60,000 per unit for London Affordable Rent units (and for MU4, social rented affordable housing). This reflects the higher grant rates available to LAR for Approved Providers under the Mayor's funding guidance who have access to grant across their portfolio. An Addendum to the Mayor's guidance was published in 2018 setting out higher grant rates for additional low cost rent and intermediate units brought forward before the end of the funding period, however these higher rates have not been tested.

Variable	Which case studies	Assumption used	Reason for inclusions
Projected Values and costs	All	• Market Sales Revenue (including shared ownership) - 4.0% per annum; • Market Build to Rent Revenue- 2.5% per annum; • Commercial Revenue (Mixed Use scheme and student accommodation only) - No increase; • Affordable Rent Revenue (LLR and LAR) - 2.0% per annum; • Build and Development Costs[22] - 2.5% per annum.	To consider how possible changes in costs and values over the life of the London Plan would affect viability. Generally regarded as good practice in area wide viability studies. The LPVS approach is applied in the sensitivity testing which takes into account the plan period of 2019 to 2041 and long term residential market trends (see Chapter 2).

LPVS Sensitivity Testing Results

5.5 The results from the sensitivity testing for the LPVS case studies are summarised in this section of the report. A full set of results is shown in Annex F.

5.6 It is worth noting that different parts of the sensitivity tests will have various effects on the different case studies. Across the board factors such as the different affordable housing values and ground rents will reduce viability, while the revised build costs, CIL adjustments and removal of finance on developer returns will improve viability. For MU2, the sensitivity tests assume that development is phased and that the land purchase follows this phasing. This improves viability.

Value Band A

5.7 RES11, RES12 and MU2 were sensitivity tested in Value Band A against the lower BMLV:

- For RES11 the sensitivity tests resulted in a reduced residual value per hectare (RV/ha) and the test with a nil ground rent reduced it further, although the case study remained viable at each of the affordable housing tests (see above). The projected change in values and costs scenario produced a higher net RV indicating stronger viability;
- For RES12 and MU2 the sensitivity test improved the RV/ha. Viability was strengthened further in the projected values and costs scenario which was the case in each of the value bands;
- All of these sensitivity tests are also viable against the mid BMLVs, and all except the 50% affordable housing test for RES11 are viable against the high BMLV.

[22] inc CIL & planning obligations

Value Band B

5.8 RES11, RES12 and MU2 were sensitivity tested in Value Band B and the results are similar to those in Value Band A:

- For RES11 the sensitivity tests resulted in a reduced RV/ha although this remained viable;
- For RES12 and MU2 the sensitivity test resulted in an improved RV/ha;
- All of these sensitivity tests are also viable against the mid and high BMLVs.

Value Band C.

5.9 RES3, RES5, RES11, RES12 and MU2 were sensitivity tested in Value Band C:

- For RES3 and RES11 the sensitivity tests reduced the RV/ha but remained viable. For RES5, RES12 and MU2 the sensitivity test improved the RV/ha;
- The sensitivity tests for RES3, RES5, RES12 AND MU2 are all viable against the mid and high BMLVs. RES11 is only viable against the lower BMLV, except for test 6 which exceeds the mid BMLV.

Value Band D

5.10 RES3, RES5, RES9, RES12 and MU2 were sensitivity tested in Value Band D:

- For RES3 and RES9 the sensitivity tests reduced the RV/ha but remain viable;
- For RES5, RES12 and MU2 the sensitivity test improved the RV/ha. The base testing showed that RES12 was not viable in D and the sensitivity tests increase the RV so that this test is now viable in this value band;
- RES3, RES5 and RES9 are viable against the mid and higher BMLVs, and MU2 is viable against the mid BMLV. RES12 is only viable against the lower BMLV.

Value Band E

5.11 RES3 and RES9 were sensitivity tested in Value Band E:

- For RES3 the sensitivity test reduced the RV, although the case study remained viable. For RES9 the impact of the sensitivity test varies depending on the tenure mix – for test 3 and test 6 the sensitivity tests improve the viability while for test 4 it reduces the viability – but all tests are viable. This largely reflects the proportion of different affordable housing tenure in these tests and changes in affordable housing values set out in Table 5.2;
- Both RES3 and RES9 also exceed the mid BMLV.

Student Accommodation

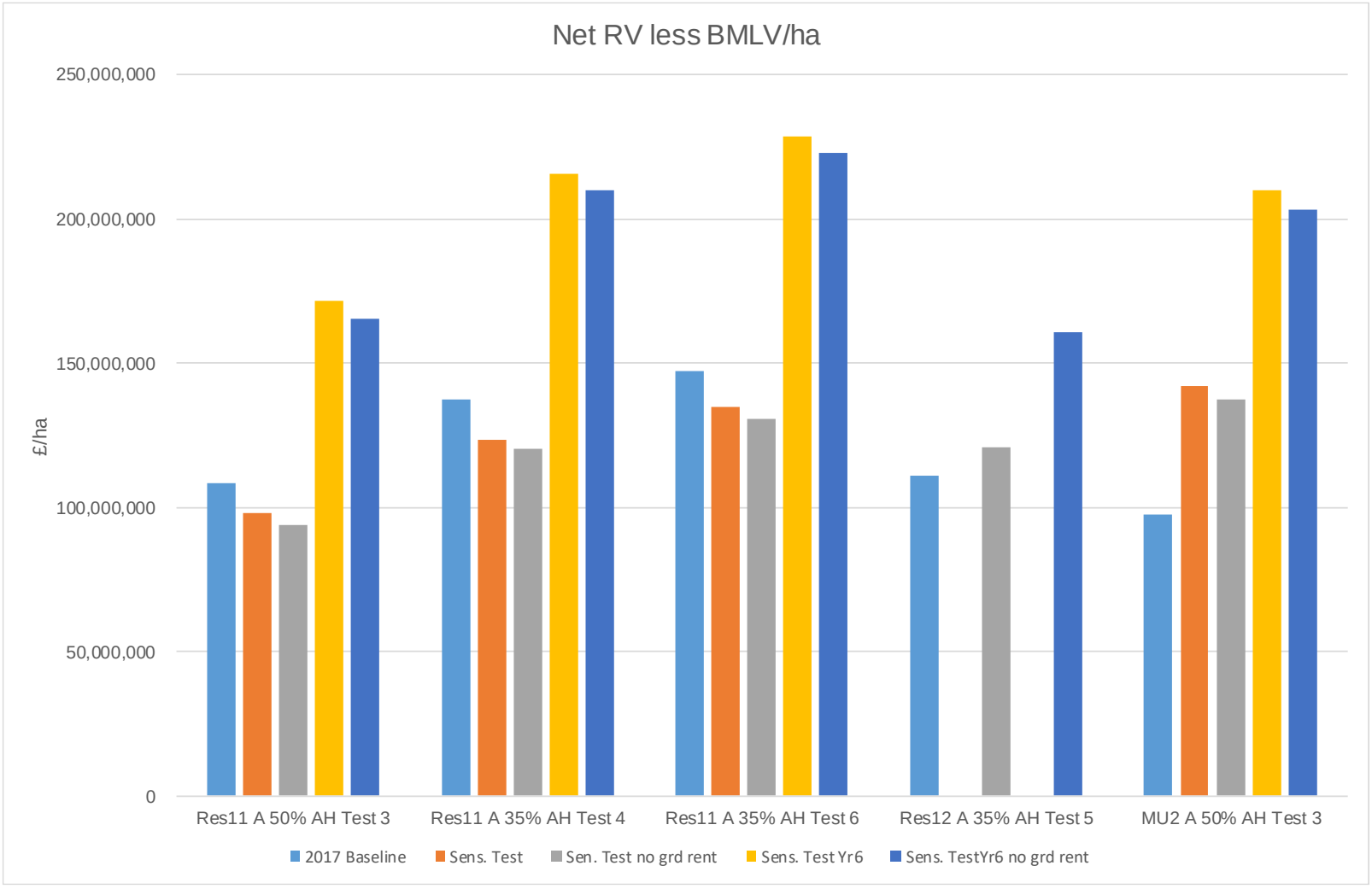
5.12 Case study SR2 was sensitivity tested in all value bands. The sensitivity test increased the net RV in value bands A, B and C, but this reduced in value bands D and E, as a result of the reduced affordable student accommodation values tested in these value bands. When the projected change in values and costs scenario is tested the viability is weakened, which is the result of the underlying assumptions that include an increase in costs in the same way as other development types but no change in values (except for affordable student accommodation values in value

bands D and E). However, the case study remains viable under the sensitivity tests in all value bands.

5.13 SR2 is also viable against the mid and higher BMLVs except for value band A, where it is viable against the mid BMLV.

5.14 Further information on the student accommodation values for schemes associated with an educational institution is provided at Annex G.

Figure 5.1: LPVS Case Studies Sensitivity Tests Net RV less lower BMLV/ha in Value Band A[23]



[23] The Sens Test Yr6 in this and subsequent graphs indicate the projected values and costs scenario as applied in the LPVS – see Table 5.2 above. No ground rent scenario has been tested for Res 12 as this is a BtR scheme which was tested without ground rent in all scenarios.

Figure 5.2: LPVS Case Studies Sensitivity Tests Net RV less lower BMLV/ha in Value Band B

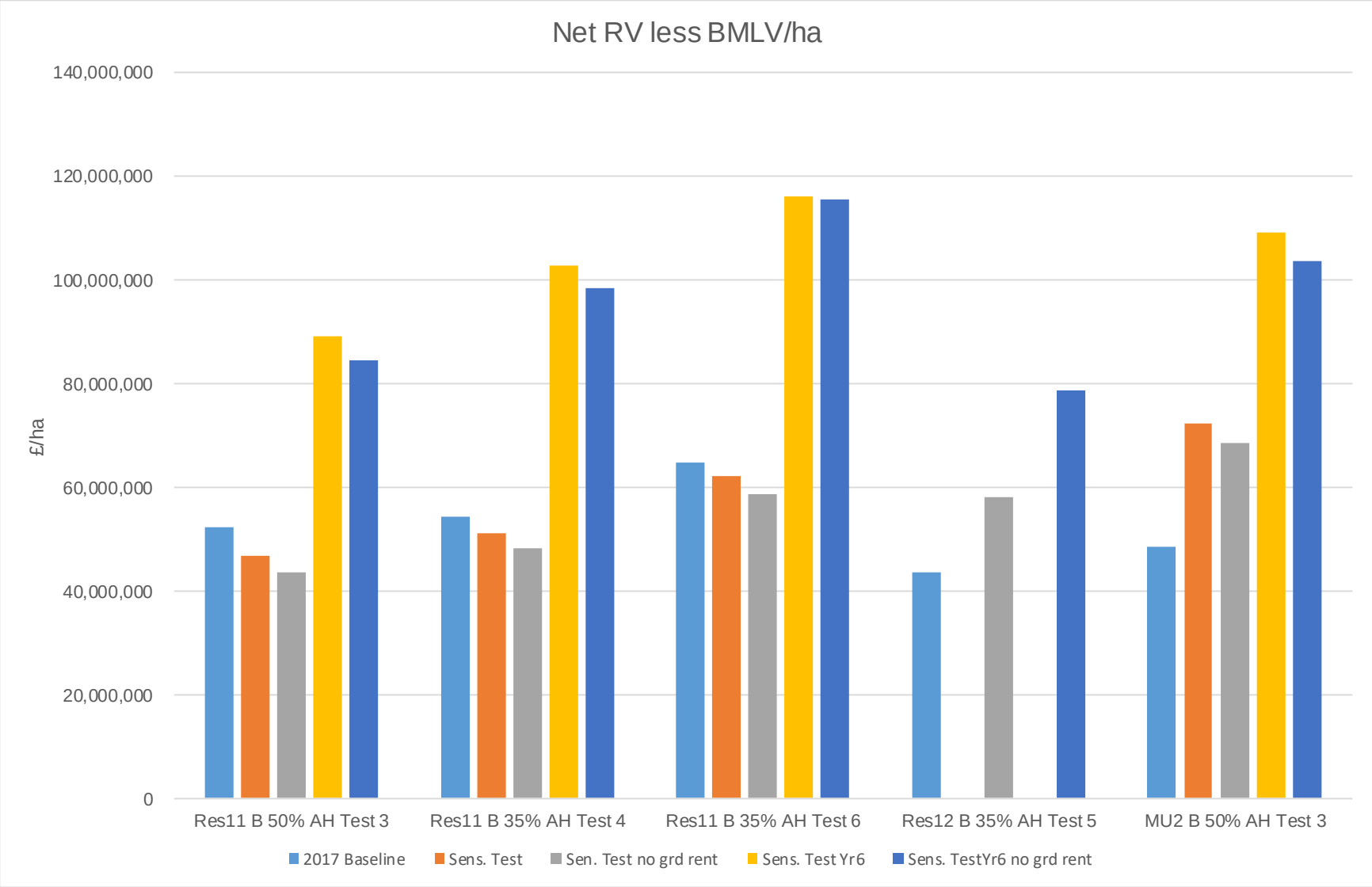


Figure 5.3: LVPS Case Studies Sensitivity Tests Net RV less lower BMLV/ha in Value Band C

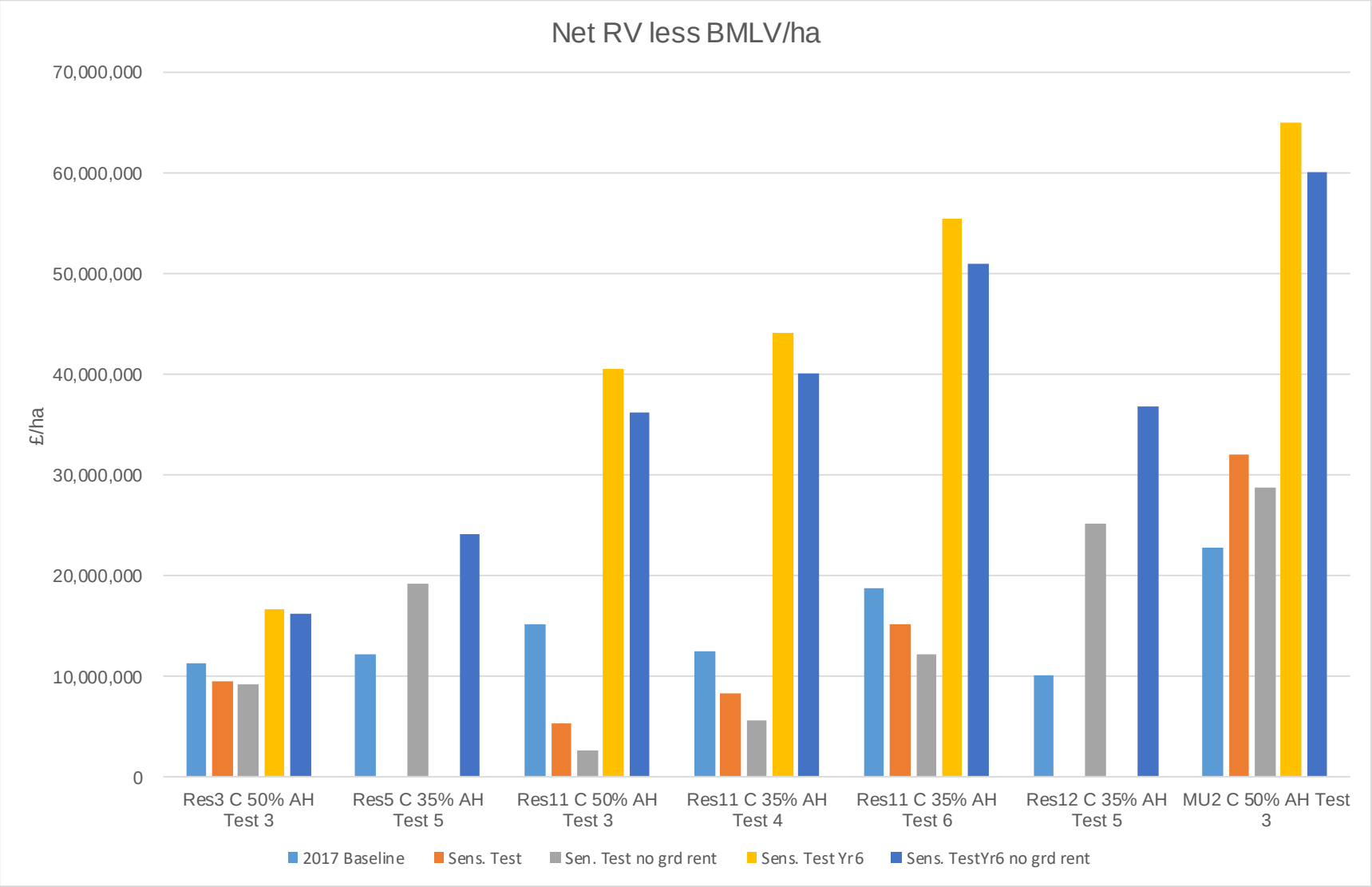


Figure 5.4: LPVS Case Studies Sensitivity Tests Net RV less lower BMLV/ha in Value Band D

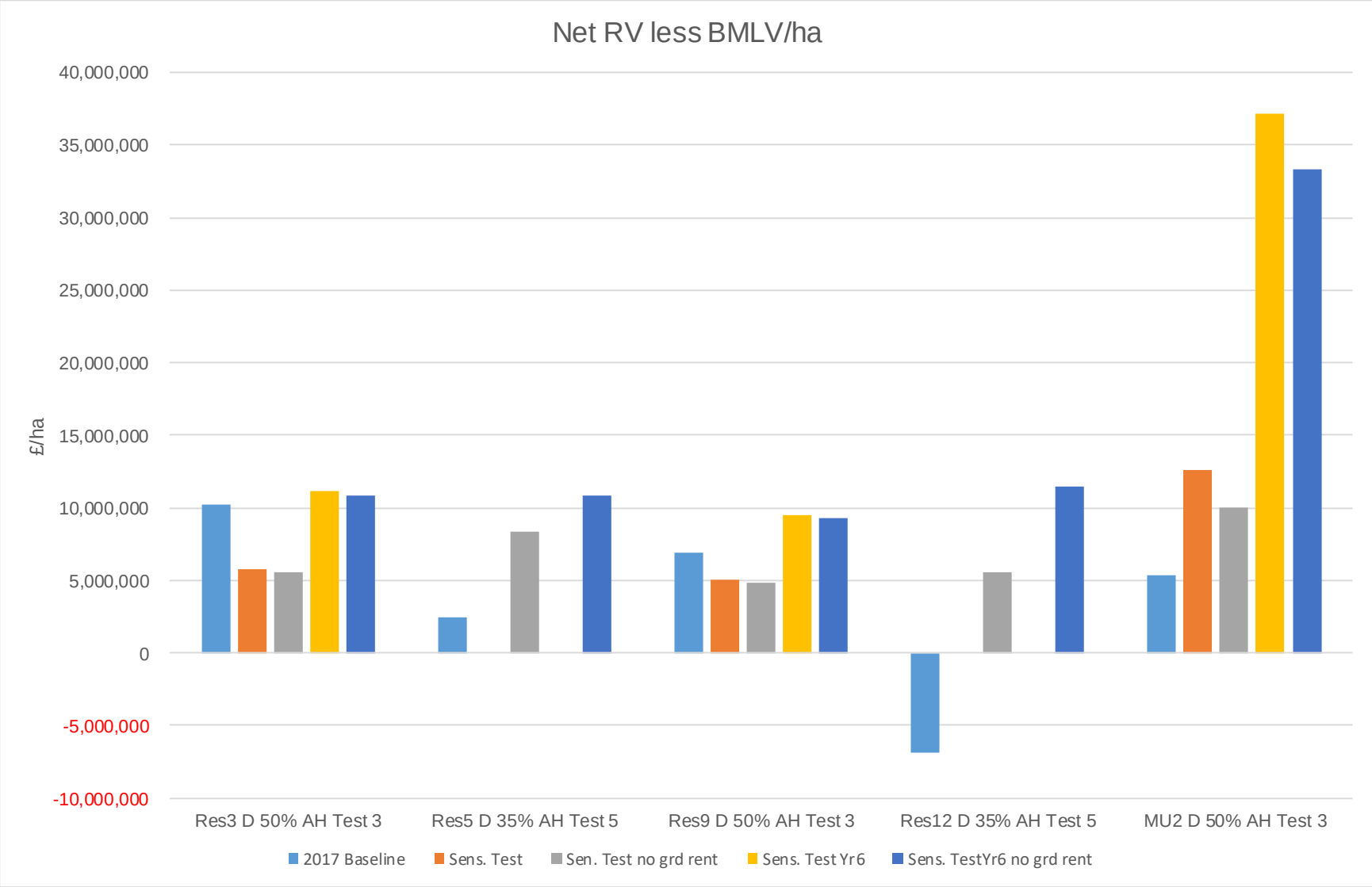


Figure 5.5: LPVS Case Studies Sensitivity Tests Net RV less lower BMLV/ha in Value Band E

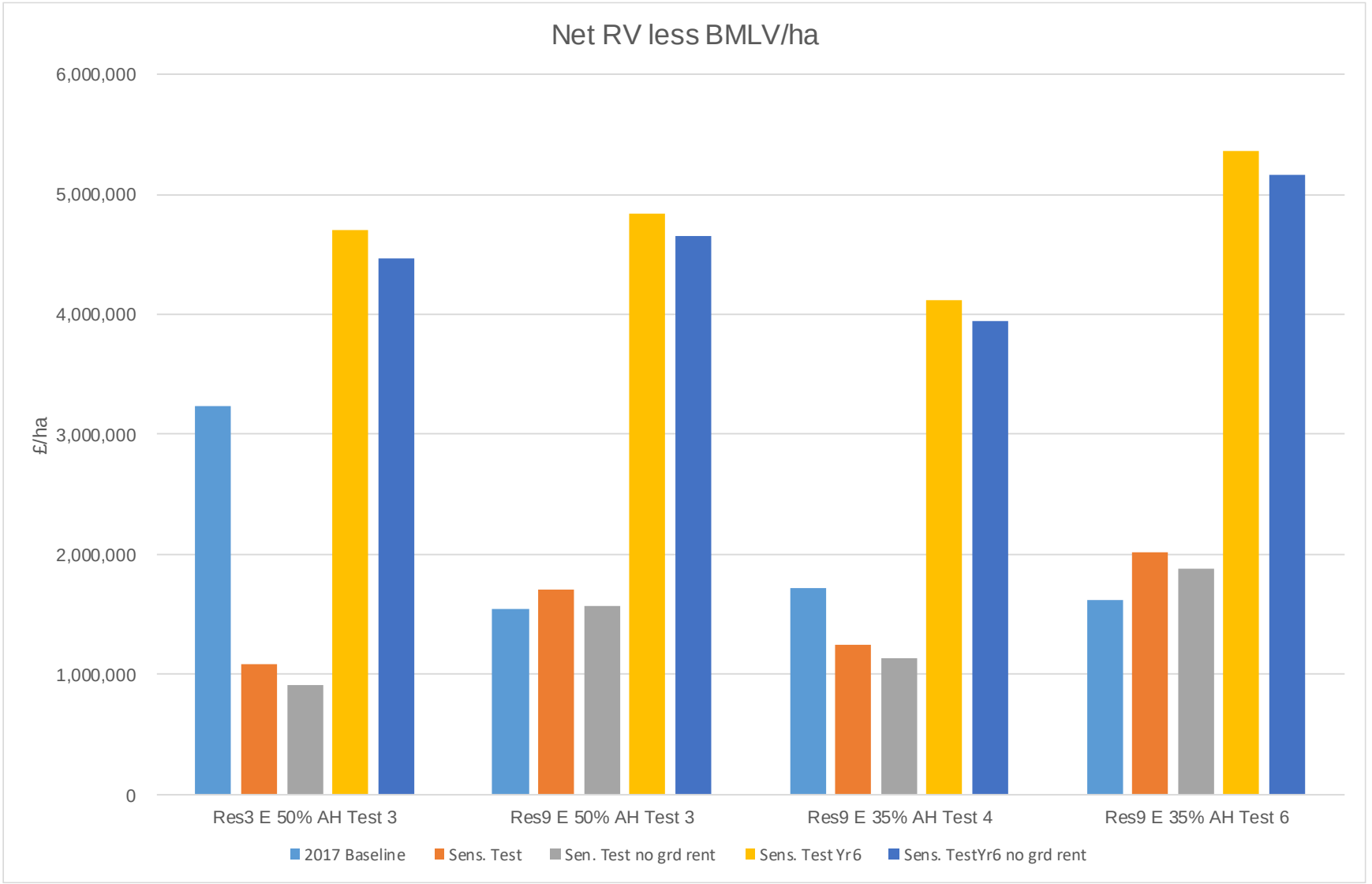
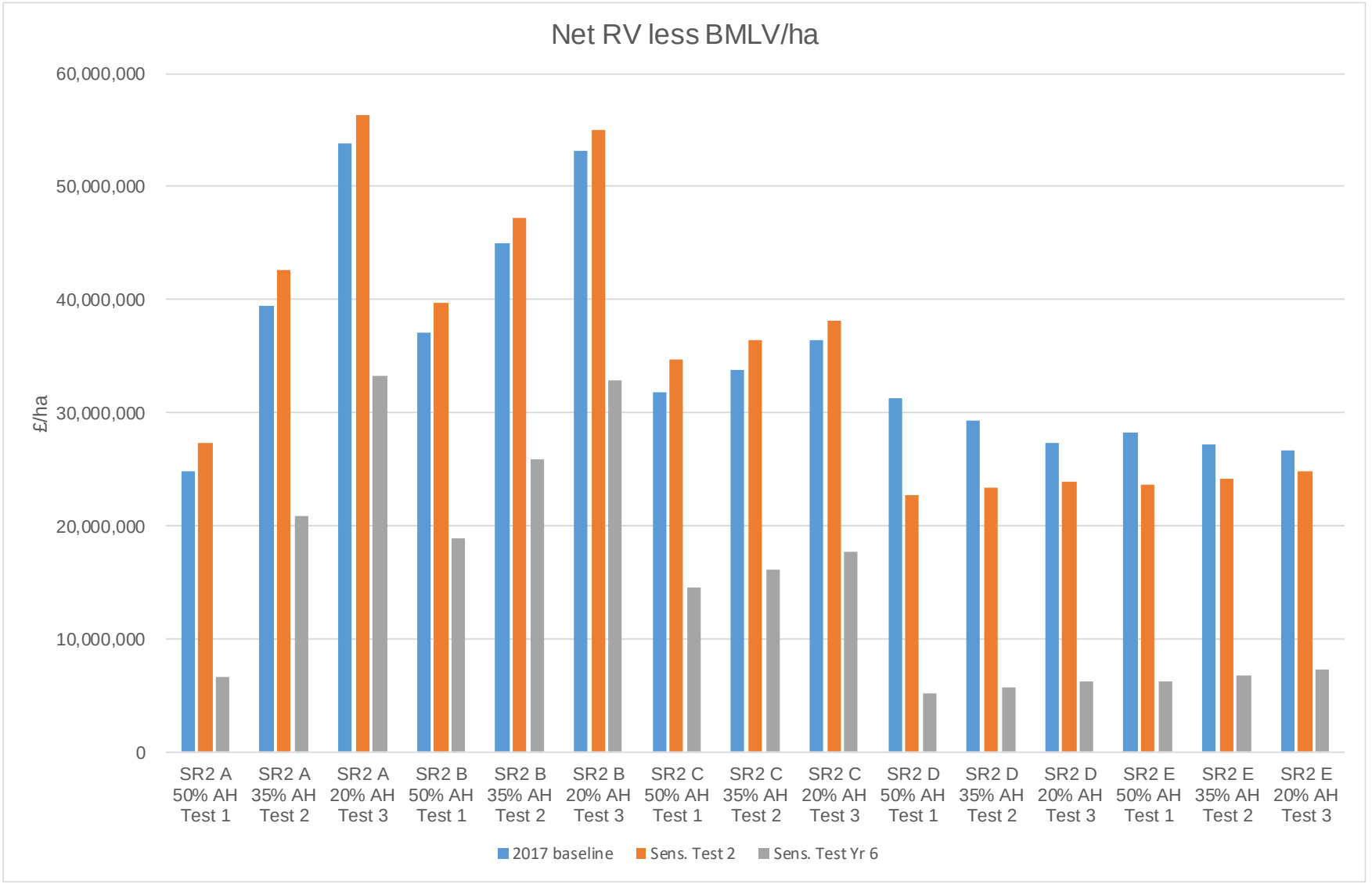


Figure 5.6: LPVS SR2 Sensitivity Tests Net RV less lower BMLV/ha



Small Sites Sensitivity Testing Results

5.15 RES17 and RES18 were sensitivity tested in each value band and the testing is compared to the BLVs in table 4.3. Again, results are presented as scheme residual values less the site BLV estimate, as opposed to the equivalent value *per hectare* used for the larger sites. RES17 is not sensitivity tested with the removal of ground rent as it was not applied at the outset.

5.16 The results from the sensitivity testing for the small sites case studies are summarised in this section of the report. A full set of results is shown in Annex H.

Value Band A

5.17 The impact of the standard sensitivity test (either with or without ground rent) is that the net RV of both case studies are reduced. The impact on RES17 is slight, while there is a bigger impact on RES18 as the affordable housing values are amended as well. However, both RES17 and RES18 remain viable in this value band. The net RV increases in the projected values and costs scenario.

Value Bands B and C

5.18 A similar pattern of findings is apparent in Value Band B and C. The net RV of the scheme is reduced by the standard sensitivity test, but both RES17 and RES18 remain viable in this value band. Removing ground rent makes a small impact to RES18 on the net residual values. The net RV increases in the projected values and costs scenario.

Value Band D

5.19 In Value Band D RES17 remains viable but RES18 is marginally unviable with ground rent and unviable without ground rent. By comparison, the base case RES18 was viable in this value band. Res 18 is viable in the projected values and costs scenario.

Value Band E

5.20 In Value Band E, RES17 remains viable but RES18 is unviable with or without ground rent. However, RES18 is viable in the projected values and costs scenario.

Figure 5.7: Small Sites Sensitivity Tests Net RV less BLV in Value Band A

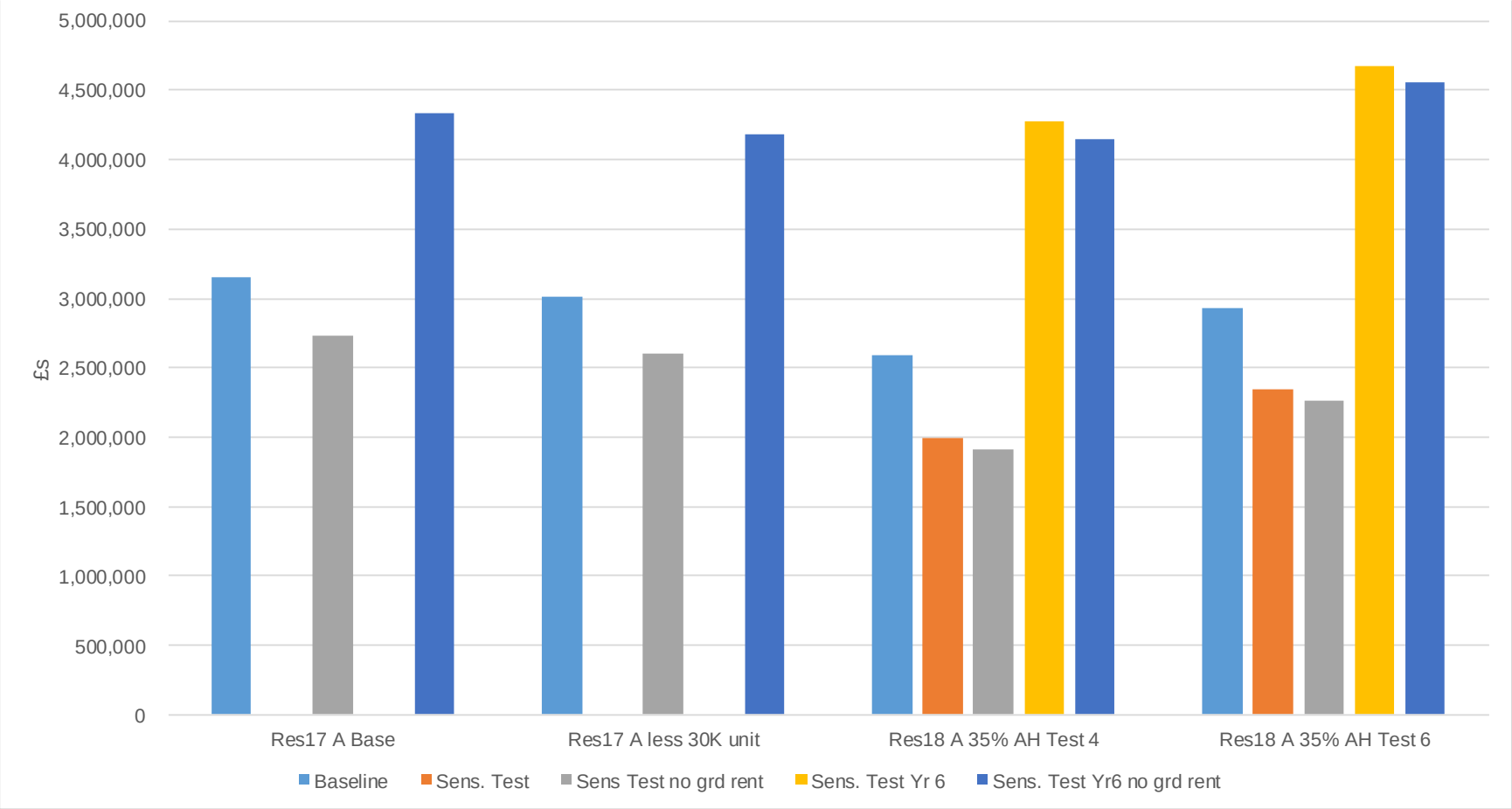


Figure 5.8: Small Sites Sensitivity Tests Net RV less BLV in Value Band B

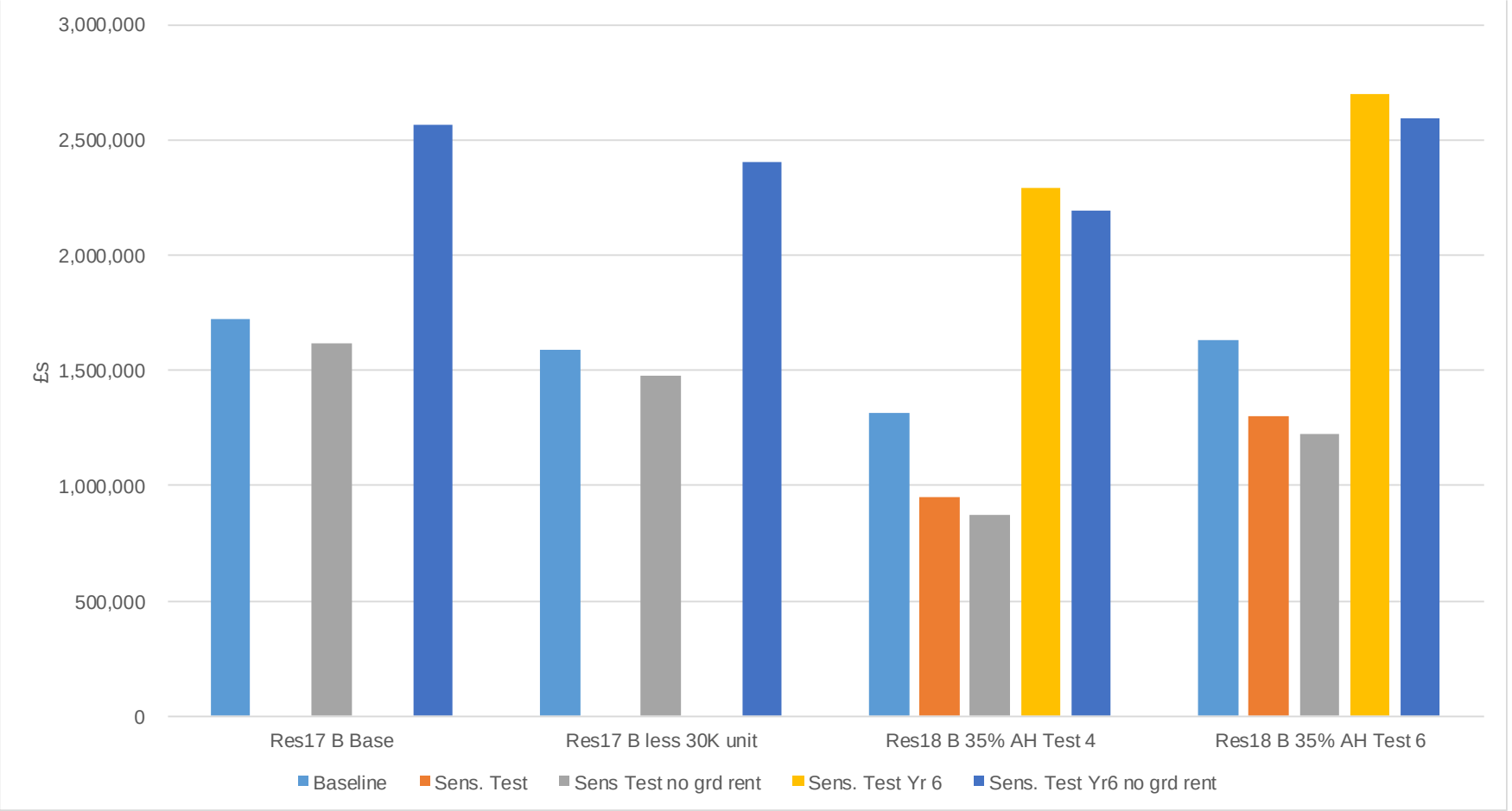


Figure 5.9: Small Sites Sensitivity Tests Net RV less BLV in Value Band C

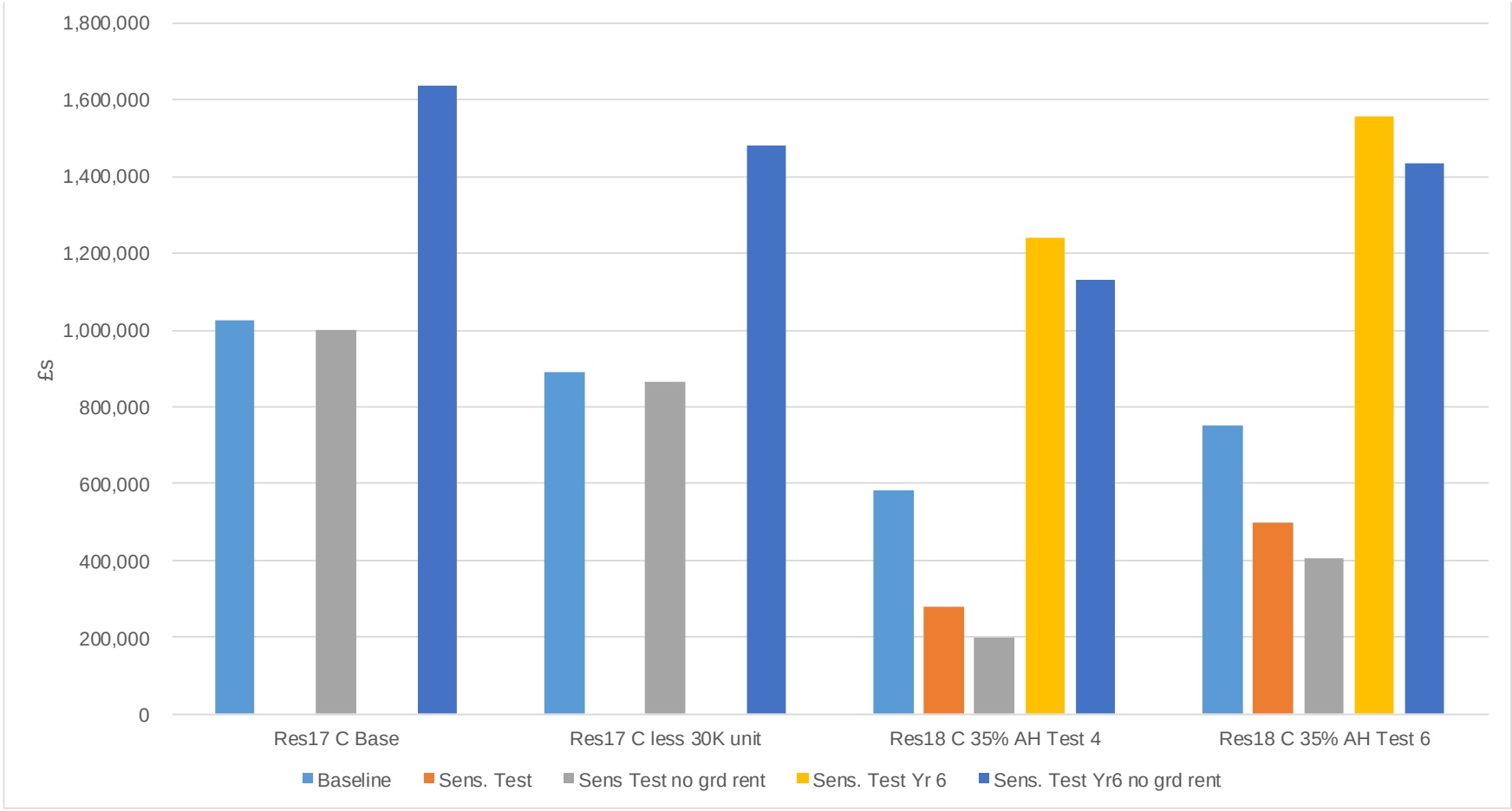


Figure 5.10: Small Sites Sensitivity Tests Net RV less BLV in Value Band D

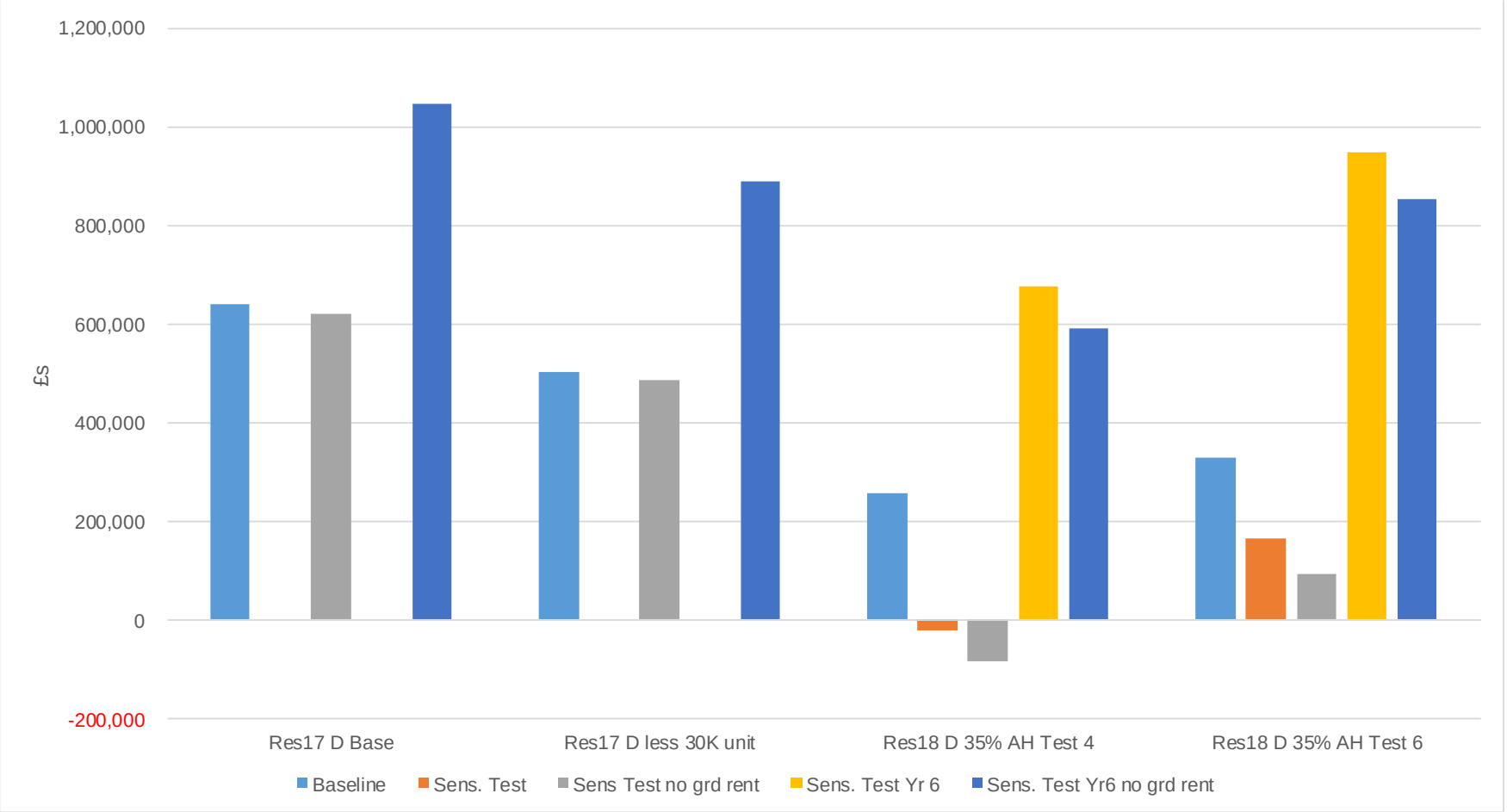
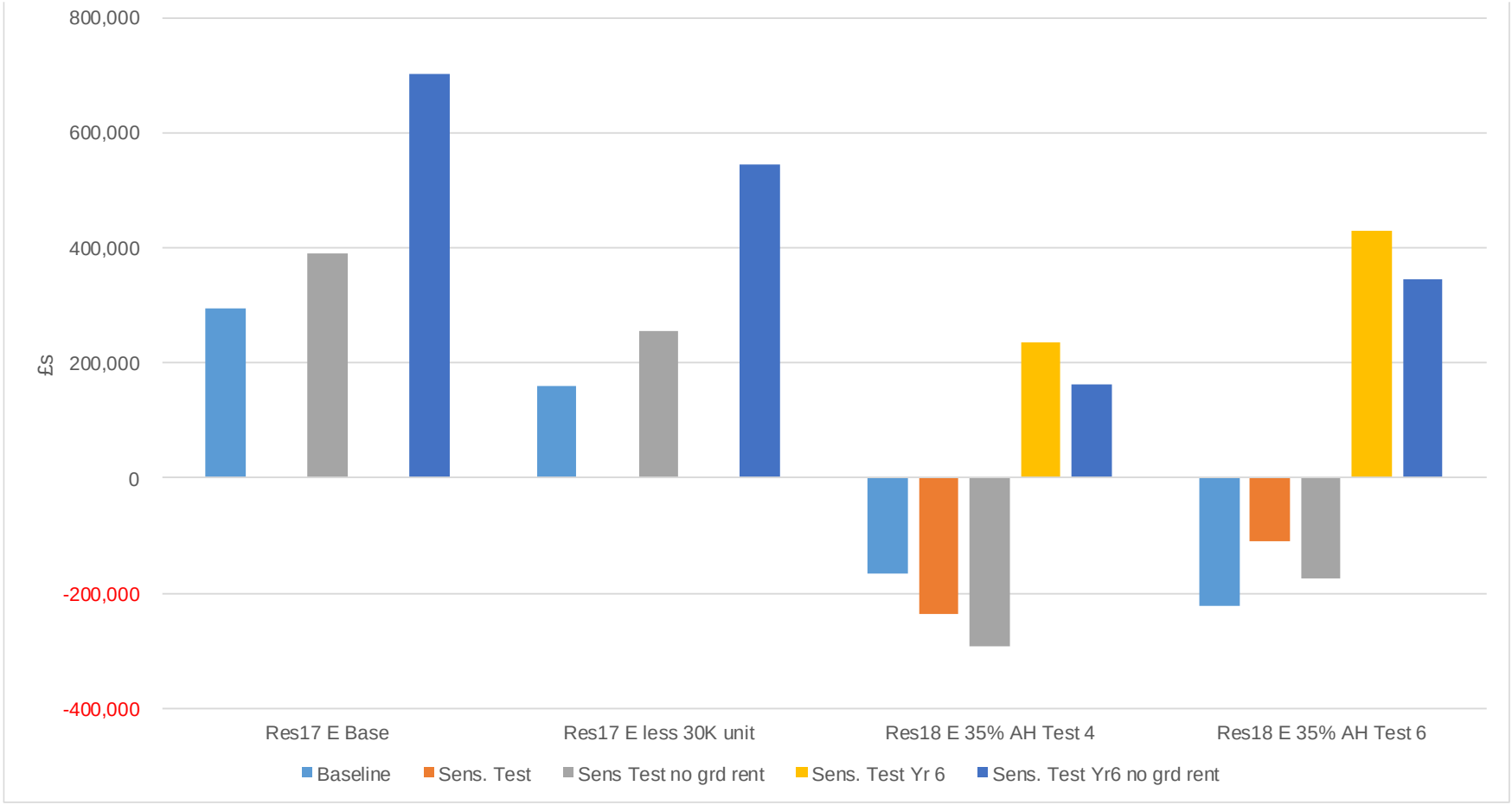


Figure 5.11: Small Sites Sensitivity Tests Net RV less BLV in Value Band E



Large Sites Sensitivity Testing Results

5.21 The results from the sensitivity testing for the large sites are summarised in this section of the report. The results are shown in Annex I. The first set of graphs that follow illustrate the results of the large site sensitivity testing. These show MU3, MU4 and MU5 base sensitivity tests. The second set show the effect of abnormal costs and grant scenarios.

MU3 and MU5 (in value bands B, C and D)

5.22 The most significant change in the sensitivity testing for the large sites arises from the scenario with projected values and costs assumptions in line with the approach in the LPVS (see Chapter 2). Changes in ground rents and inclusion of any additional cost assuming the use of energy infrastructure involving heat pumps have a relatively minor effect in comparison.

5.23 In comparison to the baseline position in band B the tests have little impact other than the projected change in values and costs sensitivity. In band C the sensitivity tests marginally reduce the viability position which is improved with the amended projected values and costs scenario. In band D the affordable housing scenarios with a greater proportion of intermediate housing (Test 3 and 6) are more viable than those with a greater proportion of low cost rented housing (Test 4), but again all remain viable.

5.24 MU3 remains viable with the mid BLV and generally viable with high BLV across the value areas. MU5 is viable at mid BLV for some of the tests but is generally not viable at the high BLV.

MU4

5.25 The sensitivity testing for MU4 significantly improves viability, with a higher (when compared to the base position) RV across all the value areas. This indicates that the re-provision of the existing social rented units can be achieved on a like for like basis and that additional affordable housing can be provided, particularly in the higher value areas.

Abnormal costs and introduction of grant for MU3, MU4 and MU5 in Value Bands B-D

5.26 The effect of an additional abnormal cost allowance is to reduce the viability of each of the tested schemes, whereas, as would be expected, the introduction of grant improves the viability.

5.27 For MU3 the tests remain viable with the introduction of abnormal costs, albeit with a reduced surplus over the benchmark land value. For MU5 and MU6 the same pattern is maintained however the tests become more marginal in lower value areas. Again, the introduction of grant improves viability.

5.28 MU3 remains viable with the mid BLV and generally viable with high BLV across the value areas. MU5 is viable at mid BLV for some of the tests but is generally not viable at the high BLV.

5.29 For MU4 a similar pattern emerges with the abnormal cost scenario reducing viability, which becomes more marginal in lower value areas, albeit still positive and with improved outcomes when grant is available.

5.30 The graphs that follow indicate the net residual value less the low BLV. The residual value when assessed against the mid and high BLVs are considered above and in Annex I.

Figure 5.12: Large Sites Sensitivity Tests Net RV less BMLV in Value Band B

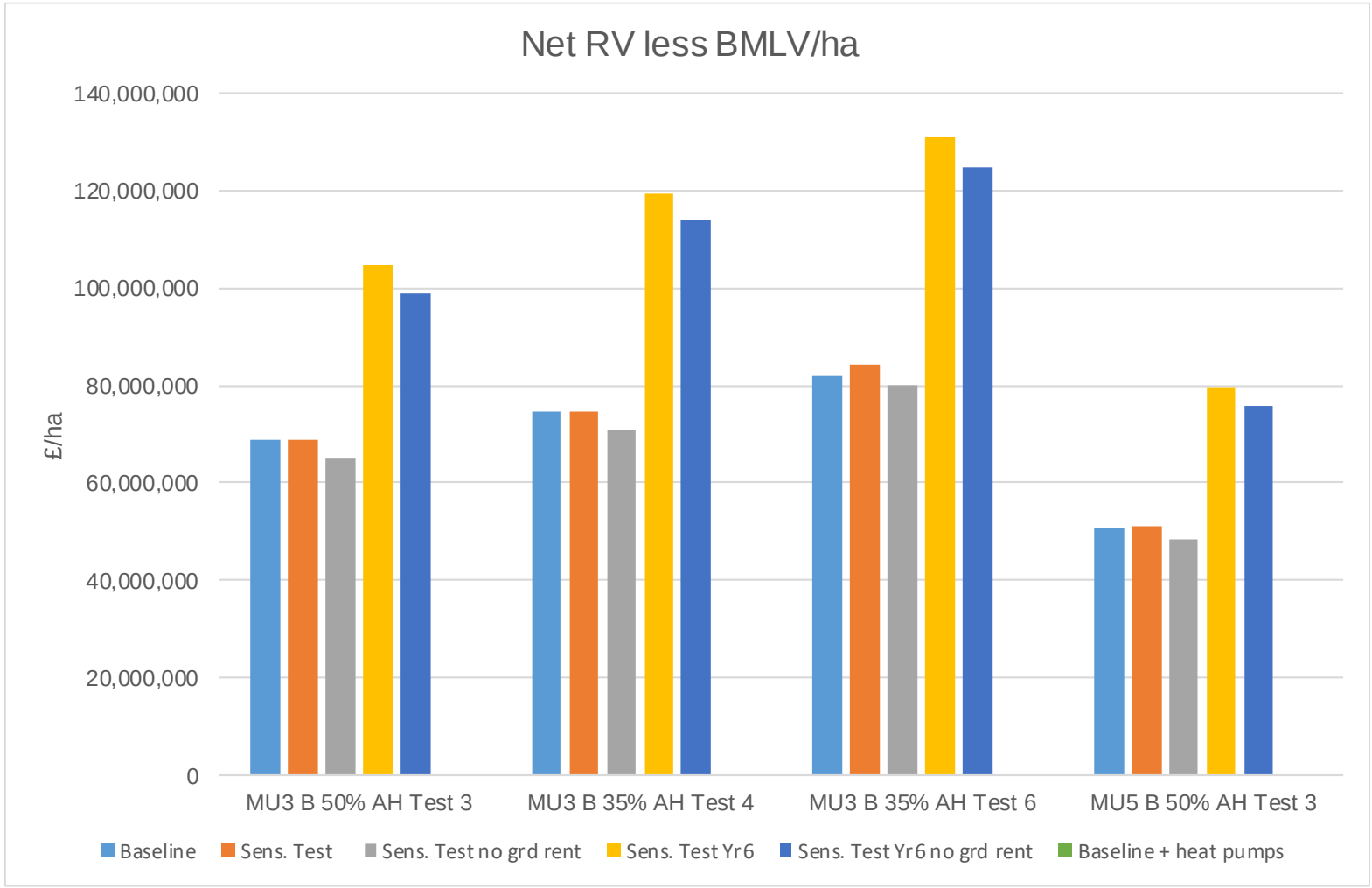


Figure 5.13: Large Sites Sensitivity Tests Net RV less BMLV in Value Band C

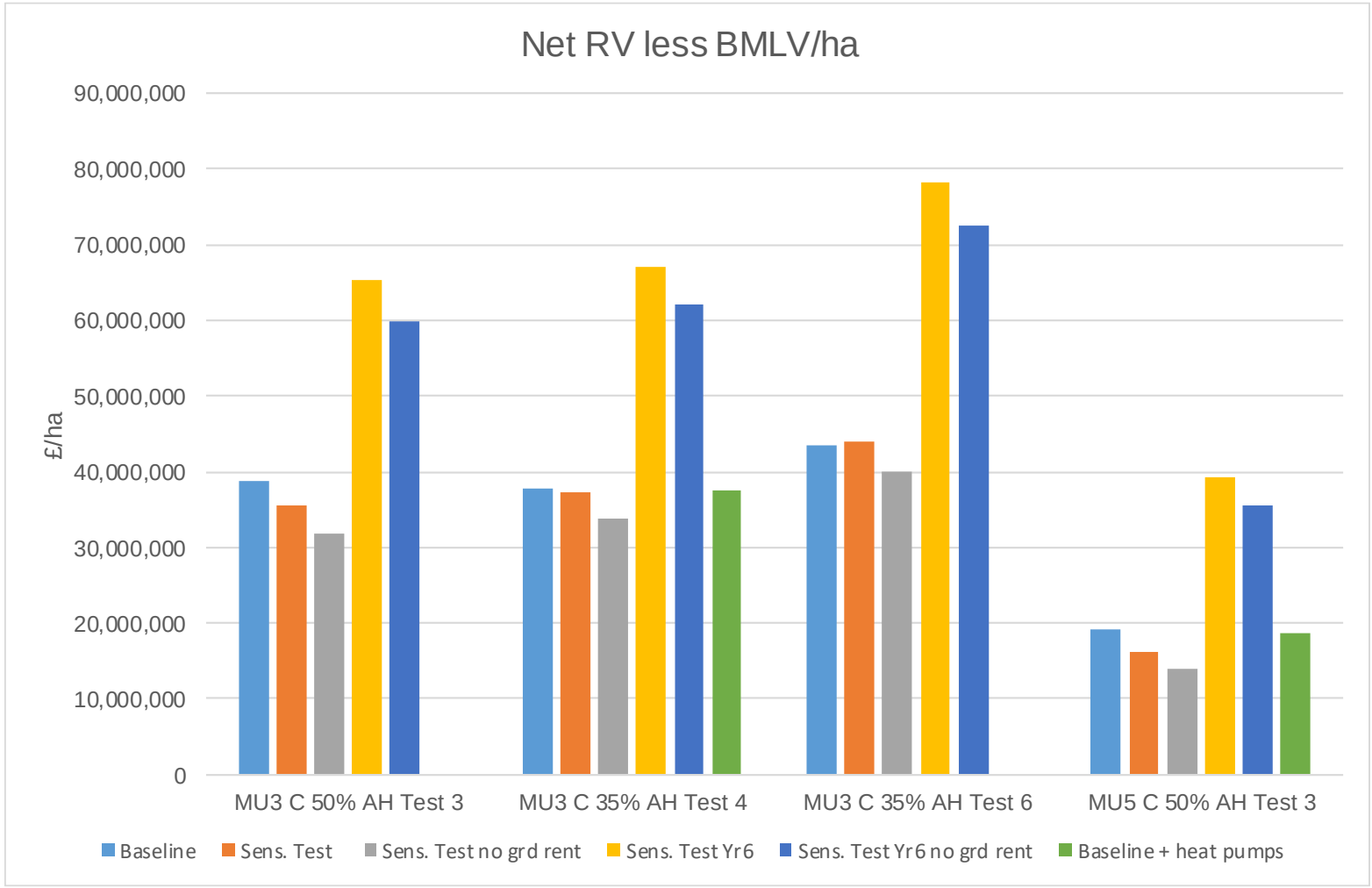


Figure 5.14: Large Sites Sensitivity Tests Net RV less BMLV in Value Band D

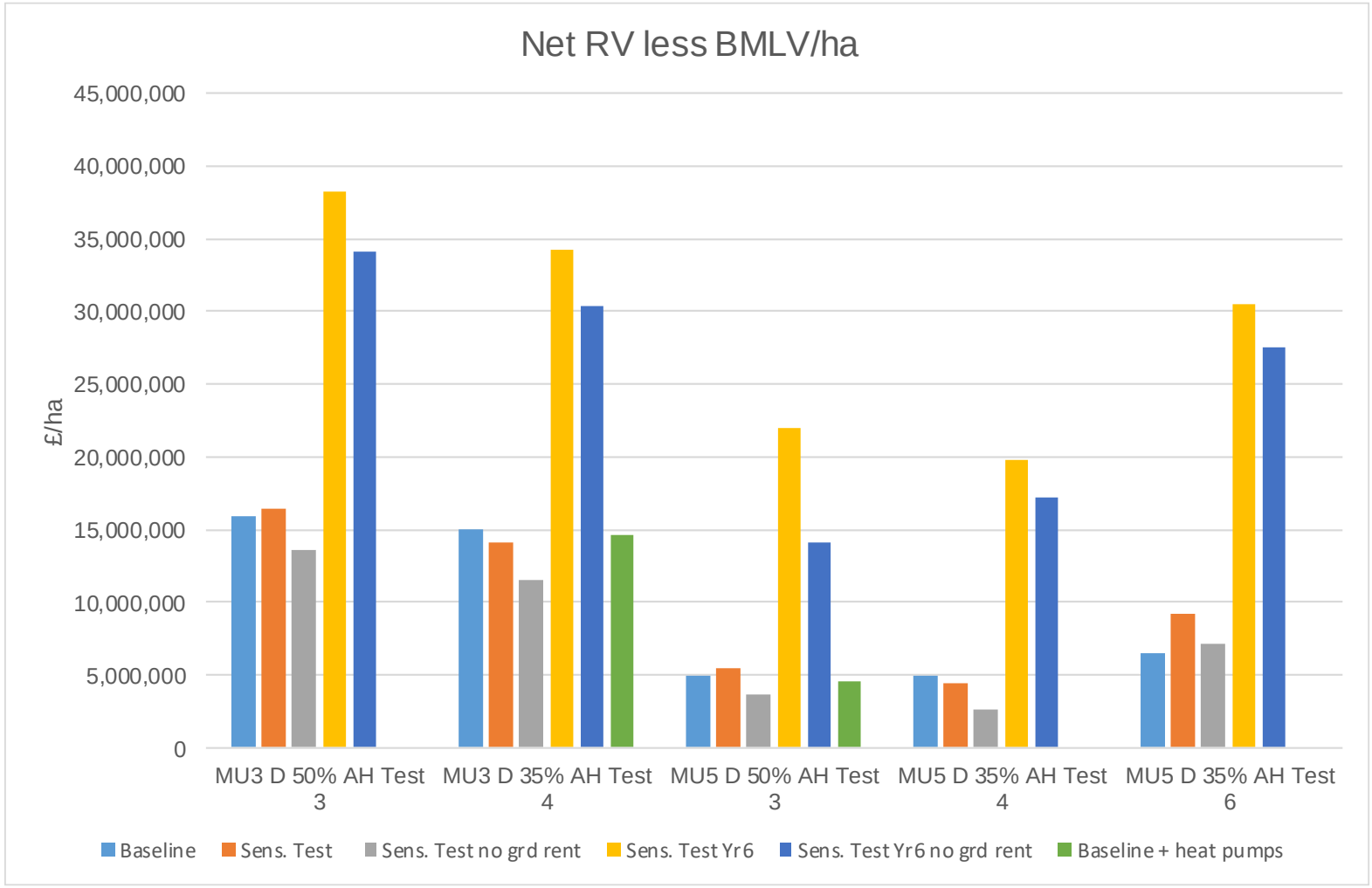


Figure 5.15: MU4 Estate Regeneration Sensitivity Tests Net RV less BMLV

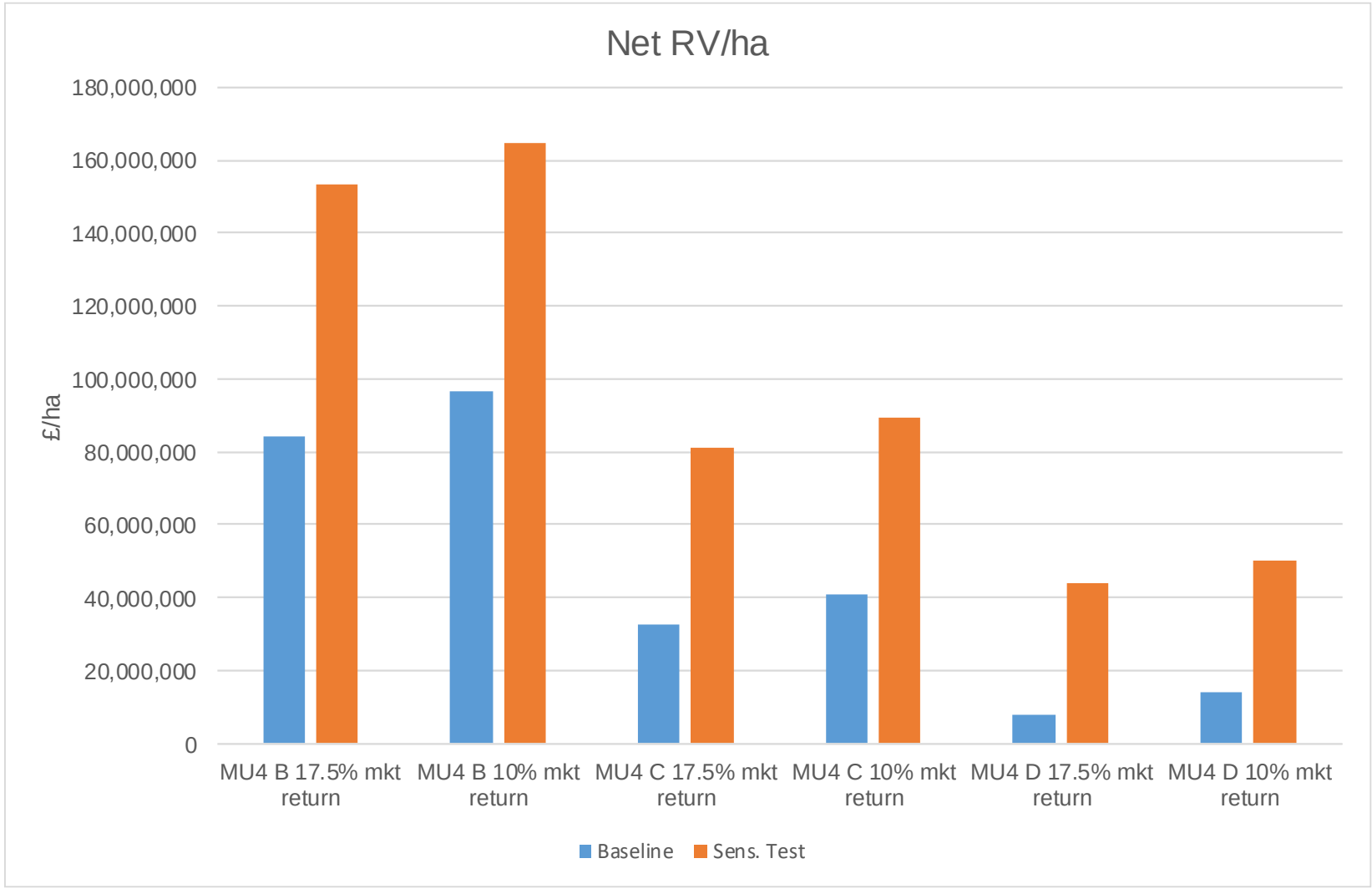


Figure 5.16: MU3 Abnormal Costs and Grant Sensitivity Tests Net RV less BMLV

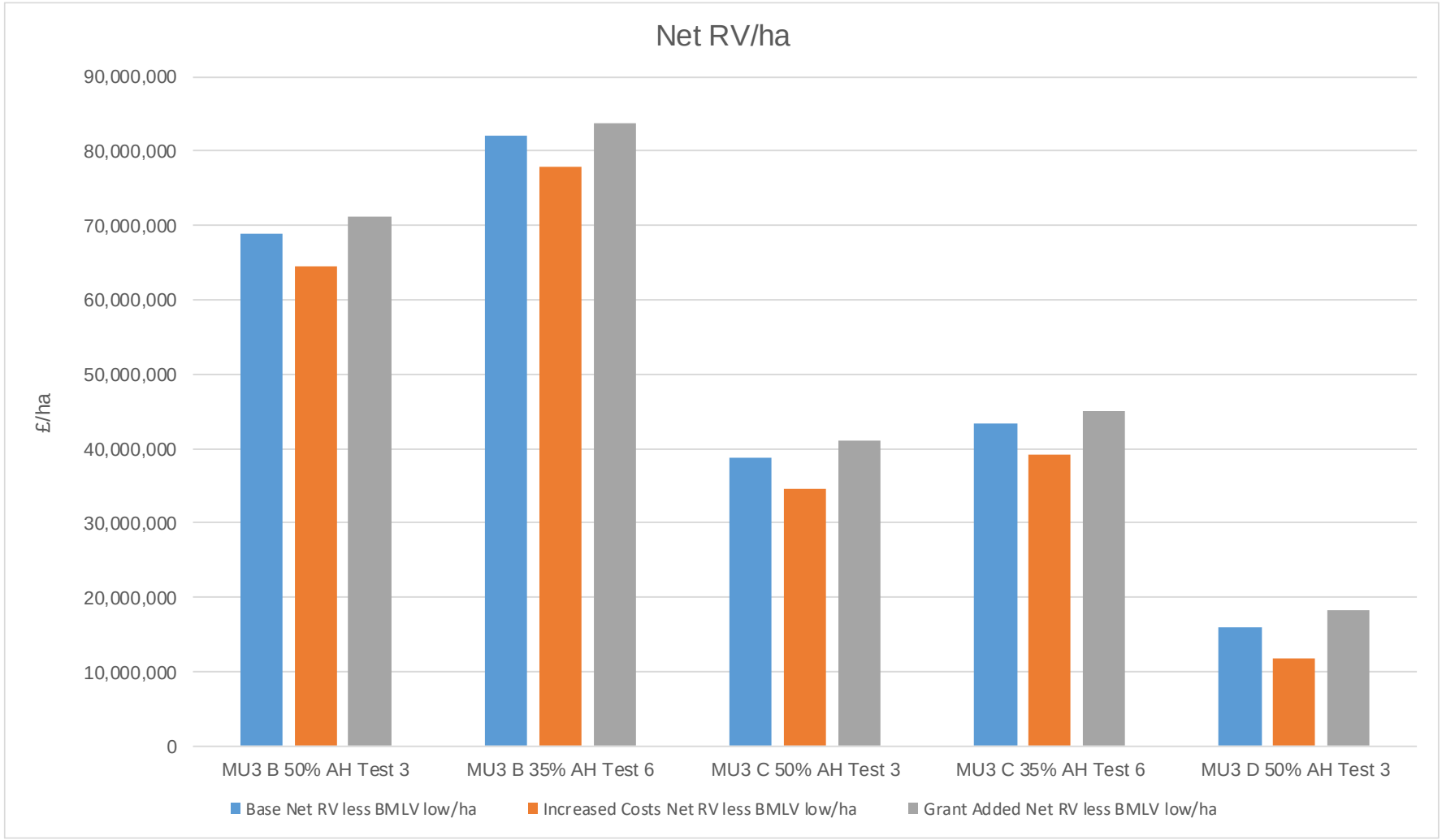


Figure 5.17: MU5 Abnormal Costs and Grant Sensitivity Tests Net RV less BMLV

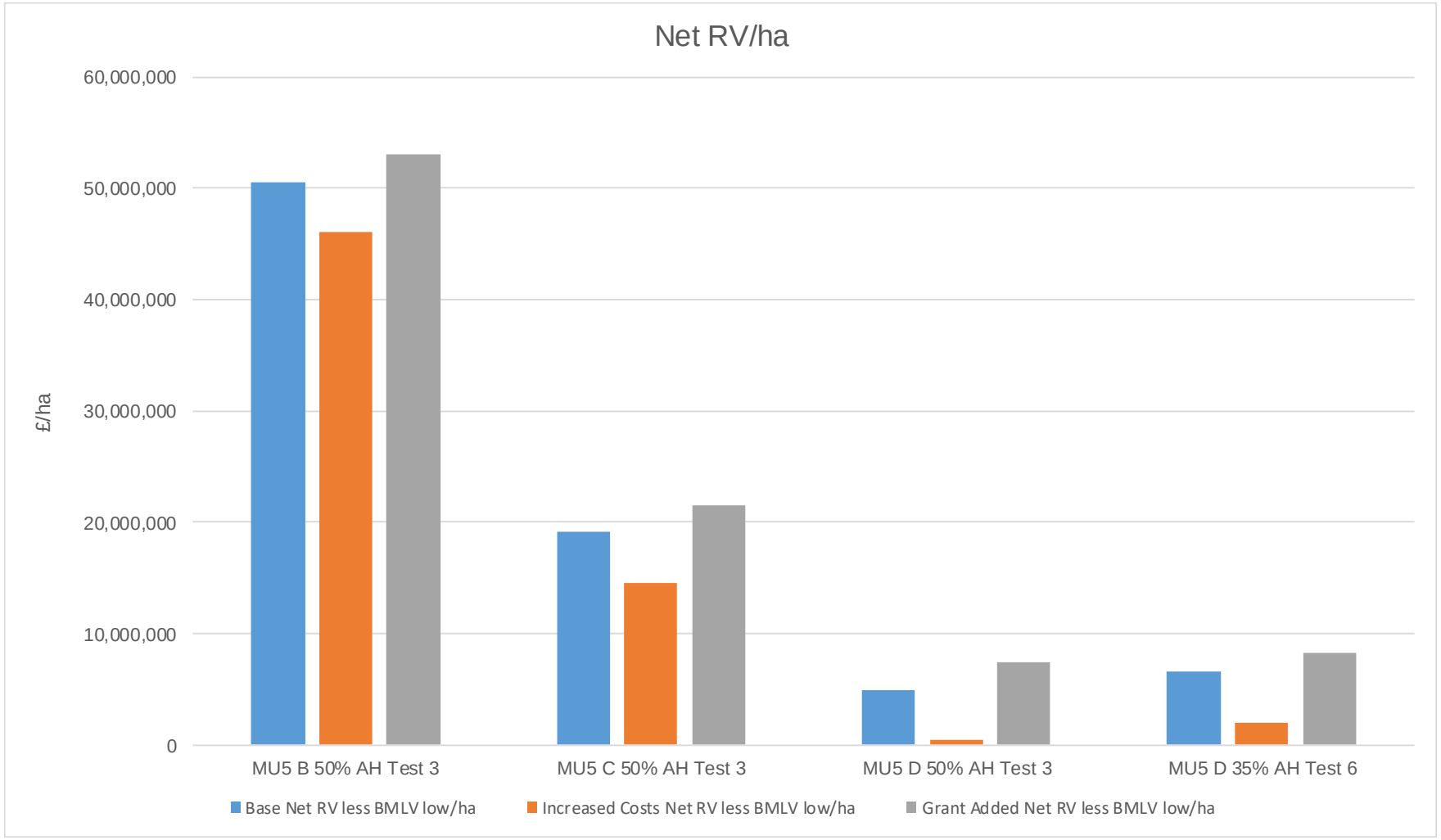
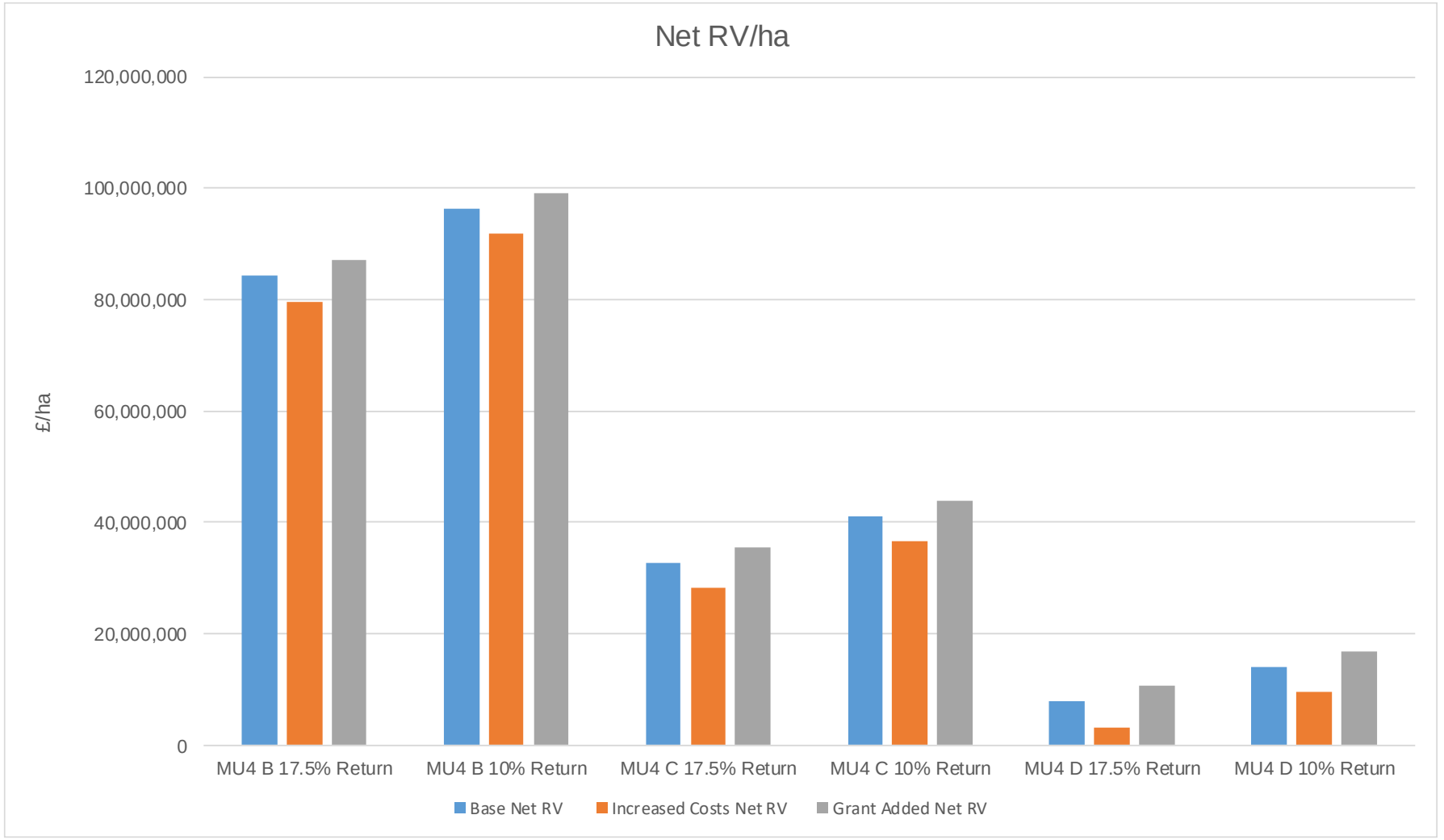


Figure 5.18: MU4 Abnormal Costs and Grant Sensitivity Tests Net RV



Conclusions to sensitivity testing

5.31 The combination of changes in the main sensitivity tests make relatively little difference to the overall LPVS viability findings. In some cases, the sensitivity tests, which include variation in costs and value assumptions, reduce viability slightly but the overall conclusions remain the same – that the proposed policies for development in the draft London Plan would not threaten the economic viability of development or put implementation of the plan at serious risk. The same pattern of strongest viability in the highest value parts of London remains, however it is also noteworthy that the lowest value areas have seen the highest value growth since the LPVS was undertaken.

5.32 The sensitivity testing has been extended to include some very small sites, as well as some additional larger sites. The testing (both baseline and sensitivity) indicate that these are also able to deliver viable development that meets the policies in the draft London Plan. The larger sites include an estate regeneration scheme (where social rented housing is re-provided on a like for like basis), and this is shown to be viable.

5.33 The sensitivity testing has included allowances for urban greening and shows the impact of excluding ground rents, as well as the impact of including heat pumps as part of the heating hierarchy– these do not have a significant impact on the case studies tested.

5.34 Where the testing is undertaken using projected changes in values and costs, the viability is generally strengthened beyond the original baseline tests. In some cases, a scheme that may not be viable based on current day values and costs, may be viable in the future, and in some cases, viability may reduce if build cost rises are not matched by increasing values. Depending on the site type, it may be that the land value benchmarks will also change as well as scheme values and costs and this could to some extent mitigate the improved viability noted in some of the projected value and cost sensitivity tests. However, we have assumed that there is no growth in commercial values for the sensitivity testing and this may also apply where the sites have current commercial, community or related uses. It is likely that the benchmarks for sites in current residential uses will see the benchmarks rise although it is relatively unusual for a substantial component of existing sites to comprise residential uses except for in estate regeneration schemes where the majority of units would be affordable housing, or for some types of small sites. It is also logical to assume that sites that come forward for development are more likely to be in sub-optimal use, and that any increases in site value will not exceed increases in development value arising from higher residential values.

5.35 Sensitivity testing has also been undertaken applying an abnormal costs scenario and affordable housing grant. When the abnormal cost allowance is added the residual value reduces, but the testing scenarios remain viable. As with the LPVS it is not possible to determine the level of abnormal costs that may apply to the individual sites. If an individual scheme is subject to significant abnormal costs and is not able to meet the policies of the plan, the policies of the plan would not prevent this from coming forward.

ANNEX A – SMALL SITES MODELLING RESULTS

Table A.1: Small sites modelling results

Report Refer-ence	Market Value area	AH Mix Type	Net RV scheme £s	BLV £s	Net RV less BLV £s
Res13	A	Base	974,040	125,000	849,040
Res13	A	With £30,000 per unit	946,934	125,000	821,934
Res13	B	Base	509,632	63,000	446,632
Res13	B	With £30,000 per unit	482,526	63,000	419,526
Res13	C	Base	300,919	50,000	250,919
Res13	C	With £30,000 per unit	273,813	50,000	223,813
Res13	D	Base	193,923	43,000	150,923
Res13	D	With £30,000 per unit	165,962	43,000	122,962
Res13	E	Base	76,086	31,000	45,086
Res13	E	With £30,000 per unit	47,554	31,000	16,554
Res14	A	Base	2,415,151	1,480,000	935,151
Res14	A	With £30,000 per unit	2,333,834	1,480,000	853,834
Res14	B	Base	1,283,043	890,000	393,043
Res14	B	With £30,000 per unit	1,201,726	890,000	311,726

Report Refer-ence	Market Value area	AH Mix Type	Net RV scheme £s	BLV £s	Net RV less BLV £s
Res14	C	Base	771,336	610,000	161,336
Res14	C	With £30,000 per unit	690,019	610,000	80,019
Res14	D	Base	514,736	475,000	39,736
Res14	D	With £30,000 per unit	433,420	475,000	-41,580
Res14	E	Base	245,488	400,000	-154,512
Res14	E	With £30,000 per unit	161,908	400,000	-238,092
Res15	A	Base	820,442	650,000	170,442
Res15	A	With £30,000 per unit	793,336	650,000	143,336
Res15	B	Base	420,183	350,000	70,183
Res15	B	With £30,000 per unit	393,078	350,000	43,078
Res15	C	Base	242,461	200,000	42,461
Res15	C	With £30,000 per unit	214,708	200,000	14,708
Res15	D	Base	151,329	150,000	1,329
Res15	D	With £30,000 per unit	122,974	150,000	-27,026
Res15	E	Base	51,643	100,000	-48,357

Report Refer-ence	Market Value area	AH Mix Type	Net RV scheme £s	BLV £s	Net RV less BLV £s
Res15	E	With £30,000 per unit	23,111	100,000	-76,889
Res16	A	Base	6,743,001	2,960,000	3,783,001
Res16	A	With £30,000 per unit	6,580,368	2,960,000	3,620,368
Res16	B	Base	3,515,636	1,775,000	1,740,636
Res16	B	With £30,000 per unit	3,353,002	1,775,000	1,578,002
Res16	C	Base	2,054,918	1,210,000	844,918
Res16	C	With £30,000 per unit	1,892,285	1,210,000	682,285
Res16	D	Base	1,333,911	925,000	408,911
Res16	D	With £30,000 per unit	1,171,278	925,000	246,278
Res16	E	Base	566,824	630,000	-63,176
Res16	E	With £30,000 per unit	404,191	630,000	-225,809
Res17	A	Base	5,947,002	2,800,000	3,147,002
Res17	A	With £30,000 per unit	5,811,474	2,800,000	3,011,474
Res17	B	Base	3,276,203	1,550,000	1,726,203
Res17	B	With £30,000 per unit	3,140,676	1,550,000	1,590,676

Report Refer-ence	Market Value area	AH Mix Type	Net RV scheme £s	BLV £s	Net RV less BLV £s
Res17	C	Base	2,077,009	1,050,000	1,027,009
Res17	C	With £30,000 per unit	1,941,482	1,050,000	891,482
Res17	D	Base	1,444,547	805,000	639,547
Res17	D	With £30,000 per unit	1,309,019	805,000	504,019
Res17	E	Base	805,760	510,000	295,760
Res17	E	With £30,000 per unit	670,232	510,000	160,232
Res18	A	Base	10,215,790	4,610,000	5,605,790
Res18	A	4	7,203,788	4,610,000	2,593,788
Res18	A	5	7,436,947	4,610,000	2,826,947
Res18	A	6	7,538,272	4,610,000	2,928,272
Res18	A	7	8,494,671	4,610,000	3,884,671
Res18	A	8	8,628,198	4,610,000	4,018,198
Res18	A	9	8,684,923	4,610,000	4,074,923
Res18	B	Base	5,262,395	2,765,000	2,497,395
Res18	B	4	4,078,544	2,765,000	1,313,544
Res18	B	5	4,148,226	2,765,000	1,383,226
Res18	B	6	4,398,334	2,765,000	1,633,334
Res18	B	7	4,585,236	2,765,000	1,820,236
Res18	B	8	4,625,409	2,765,000	1,860,409
Res18	B	9	4,768,327	2,765,000	2,003,327
Res18	C	Base	3,035,894	1,890,000	1,145,894

Report Refer-ence	Market Value area	AH Mix Type	Net RV scheme £s	BLV £s	Net RV less BLV £s
Res18	C	4	2,475,048	1,890,000	585,048
Res18	C	5	2,509,171	1,890,000	619,171
Res18	C	6	2,642,747	1,890,000	752,747
Res18	C	7	2,716,251	1,890,000	826,251
Res18	C	8	2,736,032	1,890,000	846,032
Res18	C	9	2,811,308	1,890,000	921,308
Res18	D	Base	1,923,912	1,440,000	483,912
Res18	D	4	1,695,691	1,440,000	255,691
Res18	D	5	1,715,487	1,440,000	275,487
Res18	D	6	1,767,955	1,440,000	327,955
Res18	D	7	1,793,323	1,440,000	353,323
Res18	D	8	1,805,582	1,440,000	365,582
Res18	D	9	1,836,490	1,440,000	396,490
Res18	E	Base	752,921	980,000	-227,079
Res18	E	4	814,737	980,000	-165,263
Res18	E	5	827,274	980,000	-152,726
Res18	E	6	758,131	980,000	-221,869
Res18	E	7	787,619	980,000	-192,381
Res18	E	8	795,965	980,000	-184,035
Res18	E	9	755,545	980,000	-224,455

ANNEX B – LARGE SCHEME MODELLING RESULTS

Table B.1: Large scheme modelling results

Report Refer-ence	Market Value area	AH Test	Net RV scheme £s	Net RV per ha £s	Net RV less BMLV low/ha £s	Net RV less BMLV mid/ha £s	Net RV less BMLV high/ha £s
MU3	B	Base	1,027,822,818	128,477,852	111,575,352	96,786,602	81,996,602
MU3	B	1	600,822,165	75,102,771	58,200,271	43,411,521	28,621,521
MU3	B	2	625,297,814	78,162,227	61,259,727	46,470,977	31,680,977
MU3	B	3	685,542,993	85,692,874	68,790,374	54,001,624	39,211,624
MU3	B	4	732,849,837	91,606,230	74,703,730	59,914,980	45,124,980
MU3	B	5	749,267,012	93,658,377	76,755,877	61,967,127	47,177,127
MU3	B	6	791,817,231	98,977,154	82,074,654	67,285,904	52,495,904
MU3	B	7	864,731,214	108,091,402	91,188,902	76,400,152	61,610,152
MU3	B	8	874,690,886	109,336,361	92,433,861	77,645,111	62,855,111
MU3	B	9	898,672,003	112,334,000	95,431,500	80,642,750	65,852,750
MU3	C	Base	525,144,955	65,643,119	52,966,869	42,403,119	31,839,369
MU3	C	1	347,763,276	43,470,409	30,794,159	20,230,409	9,666,659
MU3	C	2	356,612,177	44,576,522	31,900,272	21,336,522	10,772,772
MU3	C	3	411,354,995	51,419,374	38,743,124	28,179,374	17,615,624
MU3	C	4	403,900,089	50,487,511	37,811,261	27,247,511	16,683,761
MU3	C	5	410,409,405	51,301,176	38,624,926	28,061,176	17,497,426
MU3	C	6	448,934,929	56,116,866	43,440,616	32,876,866	22,313,116
MU3	C	7	460,659,778	57,582,472	44,906,222	34,342,472	23,778,722
MU3	C	8	464,293,034	58,036,629	45,360,379	34,796,629	24,232,879
MU3	C	9	486,234,469	60,779,309	48,103,059	37,539,309	26,975,559
MU3	D	Base	228,417,930	28,552,241	20,100,991	13,762,241	7,424,741
MU3	D	1	164,025,100	20,503,137	12,051,887	5,713,137	-624,363
MU3	D	2	171,941,501	21,492,688	13,041,438	6,702,688	365,188
MU3	D	3	195,145,854	24,393,232	15,941,982	9,603,232	3,265,732
MU3	D	4	187,411,142	23,426,393	14,975,143	8,636,393	2,298,893

Report Reference	Market Value area	AH Test	Net RV scheme £s	Net RV per ha £s	Net RV less BMLV low/ha £s	Net RV less BMLV mid/ha £s	Net RV less BMLV high/ha £s
MU4[24]	B	17.5% return	1,347,752,099	84,234,506			
MU4	B	10% return	1,542,215,699	96,388,481			
MU4	C	17.5% return	523,240,899	32,702,556			
MU4	C	10% return	656,893,674	41,055,855			
MU4	D	17.5% return	124,997,858	7,812,366			
MU4	D	10% return	226,229,258	14,139,329			
MU5	B	Base	201,936,099	100,968,050	85,663,050	72,273,050	58,883,050
MU5	B	1	111,489,310	55,744,655	40,439,655	27,049,655	13,659,655
MU5	B	2	117,411,653	58,705,827	43,400,827	30,010,827	16,620,827
MU5	B	3	131,792,273	65,896,136	50,591,136	37,201,136	23,811,136
MU5	C	Base	90,098,495	45,049,248	33,569,248	24,004,248	14,439,248
MU5	C	1	47,725,950	23,862,975	12,382,975	2,817,975	-6,747,025
MU5	C	2	52,452,447	26,226,223	14,746,223	5,181,223	-4,383,777
MU5	C	3	61,112,944	30,556,472	19,076,472	9,511,472	-53,528
MU5	D	Base	35,808,052	17,904,026	10,254,026	4,514,026	-1,225,974
MU5	D	1	19,630,081	9,815,041	2,165,041	-3,574,959	-9,314,959
MU5	D	2	22,375,209	11,187,605	3,537,605	-2,202,395	-7,942,395
MU5	D	3	25,105,795	12,552,897	4,902,897	-837,103	-6,577,103
MU5	D	4	25,299,866	12,649,933	4,999,933	-740,067	-6,480,067
MU5	D	5	26,434,229	13,217,115	5,567,115	-172,885	-5,912,885
MU5	D	6	28,352,484	14,176,242	6,526,242	786,242	-4,953,758
MU5	D	7	29,842,981	14,921,490	7,271,490	1,531,490	-4,208,510
MU5	D	8	30,433,758	15,216,879	7,566,879	1,826,879	-3,913,121

[24] MU4 is an estate regeneration scheme and not tested against a BLV

Report Refer-ence	Market Value area	AH Test	Net RV scheme £s	Net RV per ha £s	Net RV less BMLV low/ha £s	Net RV less BMLV mid/ha £s	Net RV less BMLV high/ha £s
MU5	D	9	31,543,325	15,771,662	8,121,662	2,381,662	-3,358,338
MU6	B	Base	147,122,354	58,848,941	49,980,941	42,216,941	34,456,941
MU6	B	1	83,205,580	33,282,232	24,414,232	16,650,232	8,890,232
MU6	B	2	87,344,998	34,937,999	26,069,999	18,305,999	10,545,999
MU6	B	3	97,569,378	39,027,751	30,159,751	22,395,751	14,635,751
MU6	C	Base	68,100,415	27,240,166	20,588,166	15,044,166	9,500,166
MU6	C	1	39,382,931	15,753,172	9,101,172	3,557,172	-1,986,828
MU6	C	2	41,294,325	16,517,730	9,865,730	4,321,730	-1,222,270
MU6	C	3	48,943,100	19,577,240	12,925,240	7,381,240	1,837,240
MU6	C	4	48,044,969	19,217,987	12,565,987	7,021,987	1,477,987
MU6	D	Base	26,149,672	10,459,869	6,023,869	2,699,869	-628,131
MU6	D	1	15,440,632	6,176,253	1,740,253	-1,583,747	-4,911,747
MU6	D	2	16,522,806	6,609,122	2,173,122	-1,150,878	-4,478,878
MU6	D	3	18,449,662	7,379,865	2,943,865	-380,135	-3,708,135
MU6	D	4	18,675,700	7,470,280	3,034,280	-289,720	-3,617,720
MU6	D	5	19,435,009	7,774,004	3,338,004	14,004	-3,313,996
MU6	D	6	20,456,747	8,182,699	3,746,699	422,699	-2,905,301
MU6	D	7	21,915,920	8,766,368	4,330,368	1,006,368	-2,321,632
MU6	D	8	22,362,719	8,945,088	4,509,088	1,185,088	-2,142,912
MU6	D	9	23,113,506	9,245,403	4,809,403	1,485,403	-1,842,597

ANNEX C – AFFORDABLE HOUSING VALUES

1. This annex provides further details of the approach taken in the LPVS to calculate affordable housing values and considers the approach taken by Registered Providers (RPs) when acquiring affordable units in new developments.

2. Key assumptions used for the calculations employ a range of published and unpublished sources to derive average values for affordable tenures in the value bands (A to E). The values used are averages and will not apply exactly to any particular scheme or RP.

3. Data sources include Office of Budget Responsibility (OBR) forecasts of price and cost inflation, Green Book guidance on discount rates, data on housing association management and maintenance allowances, repairs funds, operating costs and annual, accrued surpluses taken from analysis of the Annual Accounts of the G15 leading housing associations developing in London. Rightmove was also used for data on sale and rental asking prices for houses and flats. Data was collected during the autumn of 2017 and draws on information based on the period January to July 2017 with the exception of the housing association Annual Accounts data which is based on Accounts for the year to March 2016 and March 2017.

4. The amount an RP can afford to pay for a new rental property has two elements:

   i. A base investment value reflecting the net rental income from the new property (against which the RP can borrow);
   ii. An additional amount paid by the RP to acquire units from within the surpluses held by the organisation. Surpluses are used to grow RPs' businesses and increase stock in strategic locations.

5. The calculation of the amount an RP can afford to pay for a new LSO property also includes the amount paid by the purchaser for the share bought.

London Affordable Rent (LAR) and London Living Rent (LLR)

6. The estimate of the 'base value' for LAR in the study uses the net rent per unit, calculated by deducting various management and maintenance costs from the gross rent paid by the tenant.

7. Some deductions for management and maintenance in the testing approach are standard across the value bands, for example void allowances. Some costs are related to the market value and/or the replacement values of units which are lower in the lower value bands.

8. Sources used to estimate the costs are:

   - Maintenance costs and major repairs costs are closely correlated with replacement values rather than rental values and increase in line with the build costs in the higher value bands;
   - Voids and bad debts and average tenancy length are based on national data. It is assumed that voids average 2% pa and bad debts average 1% pa;

- Management and maintenance costs[25] - based on an average of those recorded in the accounts of the G15 group of housing associations and which cover the majority of affordable housing of lower value social rent stock in London.
- Major repairs costs are set at 0.8% of replacement value including an allowance of 0.2% external and structural works for flatted development. Both these percentages are derived from stock condition surveys of housing association portfolios and recent service charge budget accounts and are comparable with life cycle costing of working elements.[26]

9. For LAR properties, it is assumed that properties have a life of at least 60 years and the property has no value after Year 60. Over the 60 years of the model, the following assumptions are made:

    - Rents decrease by 1% p.a. until 2020 (reflecting current government policy). Post 2020 they rise by CPI plus 1%[27]. When the property is re-let (after an average of 15 years) the rent to the new occupant follows guidance in Homes for Londoners AHP funding guidance (para 10) and then increases at CPI plus 1% each year[28];
    - Management costs increase by CPI plus 1%;
    - Maintenance costs are a mix of labour and material costs. Material costs are expected to rise in line with CPI and labour costs to increase slightly more than CPI. An average annual increase of CPI plus 0.75% is assumed;
    - Major repairs are inflated at an annual rate of CPI plus 0.5%)

10. It is assumed that annual CPI change is 2% pa (based on OBR projections[29]).

11. Applying the above factors generates a 60-year profile of net rent. A discount rate of 5.5% is applied to the flow of net rents to estimate the net present value (which sets the value of the property to the RP). This is the Treasury Green Book rate for long-term projects[30] adjusted for risk and inflation. The out-turn of the calculation is the investment value of the property to an RP.

12. For LLR, the average tenancy length assumed is slightly shorter than for LAR at 11 years. Management and maintenance costs follow the same approach as for LAR with some small differences in marketing/letting and maintenance costs arising from the shorter tenancy life assumed.

13. As with the LAR, it is assumed that LLR properties have a 60-year life and a profile of the 60-year rent is derived, using the same assumptions as for LAR - as set out

[25] Figures are from Global Accounts of housing associations 2017 - https://www.gov.uk/government/publications/2017-global-accounts-of-private-registered-providers
[26] Lifecycle costing 1st Edition, RICS, April 2014
[27] CPI plus 1% is the rent increase formula proposed by government; Policy Statement on Rents for Social Housing, MHCLG September 2018
[28] Once let, London Affordable Rent homes will be subject to rent-setting guidance issued by the Social Housing Regulator and will be subject to the annual one per cent rent reductions up to 2020. Providers will be able to re-let at up to the applicable benchmark level, uprated annually, or at an otherwise agreed level, as appropriate and in line with legislation and Regulator guidance. Providers have the flexibility to charge less than the benchmark. The benchmark rents do not include service charges, which may be charged in addition.
[29] see table 1.7 of Economic and Fiscal Outlook OBR March 2018
[30] see appendix A6

above. The only difference in assumptions is that LLR properties are assumed to re-let every 11 years.

14. In Value Bands C, D and E, the product switches to London Shared Ownership after 10 years as per the GLA's guidance (see below for further description of LSO). In Bands A and B this switch is not made as LSO may not meet affordability criteria and in A and B the product is modelled as LLR over 60 years with tenancy lengths of 11 years.

London Shared Ownership (LSO)

15. On advice from the GLA, we did not model LSO in Value Bands A and B as shared ownership costs were considered to be too high for the product to be counted as affordable housing in terms of the London Plan criteria. Generally shared ownership is not appropriate where unrestricted market values of a home exceed £600,000.

16. Gross rent on the unbought share is set at 2.5% in Value Band C and at 2.75% in Bands D and E. These percentages accord with the guidance set out by the GLA[31] with the lower rent necessary in Band C to ensure the product fits within the GLA's affordability criteria.

17. A minimal annual management cost of £200 is assumed. There are no maintenance or major repairs costs since these expenses are borne by the shared owner.

18. Voids and bad debts are assumed to be zero. Since it is assumed that there are no voids or bad debts it is not necessary to make an assumption about average length of the shared ownership purchase.

19. It is assumed that properties are occupied for 60 years (but not the same household). and that the property has no value after Year 60.

20. Over this period, rent is increased by CPI + 1%. This is consistent with the longer-term increases used for LAR and LLR. The discount rate applied to the rental income is that set in the Treasury Green Book at 5.5% for long-term projects adjusted for low risk.

21. In the modelling of LSO, no assumptions are made about future purchase of additional equity (staircasing) by the purchaser.

Discount market rent (DMR)

22. The calculation of the amount that an investor would pay for a new DMR property takes the same approach as for LAR and LLR but with the average length of tenancy assumed as 7 years.

23. As with the LAR and LLR, it is assumed that DMR properties have a 60-year life and a profile of the 60-year rent is derived. It was assumed that rents would increase by 4% per annum in line with market values and costs would increase by between 3.75% and 4%. A discount rate of 6%, which reflects the higher income and operating costs risks of DMR compared to more heavily discounted products, was then applied to the forecast net rents.

24. The use of a discounted cash flow to assess the present value of a net income stream from Build to Rent Investments is supported by RICS guidance (Valuing residential property purpose built for renting, 2014). Whilst this guidance recognises

[31] Homes for Londoners, Mayor of London, November 2016, para 20

the traditional practice of applying a yield to the first-year net operating income as a common valuation methodology, it goes into some detail to recognise the long-term cash flow method used by institutions in determining the price paid for Build to Rent investment. This guidance has informed the methods to determine investment values used.

Cross-subsidy

25. Housing Associations will also use revenue from the existing stock and sales activities to cross-subsidise new stock. The 2017 LPVS used the G15 surpluses to estimate the level of cross subsidy[32], based on the 2015/16 accounts from RPs published by the HCA. The 2016/17 accounts have also been examined to determine whether the situation has changed[33]. Assumptions within this analysis include the split between RP-led and s106 funding and affordable housing stock delivery. This is assumed to be 50:50 although some RPs will favour investment in their own delivery programmes:

Table C1: G15 Surpluses 2015/16 and 2016/17

Surpluses £'000s year to March	**2016**	RP led	Dev led	**2017**	RP led	Dev led
Social housing lettings after interest	357,586			367,365		
1st Tranche sales	184,640			158,730		
Staircasing	160,272			164,970		
Built for sale	276,588			157,857		
Other sales	101,942			130,832		
Fixed asset sales	307,597			361,934		
Sub-total	1,388,625			1,343,705		
Less retained for financial covenants	277,725			268,741		
Less capitalised Major Repairs	376,273			343,385		
Less other adjustments	240,000			250,000		
Available for cross-subsidy	494,627			481,579		
Cross-subsidy	494,627	247,313	247,313	481,579	240,789	240,789
AH new units developed	8,876	4,438	4,438	8,722	4,361	4,361
Average cross-subsidy per new AH dwelling	56	56	56	55	55	55

[32] See LPVS Technical Report Annex D
[33] https://www.gov.uk/government/publications/2017-global-accounts-of-private-registered-providers

26. This cross check shows that the surpluses available for cross subsidy have changed little over the two years and the estimated possible subsidy per dwelling from the accounts is in the region of £55,000 over the two years. Using a conservative assumption that only part of the possible subsidy is invested in new stock the following assumptions have been made in the 2017 LPVS:

Table C2: Cross-subsidy assumptions 2017 LPVS

Tenure	Cross subsidy
LAR	£50,000
LLR	£36,000
LSO	£20,000

27. For LLR and LSO the amount of cross-subsidy varies by value band. However, for LAR the cross-subsidy is the same across all value bands, reflecting the benchmark rents.

RP Business Plans

28. A review has been undertaken of the business plans for a sample of the G15 housing associations. These have been provided to study team members on a confidential basis and remain unpublished[34]. However, information from these business plans has been aggregated to provide the following planned expenditure by unit.

Table C3: Summary of sampled G15 Business Plans

Allowances in Business Plans for new affordable units	Gross Cost £,000s	£/sq m at 70 sq m/dwelling
Affordable housing for rent	251	3,586
Shared ownership	318	4,543
Average	299	4,267

RP Transaction Prices

29. To supplement the evidence presented in the LPVS, the GLA has undertaken a review of prices paid for s106 affordable housing units on developer-led schemes over the past 3 years based on information provided by medium sized RPs. In total 35 schemes were reviewed comprising over 700 affordable housing units purchased by housing associations. The schemes vary in size, the number of units purchased and location. The average number of affordable dwellings for the sample of schemes is 20 and generally on smaller sites with total dwellings of about 40 to 60 dwellings. This is considerably smaller than the size of most sites tested in the LPVS and it is reasonable to assume that the values in this analysis may be lower than for affordable housing in larger schemes (which will offer a greater continuity in delivery and lower unit costs to RPs than smaller schemes) and for units purchased by larger housing associations who typically have access to greater levels of surplus which can be reinvested in new affordable housing supply.

[34] Separately from this study, team members have undertaken investment valuation assessments on behalf of lenders to RPs and this has included G15 business plan reviews.

30. Of the schemes reviewed, 23 included affordable low-cost rental products with units at social/ target rent, LAR and other types of affordable rent.

31. Nine of the schemes incorporated social / target rent with an average value of £2,210/sq m and values ranging from £1,389 to £3,019/sq m. The average value of all of the low-cost rental units was £2,353/sq m with a range from £1,389 to £3,758/sq m.

32. Prices paid by RPs for shared ownership units have also been reviewed. This demonstrated a range of prices paid from £3,061 to £5,913/sq m, with an average of £4,628/sq m across 12 developments.

33. The data referred to above serves as a useful cross-check on the affordable housing values used in the LPVS which are within the range of values identified. It also shows that there can be significant variation in values, and this is picked up in the sensitivity testing in this report.

ANNEX D – URBAN GREENING

1. Policy G5 Urban Greening and its supporting text outlines 16 greening infrastructure types and how these may deliver the interim target recommended by the GLA (Table 8.2 in the draft London Plan). The policy allows for a range of urban greening types to be applied taking into account site circumstances in order to obtain the proposed target score (0.4 for residential development) with different weightings. Turner and Townsend have confirmed that the majority of urban greening types are already typical in developments and it is expected that developments would apply other types only if there is a commercial case for doing so.

2. The table below shows that of the 16 urban greening types, ten are commonly within landscape design and are included in the benchmarked base costs allowances used in the testing. Of the six factors which are not commonly included, four may have higher costs although for two of these, the costs may be lower depending on the detail of implementation.

3. Nevertheless, an additional cost allowance has been incorporated in sensitivity testing undertaken in this Addendum which assumes that the higher cost types will be used, notwithstanding that the policy allows applicants to identify the appropriate infrastructure types for each scheme.

Table D.1: Urban Greening Factor – Green Infrastructure Types

Surface Cover Type	High Level Assessment of Potential Cost Impact	Commonly within Landscape Design? (Y/N)	Comments
Semi natural vegetation	High	No	Implications may vary - flower rich grassland will not drive a premium cost, but woodland may carry a premium (and this will depend on the densities and maturity of trees). Because of the potential inclusion of woodland areas and the potential cost for planting large volumes of mature trees this is considered to have a relatively high cost impact although this would be reduced without woodland planting. It should be noted that the cost may be small if the solution is retention of semi-natural vegetation on site rather than creating semi-natural vegetation through planting. A provisional allowance of £150 assuming low lying planting and grassland, with no woodland.
Wetland/ open water area	High	No	Implications may vary depending on the type of open water areas required. This is considered to have a relatively high cost impact due to possible requirement for "open water" and the potential cost for retaining structures but this will depend on scale and depth.

Surface Cover Type	High Level Assessment of Potential Cost Impact	Commonly within Landscape Design? (Y/N)	Comments
Intensive green roof or vegetation area - 150mm depth	Medium	No	Intensive green roofs can help deliver Policy SI13 Sustainable Drainage
Standard trees planted in natural soils or in connected tree pits with soil volume = 2/3 of projected canopy of mature tree	Medium	Yes	
Extensive green roof area - 80mm depth	Medium	Yes	
Flower-rich perennial planting area	Medium	Yes	
Rain gardens and other vegetated sustainable drainage elements area	Medium	No	Rain gardens and vegetated SUDS can help deliver Policy SI 13 Sustainable Drainage.
Hedges area	Low	Yes	
Standard trees planted in pits area	Medium	Yes	
Green wall area	High	No	Deemed a high cost impact due to logistics of installation and maintenance; but will vary depending on the extent, dimensions and specifications.
Groundcover planting area	Medium	Yes	Assumed the same as "Flower-rich perennial planting area" above
Amenity grassland area	Low	Yes	
Extensive green roof of sedum mat area	Medium	Yes	
Water features (chlorinated) or unplanted detention basins	High	No	
Permeable paving	High	Yes	
Sealed surfaces area	Medium	Yes	

ANNEX E – DEVELOPMENT PROGRAMME

A sample of case studies has been selected for amendments to the development periods as part of sensitivity testing. These amendments have either lengthened or re-profiled the costs and values during development periods. The table below details the relevant LPVS typologies and the changes made for the sensitivity testing.

TableE.1: Alternative development programme for selected LPVS case studies

Case Study	Dwellings / non-residential floorspace	Original build period	Sensitivity build period	Original completion /lettings/ sales rates per annum	Sensitivity completion/ lettings/ sales rate per annum	Original time taken for completions/ sales	Sensitivity time taken for completions/ sales	Original completions/ sales period	Sensitivity completions/ sales period	Original total development Period	Sensitivity total development Period
Res3	80	Year 1 to Year 2	Year 1 to Year 2	60	52	18 months	18 months	Mth 7 to Mth 24	Mth 18 to Mth 36	2 years	3 years
Res9	300	Year 1 to Year 3	Year 1 to Year 3	150	100	3 years	3 years	Year 2 to Year 4	Year 2 to Year 4	4 years	4 years
Res10	750	Year 1 to Year 6	Year 1 to Year 5	180	180	5 years	4 years	Year 2 to Year 6	Year 2 to Year 6	6 years	6 years
Res11	750	Year 1 to Year 5	Year 1 to Year 5	180	180	3 years	4 years	Year 3 to Year 5	Year 3 to Year 6	5 years	6 years

ANNEX F – LPVS CASE STUDIES SENSITIVITY TESTING RESULTS

Table F.1: Sensitivity testing case studies results – lower BLV

Report Reference	Market Value area	AH Mix Type	2017 Baseline RV/ha minus lower BLV £s	Sens. Test RV/ha minus lower BLV £s	Sen. Test no grd rent RV/ha minus lower BLV £s	Sens. Test projected values/ costs RV/ha minus lower BLV £s	Sens. Test projected values/ costs no grd rent RV/ha minus lower BLV £s
Res3	C	3	11,304,324	9,412,711	9,145,663	16,575,015	16,209,546
Res3	D	3	10,208,778	5,752,704	5,545,000	11,130,828	10,846,575
Res3	E	3	3,240,589	1,082,320	904,288	4,705,858	4,462,212
Res5	C	5	12,145,925		19,195,147		24,126,849
Res5	D	5	2,473,094		8,407,007		10,818,325
Res9	D	3	6,924,158	4,998,772	4,844,907	9,524,732	9,305,737
Res9	E	3	1,541,910	1,701,482	1,569,672	4,838,812	4,651,208
Res9	E	4	1,723,078	1,251,081	1,128,575	4,112,909	3,938,547
Res9	E	6	1,624,410	2,013,166	1,874,291	5,356,449	5,158,790
Res11	A	3	108,552,152	97,859,188	94,096,386	171,378,810	165,586,235
Res11	A	4	137,404,521	123,560,576	120,063,383	215,408,427	210,024,740
Res11	A	6	147,258,572	134,694,094	130,732,084	228,762,316	222,663,075
Res11	B	3	52,171,103	46,732,449	43,596,927	89,234,602	84,407,684
Res11	B	4	54,416,727	51,098,130	48,183,950	102,794,986	98,308,807
Res11	B	6	64,770,377	62,100,327	58,798,800	116,155,160	115,499,513
Res11	C	3	15,158,589	5,350,998	2,528,896	40,598,820	36,254,390
Res11	C	4	12,509,489	8,263,891	5,640,996	44,183,795	40,146,030
Res11	C	6	18,740,993	15,121,895	12,150,167	55,503,837	50,929,067
Res12	A	5	110,812,957		120,845,728		160,475,549
Res12	B	5	43,528,306		58,015,521		78,708,735
Res12	C	5	10,003,076		25,171,015		36,790,402
Res12	D	5	-6,917,072		5,548,614		11,497,931

Report Reference	Market Value area	AH Mix Type	2017 Baseline RV/ha minus lower BLV £s	Sens. Test RV/ha minus lower BLV £s	Sen. Test no grd rent RV/ha minus lower BLV £s	Sens. Test projected values/ costs RV/ha minus lower BLV £s	Sens. Test projected values/ costs no grd rent RV/ha minus lower BLV £s
MU2	A	3	97,753,602	141,798,301	137,335,338	209,849,973	203,243,489
MU2	B	3	48,408,818	72,164,234	68,445,045	109,188,395	103,682,862
MU2	C	3	22,711,845	32,054,009	28,706,631	65,039,321	60,084,458
MU2	D	3	5,359,468	12,626,025	10,022,421	37,208,053	33,354,141

Table F.2: Sensitivity testing case studies results – mid BLV

Report Reference	Market Value area	AH Mix Type	2017 Baseline RV/ha minus mid BLV £s	Sens. Test RV/ha minus mid BLV £s	Sen. Test no grd rent RV/ha minus mid BLV £s	Sens. Test projected values/ costs RV/ha minus mid BLV £s	Sens. Test projected values/ costs no grd rent RV/ha minus mid BLV £s
Res3	C	3	9,304,324	7,412,711	7,145,663	14,575,015	14,209,546
Res3	D	3	9,008,778	4,552,704	4,345,000	9,930,828	9,646,575
Res3	E	3	2,440,589	282,320	104,288	3,905,858	3,662,212
Res5	C	5	5,895,925		12,945,147		17,876,849
Res5	D	5	-1,276,906		4,657,007		7,068,325
Res9	D	3	5,964,670	4,039,284	3,885,419	8,565,244	8,346,249
Res9	E	3	902,251	1,061,823	930,013	4,199,153	4,011,549
Res9	E	4	1,083,419	611,422	488,916	3,473,251	3,298,889
Res9	E	6	984,751	1,373,507	1,234,632	4,716,790	4,519,131
Res11	A	3	56,905,445	46,212,482	42,449,679	119,732,103	113,939,529
Res11	A	4	85,757,814	71,913,869	68,416,676	163,761,721	158,378,034

Report Refer-ence	Market Value area	AH Mix Type	2017 Baseline RV/ha minus mid BLV £s	Sens. Test RV/ha minus mid BLV £s	Sen. Test no grd rent RV/ha minus mid BLV £s	Sens. Test projected val-ues/ costs RV/ha minus mid BLV £s	Sens. Test projected val-ues/ costs no grd rent RV/ha minus mid BLV £s
Res11	A	6	95,611,865	83,047,387	79,085,378	177,115,609	171,016,369
Res11	B	3	36,452,540	31,013,886	27,878,364	73,516,039	68,689,121
Res11	B	4	38,698,164	35,379,567	32,465,388	87,076,423	82,590,244
Res11	B	6	49,051,814	46,381,764	43,080,237	100,436,597	99,780,950
Res11	C	3	3,931,044	-5,876,547	-8,698,649	29,371,275	25,026,845
Res11	C	4	1,281,944	-2,963,654	-5,586,549	32,956,250	28,918,485
Res11	C	6	7,513,448	3,894,350	922,622	44,276,292	39,701,522
Res12	A	5	59,166,250		69,199,022		108,828,842
Res12	B	5	27,809,743		42,296,958		62,990,172
Res12	C	5	-1,224,469		13,943,470		25,562,857
Res12	D	5	-13,653,599		-1,187,913		4,761,404
MU2	A	3	40,321,170	84,365,869	79,902,905	152,417,541	145,811,057
MU2	B	3	30,928,338	54,683,753	50,964,564	91,707,914	86,202,381
MU2	C	3	10,225,359	19,567,523	16,220,145	52,552,834	47,597,971
MU2	D	3	-2,133,024	5,133,532	2,529,928	29,715,560	25,861,648

Table F.3: Sensitivity testing case studies results – higher BLV

Report Reference	Market Value area	AH Mix Type	2017 Baseline RV/ha minus higher BLV £s	Sens. Test RV/ha minus higher BLV £s	Sen. Test no grd rent RV/ha minus higher BLV £s	Sens. Test projected values/ costs RV/ha minus higher BLV £s	Sens. Test projected values/ costs no grd rent RV/ha minus higher BLV £s
Res3	C	3	7,304,324	5,412,711	5,145,663	12,575,015	12,209,546
Res3	D	3	7,808,778	3,352,704	3,145,000	8,730,828	8,446,575
Res3	E	3	1,640,589	-517,680	-695,712	3,105,858	2,862,212
Res5	C	5	-354,075		6,695,147		11,626,849
Res5	D	5	-5,026,906		907,007		3,318,325
Res9	D	3	5,005,181	3,079,796	2,925,931	7,605,755	7,386,761
Res9	E	3	262,592	422,164	290,354	3,559,495	3,371,890
Res9	E	4	443,760	-28,237	-150,743	2,833,592	2,659,230
Res9	E	6	345,092	733,848	594,973	4,077,131	3,879,472
Res11	A	3	7,504,248	-3,188,716	-6,951,519	70,330,906	64,538,331
Res11	A	4	36,356,617	22,512,672	19,015,479	114,360,523	108,976,836
Res11	A	6	46,210,668	33,646,190	29,684,180	127,714,411	121,615,171
Res11	B	3	20,733,977	15,295,323	12,159,802	57,797,476	52,970,558
Res11	B	4	22,979,601	19,661,005	16,746,825	71,357,860	66,871,681
Res11	B	6	33,333,251	30,663,201	27,361,674	84,718,034	84,062,387
Res11	C	3	-7,296,501	-17,104,092	-19,926,193	18,143,731	13,799,300
Res11	C	4	-9,945,601	-14,191,199	-16,814,094	21,728,706	17,690,941
Res11	C	6	-3,714,097	-7,333,194	-10,304,923	33,048,747	28,473,977
Res12	A	5	9,765,053		19,797,824		59,427,644
Res12	B	5	12,091,180		26,578,395		47,271,609
Res12	C	5	-12,452,014		2,715,925		14,335,312
Res12	D	5	-20,390,126		-7,924,440		-1,975,123

Report Refer-ence	Market Value area	AH Mix Type	2017 Baseline RV/ha minus higher BLV £s	Sens. Test RV/ha minus higher BLV £s	Sen. Test no grd rent RV/ha minus higher BLV £s	Sens. Test projected val-ues/ costs RV/ha minus higher BLV £s	Sens. Test projected val-ues/ costs no grd rent RV/ha minus higher BLV £s
MU2	A	3	-14,615,767	29,428,932	24,965,968	97,480,604	90,874,120
MU2	B	3	13,450,860	37,206,276	33,487,087	74,230,437	68,724,904
MU2	C	3	-2,258,125	7,084,039	3,736,661	40,069,351	35,114,488
MU2	D	3	-9,622,514	-2,355,957	-4,959,561	22,226,071	18,372,159

ANNEX G – STUDENT ACCOMMODATION VALUES

1. The values for student accommodation development used in the LPVS were based upon various market reports and the Student Accommodation Survey by the University of London 2015[35]. Average rents were adjusted for value band differences and for service costs to provide the capital values in the testing[36].

2. Cross checks have been made on these values, using rental data from 43 London PBSA buildings with a total of 9,731 bedrooms[37]. The PBSA schemes in this cross check are linked to an education institution provider in line with Draft London Plan Policy H17, and capital values were estimated using adjusted gross rents.

3. The outputs from this exercise (see the table below) indicate that the values used in the LPVS are appropriate and even conservative:

Table G.1: PBSA values for schemes linked to education provider

Value band	Total units	Gross rent[38]	Gross rent per unit	Capital value
A	570	£6,988,611	£12,257	£229,821
B	4147	£51,109,434	£12,326	£231,104
C	2526	£24,024,374	£9,512	£167,860
D	1877	£19,864,273	£10,585	£176,416
E	611	£5,343,915	£8,746	£145,770

4. Student rents in London have increased by 2.51% over the last year[39] which is not reflected in the 2017 rental values referred to above, and so the capital values slightly underestimate current day position.

[35] See LPVS Technical Report Annex B
[36] See LPVS Table 6.1
[37] Data sourced from Knight Frank London Market Report on Student Accommodation (2017)
[38] Knight Frank London Market Report on Student Accommodation (2017)
[39] Knight Frank UK Student Housing Rental Update 2018/19 (Sept 2018).

ANNEX H - SMALL SITES SENSITIVITY TESTING RESULTS

Table H.1: Small sites sensitivity testing results (Res17 typology)

Report Refer-ence	Market Value area	AH Mix Type	BLV	Baseline RV less BLV £s	Sens. Test RV less BLV £s	Sens. Test Pro-jected value / costs RV less BLV £s
Res17	A	Base	2,800,000	3,147,002	2,736,573	4,338,604
Res17	A	With £30,000 per unit	2,800,000	3,011,474	2,601,045	4,181,433
Res17	B	Base	1,550,000	1,726,203	1,614,915	2,563,428
Res17	B	With £30,000 per unit	1,550,000	1,590,676	1,479,388	2,406,257
Res17	C	Base	1,050,000	1,027,009	1,000,475	1,636,791
Res17	C	With £30,000 per unit	1,050,000	891,482	864,947	1,479,619
Res17	D	Base	805,000	639,547	621,114	1,047,781
Res17	D	With £30,000 per unit	805,000	504,019	485,586	890,609
Res17	E	Base	510,000	295,760	389,875	702,868
Res17	E	With £30,000 per unit	510,000	160,232	254,347	545,696

Table H.2: Small sites sensitivity testing results (Res18 typology)

Report Refer-ence	Market Value area	AH Mix Type	BLV	Baseline RV less BLV £s	Sens. Test RV less BLV £s	Sens Test no grd rent RV less BLV £s	Sens. Test Projected value/ costs RV less BLV £s	Sens. Test Projected value/ costs no grd rent RV less BLV £s
Res18	A	3	4,610,000	1,781,544	1,201,963	1,132,147	3,051,925	2,960,053
Res18	A	4	4,610,000	2,593,788	1,997,964	1,907,203	4,271,906	4,152,472
Res18	A	6	4,610,000	2,928,272	2,350,766	2,260,005	4,676,366	4,556,932
Res18	B	3	2,765,000	1,263,816	820,179	761,708	1,954,538	1,877,594
Res18	B	4	2,765,000	1,313,544	947,447	871,521	2,291,073	2,191,162
Res18	B	6	2,765,000	1,633,334	1,300,509	1,224,584	2,695,847	2,595,936
Res18	C	3	1,890,000	582,994	201,833	112,817	1,145,360	1,028,223
Res18	C	4	1,890,000	585,048	281,669	198,762	1,239,988	1,130,889
Res18	C	6	1,890,000	752,747	500,360	406,981	1,555,974	1,433,095
Res18	D	3	1,440,000	259,868	34,325	-34,619	758,325	667,601
Res18	D	4	1,440,000	255,691	-20,966	-85,546	675,187	590,206
Res18	D	6	1,440,000	327,955	165,888	92,581	949,214	852,749
Res18	E	3	980,000	-219,914	-156,655	-215,999	351,620	273,529
Res18	E	4	980,000	-165,263	-236,433	-291,414	234,525	162,176
Res18	E	6	980,000	-221,869	-110,337	-173,172	428,802	346,116

ANNEX I – LARGE SITES SENSITIVITY TESTING RESULTS

Table I.1: Large sites sensitivity testing results (low BLV)

Report Reference	Market Value area	AH Test	Baseline RV less lower BLV £s/ha	Sens. Test RV less lower BLV £s/ha	Sens. Test no grd rent RV less lower BLV £s/ha	Sens. Test Projected value/ costs RV less lower BLV £s/ha	Sens. Test Projected value/ costs no grd rent RV less lower BLV £s/ha	Baseline + heat pumps RV less lower BLV £s/ha
MU3	B	3	68,790,374	68,954,348	64,850,846	104,907,240	98,801,825	
MU3	B	4	74,703,730	74,544,238	70,730,351	119,446,565	113,801,165	
MU3	B	6	82,074,654	84,164,347	79,843,543	131,162,839	124,767,091	
MU3	C	3	38,743,124	35,455,162	31,761,920	65,336,205	59,869,387	
MU3	C	4	37,811,261	37,175,452	33,742,910	67,103,728	62,022,803	37,493,746
MU3	C	6	43,440,616	44,018,688	40,129,922	78,313,855	72,557,618	
MU3	D	3	15,941,982	16,486,486	13,613,868	38,302,530	34,050,418	
MU3	D	4	14,975,143	14,168,089	11,498,288	34,264,432	30,312,538	14,627,211
MU5	B	3	50,591,137	51,181,631	48,458,730	79,738,765	75,708,245	
MU5	C	3	19,076,472	16,289,154	13,838,440	39,211,869	35,584,269	18,767,020
MU5	D	3	4,902,898	5,510,857	3,604,860	22,001,889	14,120,429	4,593,447
MU5	D	4	4,999,933	4,420,947	2,649,499	19,815,262	17,193,105	
MU5	D	6	6,526,242	9,208,877	7,201,776	30,456,485	27,485,509	

Table I.2: Large sites sensitivity testing results (mid BLV)

Report Reference	Market Value area	AH Test	Baseline RV less mid BLV £s/ha	Sens. Test RV less mid BLV £s/ha	Sens. Test no grd rent RV less mid BLV £s/ha	Sens. Test Projected value/costs RV less mid BLV £s/ha	Sens. Test Projected value/costs no grd rent RV less mid BLV £s/ha	Baseline + heat pumps RV less mid BLV £'s/ha
MU3	B	3	54,001,624	54,165,598	50,062,096	90,118,490	84,013,075	
MU3	B	4	59,914,980	59,755,488	55,941,601	104,657,815	99,012,415	
MU3	B	6	67,285,904	69,375,597	65,054,793	116,374,089	109,978,341	
MU3	C	3	28,179,374	24,891,412	21,198,170	54,772,455	49,305,637	
MU3	C	4	27,247,511	26,611,702	23,179,160	56,539,978	51,459,053	26,929,996
MU3	C	6	32,876,866	33,454,938	29,566,172	67,750,105	61,993,868	
MU3	D	3	9,603,232	10,147,736	7,275,118	31,963,780	27,711,668	
MU3	D	4	8,636,393	7,829,339	5,159,538	27,925,682	23,973,788	8,288,461
MU5	B	3	37,201,137	37,791,631	35,068,730	66,348,765	62,318,245	
MU5	C	3	9,511,472	6,724,154	4,273,440	29,646,869	26,019,269	
MU5	D	3	-837,103	-229,143	-2,135,140	16,261,889	8,380,429	
MU5	D	4	-740,067	-1,319,053	-3,090,501	14,075,262	11,453,105	
MU5	D	6	786,242	3,468,877	1,461,776	24,716,485	21,745,509	-5,740,000

Table I.3: Large sites sensitivity testing results (higher BLV)

Report Reference	Market Value area	AH Test	Baseline RV less higher BLV £s/ha	Sens. Test RV less higher BLV £s/ha	Sens. Test no grd rent RV less higher BLV £s/ha	Sens. Test Projected value/costs RV less higher BLV £s/ha	Sens. Test Projected value/costs no grd rent RV less higher BLV £s/ha	Baseline + heat pumps RV less higher BLV £'s/ha
MU3	B	3	24,422,874	24,586,848	20,483,346	60,539,740	54,434,325	
MU3	B	4	30,336,230	30,176,738	26,362,851	75,079,065	69,433,665	
MU3	B	6	37,707,154	39,796,847	35,476,043	86,795,339	80,399,591	
MU3	C	3	7,051,874	3,763,912	70,670	33,644,955	28,178,137	
MU3	C	4	6,120,011	5,484,202	2,051,660	35,412,478	30,331,553	5,802,496
MU3	C	6	11,749,366	12,327,438	8,438,672	46,622,605	40,866,368	
MU3	D	3	-3,073,018	-2,528,514	-5,401,132	19,287,530	15,035,418	
MU3	D	4	-4,039,857	-4,846,911	-7,516,712	15,249,432	11,297,538	-4,387,789
MU5	B	3	23,811,137	24,401,631	21,678,730	52,958,765	48,928,245	
MU5	C	3	-53,528	-2,840,846	-5,291,560	20,081,869	16,454,269	
MU5	D	3	-6,577,103	-5,969,143	-7,875,140	10,521,889	2,640,429	
MU5	D	4	-6,480,067	-7,059,053	-8,830,501	8,335,262	5,713,105	
MU5	D	6	-4,953,758	-2,271,123	-4,278,224	18,976,485	16,005,509	-11,480,000

Table I.4: Large sites sensitivity testing results (MU4 typology)

Report Reference	Market Value area	Developer return	Baseline RV £s/ha	Sens. Test RV £s/ha
MU4	B	17.50%	84,234,506	153,371,976
MU4	B	10%	96,388,481	164,890,889
MU4	C	17.50%	32,702,556	81,283,215
MU4	C	10%	41,055,855	89,316,218
MU4	D	17.50%	7,812,366	44,078,518
MU4	D	10%	14,139,329	50,078,434

Table I.5: Large sites sensitivity testing results (MU3, MU5, MU6 typologies)

Report Reference	Market Value area	AH Test	Base Net RV less BMLV low/ha	Increased Costs Net RV less BMLV low/ha	Grant Added Net RV less BMLV low/ha	Base Net RV less BMLV mid/ha	Increased Costs Net RV less BMLV mid/ha	Grant Added Net RV less BMLV mid/ha	Base Net RV less BMLV higher/ha	Increased Costs Net RV less BMLV higher/ha	Grant Added Net RV less BMLV higher/ha
MU3	B	Base	111,575,352	107,331,044	111,575,352	96,786,602	92,542,294	96,786,602	81,996,602	77,752,294	81,996,602
MU3	B	1	58,200,271	53,955,962	62,897,350	43,411,521	39,167,212	48,108,600	28,621,521	24,377,212	33,318,600
MU3	B	2	61,259,727	57,015,418	64,886,916	46,470,977	42,226,668	50,098,166	31,680,977	27,436,668	35,308,166
MU3	B	3	68,790,374	64,546,066	71,138,914	54,001,624	49,757,316	56,350,164	39,211,624	34,967,316	41,560,164
MU3	B	4	74,703,730	70,459,421	77,991,685	59,914,980	55,670,671	63,202,935	45,124,980	40,880,671	48,412,935

Report Refer-ence	Market Value area	AH Test	Base Net RV less BMLV low/ha	Increased Costs Net RV less BMLV low/ha	Grant Added Net RV less BMLV low/ha	Base Net RV less BMLV mid/ha	Increased Costs Net RV less BMLV mid/ha	Grant Added Net RV less BMLV mid/ha	Base Net RV less BMLV higher/ha	Increased Costs Net RV less BMLV higher/ha	Grant Added Net RV less BMLV higher/ha
MU3	B	5	76,755,877	72,511,568	79,294,909	61,967,127	57,722,818	64,506,159	47,177,127	42,932,818	49,716,159
MU3	B	6	82,074,654	77,830,345	83,718,632	67,285,904	63,041,595	68,929,882	52,495,904	48,251,595	54,139,882
MU3	B	7	91,188,902	86,944,593	93,067,734	76,400,152	72,155,843	78,278,984	61,610,152	57,365,843	63,488,984
MU3	B	8	92,433,861	88,189,552	93,884,736	77,645,111	73,400,802	79,095,986	62,855,111	58,610,802	64,305,986
MU3	B	9	95,431,500	91,187,192	96,370,916	80,642,750	76,398,442	81,582,166	65,852,750	61,608,442	66,792,166
MU3	C	Base	52,966,869	48,722,561	52,966,869	42,403,119	38,158,811	42,403,119	31,839,369	27,595,061	31,839,369
MU3	C	1	30,794,159	26,549,851	35,491,239	20,230,409	15,986,101	24,927,489	9,666,659	5,422,351	14,363,739
MU3	C	2	31,900,272	27,655,964	35,527,461	21,336,522	17,092,214	24,963,711	10,772,772	6,528,464	14,399,961
MU3	C	3	38,743,124	34,498,816	41,091,664	28,179,374	23,935,066	30,527,914	17,615,624	13,371,316	19,964,164
MU3	C	4	37,811,261	33,566,953	41,099,217	27,247,511	23,003,203	30,535,467	16,683,761	12,439,453	19,971,717
MU3	C	5	38,624,926	34,380,617	41,163,958	28,061,176	23,816,867	30,600,208	17,497,426	13,253,117	20,036,458
MU3	C	6	43,440,616	39,196,308	45,084,594	32,876,866	28,632,558	34,520,844	22,313,116	18,068,808	23,957,094
MU3	C	7	44,906,222	40,661,914	46,785,054	34,342,472	30,098,164	36,221,304	23,778,722	19,534,414	25,657,554
MU3	C	8	45,360,379	41,116,071	46,811,255	34,796,629	30,552,321	36,247,505	24,232,879	19,988,571	25,683,755
MU3	C	9	48,103,059	43,858,750	49,042,474	37,539,309	33,295,000	38,478,724	26,975,559	22,731,250	27,914,974
MU3	D	Base	20,100,991	15,856,683	20,100,991	13,762,241	9,517,933	13,762,241	7,424,741	3,180,433	7,424,741
MU3	D	1	12,051,887	7,807,579	16,748,967	5,713,137	1,468,829	10,410,217	-624,363	-4,868,671	4,072,717
MU3	D	2	13,041,438	8,797,129	16,668,627	6,702,688	2,458,379	10,329,877	365,188	-3,879,121	3,992,377
MU3	D	3	15,941,982	11,697,673	18,290,521	9,603,232	5,358,923	11,951,771	3,265,732	-978,577	5,614,271
MU3	D	4	14,975,143	10,730,834	18,263,098	8,636,393	4,392,084	11,924,348	2,298,893	-1,945,416	5,586,848
MU5	B	Base	85,663,050	81,153,811	85,663,050	72,273,050	67,763,811	72,273,050	58,883,050	54,373,811	58,883,050
MU5	B	1	40,439,655	35,930,417	45,429,795	27,049,655	22,540,417	32,039,795	13,659,655	9,150,417	18,649,795
MU5	B	2	43,400,827	38,891,588	47,254,324	30,010,827	25,501,588	33,864,324	16,620,827	12,111,588	20,474,324
MU5	B	3	50,591,136	46,081,898	53,086,206	37,201,136	32,691,898	39,696,206	23,811,136	19,301,898	26,306,206

Report Refer-ence	Market Value area	AH Test	Base Net RV less BMLV low/ha	Increased Costs Net RV less BMLV low/ha	Grant Added Net RV less BMLV low/ha	Base Net RV less BMLV mid/ha	Increased Costs Net RV less BMLV mid/ha	Grant Added Net RV less BMLV mid/ha	Base Net RV less BMLV higher/ha	Increased Costs Net RV less BMLV higher/ha	Grant Added Net RV less BMLV higher/ha
MU5	C	Base	33,569,248	29,060,009	33,569,248	24,004,248	19,495,009	24,004,248	14,439,248	9,930,009	14,439,248
MU5	C	1	12,382,975	7,873,737	17,373,115	2,817,975	-1,691,263	7,808,115	-6,747,025	-11,256,263	-1,756,885
MU5	C	2	14,746,223	10,236,985	18,599,720	5,181,223	671,985	9,034,720	-4,383,777	-8,893,015	-530,280
MU5	C	3	19,076,472	14,567,233	21,571,542	9,511,472	5,002,233	12,006,542	-53,528	-4,562,767	2,441,542
MU5	D	Base	10,254,026	5,744,787	10,254,026	4,514,026	4,787	4,514,026	-1,225,974	-5,735,213	-1,225,974
MU5	D	1	2,165,041	-2,344,198	7,155,181	-3,574,959	-8,084,198	1,415,181	-9,314,959	-13,824,198	-4,324,819
MU5	D	2	3,537,605	-971,634	7,391,102	-2,202,395	-6,711,634	1,651,102	-7,942,395	-12,451,634	-4,088,898
MU5	D	3	4,902,897	393,659	7,397,967	-837,103	-5,346,341	1,657,967	-6,577,103	-11,086,341	-4,082,033
MU5	D	4	4,999,933	490,695	8,493,031	-740,067	-5,249,305	2,753,031	-6,480,067	-10,989,305	-2,986,969
MU5	D	5	5,567,115	1,057,876	8,264,563	-172,885	-4,682,124	2,524,563	-5,912,885	-10,422,124	-3,215,437
MU5	D	6	6,526,242	2,017,003	8,272,791	786,242	-3,722,997	2,532,791	-4,953,758	-9,462,997	-3,207,209
MU5	D	7	7,271,490	2,762,252	9,267,546	1,531,490	-2,977,748	3,527,546	-4,208,510	-8,717,748	-2,212,454
MU5	D	8	7,566,879	3,057,641	9,108,278	1,826,879	-2,682,359	3,368,278	-3,913,121	-8,422,359	-2,371,722
MU5	D	9	8,121,662	3,612,424	9,119,690	2,381,662	-2,127,576	3,379,690	-3,358,338	-7,867,576	-2,360,310
MU6	B	Base	49,980,941	47,462,383	49,980,941	42,216,941	39,698,383	42,216,941	34,456,941	31,938,383	34,456,941
MU6	B	1	24,414,232	21,895,674	27,201,453	16,650,232	14,131,674	19,437,453	8,890,232	6,371,674	11,677,453
MU6	B	2	26,069,999	23,551,441	28,222,353	18,305,999	15,787,441	20,458,353	10,545,999	8,027,441	12,698,353
MU6	B	3	30,159,751	27,641,193	31,553,362	22,395,751	19,877,193	23,789,362	14,635,751	12,117,193	16,029,362
MU6	C	Base	20,588,166	18,069,607	20,588,166	15,044,166	12,525,607	15,044,166	9,500,166	6,981,607	9,500,166
MU6	C	1	9,101,172	6,582,614	11,888,393	3,557,172	1,038,614	6,344,393	-1,986,828	-4,505,386	800,393
MU6	C	2	9,865,730	7,347,171	12,018,084	4,321,730	1,803,171	6,474,084	-1,222,270	-3,740,829	930,084
MU6	C	3	12,925,240	10,406,681	14,318,850	7,381,240	4,862,681	8,774,850	1,837,240	-681,319	3,230,850
MU6	C	4	12,565,987	10,047,429	14,517,042	7,021,987	4,503,429	8,973,042	1,477,987	-1,040,571	3,429,042
MU6	D	Base	6,023,869	3,505,310	6,023,869	2,699,869	181,310	2,699,869	-628,131	-3,146,690	-628,131

Report Refer-ence	Market Value area	AH Test	Base Net RV less BMLV low/ha	Increased Costs Net RV less BMLV low/ha	Grant Added Net RV less BMLV low/ha	Base Net RV less BMLV mid/ha	Increased Costs Net RV less BMLV mid/ha	Grant Added Net RV less BMLV mid/ha	Base Net RV less BMLV higher/ha	Increased Costs Net RV less BMLV higher/ha	Grant Added Net RV less BMLV higher/ha
MU6	D	1	1,740,253	-778,306	4,527,474	-1,583,747	-4,102,306	1,203,474	-4,911,747	-7,430,306	-2,124,526
MU6	D	2	2,173,122	-345,436	4,325,476	-1,150,878	-3,669,436	1,001,476	-4,478,878	-6,997,436	-2,326,524
MU6	D	3	2,943,865	425,306	4,337,475	-380,135	-2,898,694	1,013,475	-3,708,135	-6,226,694	-2,314,525
MU6	D	4	3,034,280	515,721	4,985,334	-289,720	-2,808,279	1,661,334	-3,617,720	-6,136,279	-1,666,666
MU6	D	5	3,338,004	819,445	4,844,651	14,004	-2,504,555	1,520,651	-3,313,996	-5,832,555	-1,807,349
MU6	D	6	3,746,699	1,228,140	4,722,226	422,699	-2,095,860	1,398,226	-2,905,301	-5,423,860	-1,929,774
MU6	D	7	4,330,368	1,811,810	5,445,257	1,006,368	-1,512,190	2,121,257	-2,321,632	-4,840,190	-1,206,743
MU6	D	8	4,509,088	1,990,529	5,370,029	1,185,088	-1,333,471	2,046,029	-2,142,912	-4,661,471	-1,281,971
MU6	D	9	4,809,403	2,290,844	5,366,847	1,485,403	-1,033,156	2,042,847	-1,842,597	-4,361,156	-1,285,153

Table I.6: Large sites sensitivity testing results (MU4 typology), increased costs and grant scenarios

Re-port Refer-ence	Mar-ket Value area	Devel-oper re-turn	Baseline RV £s/ha	Increased Costs Net RV/ha	Grant Added Net RV/ha
MU4	B	17.50%	84,234,506	79,660,007	86,990,756
MU4	B	10%	96,388,481	91,813,982	99,144,731
MU4	C	17.50%	32,702,556	28,128,057	35,458,806
MU4	C	10%	41,055,855	36,481,356	43,812,105
MU4	D	17.50%	7,812,366	3,237,867	10,568,616

Re-port Refer-ence	Mar-ket Value area	Devel-oper re-turn	Baseline RV £s/ha	Increased Costs Net RV/ha	Grant Added Net RV/ha
MU4	D	10%	14,139,329	9,564,830	16,895,579

ANNEX J – BENCHMARK LAND VALUES

1. The approach to Benchmark Land Values (BLV) is set out at Section 8 and Annex J of the LPVS. This involved analysis of a range of publicly available viability documents assessed as part of the planning process. These are informed by comparable market evidence for rents, yields and values, and include a premium above existing use value[40]. These are assessed as providing a competitive return to the landowner, consistent with the methodology and assumptions applied in the relevant viability assessment. National guidance confirms that BLVs in viability assessments are appropriate evidence for informing BLVs in plan viability studies[41].

2. This analysis identified higher BLVs in the higher value areas and lower BLVs in the lower value areas. There was also variation within value areas and low, medium and high BLVs were tested in each value band. To enable comparison across typologies these were assessed on a per residential unit basis for residential schemes and a per sq m basis for non-residential floorspace.

3. BLVs from additional available viability assessments for residential-led schemes have been reviewed by the GLA and are set out in the Table below. A number of the schemes incorporate an element of commercial floorspace, however no adjustment has been made to take account of this which has the effect of increasing the benchmark land value when calculated on a per unit basis.

Table J.1 BLVs from viability assessments for residential-led schemes

Address	Borough	Value zone	Site current use	Residential units	Commercial floorspace (sq m)	Land Value Benchmark (£)[42]	Benchmark per residential unit (£)[43]
Prices Candles Factory	Wandsworth	B	Retail, Sui Generis (Car Showroom) Studio (D2)	136	9047	£11,400,000	£84,000
Stag Brewery	Richmond Upon Thames	B	Brewery Buildings	443	10059	£33,150,000	£75,000
Appian Court & Regency Court	Tower Hamlets	C	Residential (Sheltered Housing)	92	0	£4,910,292	£53,000

[40] Some BLVs were also informed by alternative use valuations and other market evidence.
[41] Planning Practice Guidance, Viability, July 2018, Paragraph: 016 Reference ID: 1001620180724.

[42] In some instances, the BLV proposed by the applicant has been used where either the council's assessment is not in the public domain or where this has not yet been assessed by the council and/or the GLA.

[43] BLV per unit has been rounded to the nearest £1000

Address	Borough	Value zone	Site current use	Residential units	Commercial floorspace (sq m)	Land Value Benchmark (£)[42]	Benchmark per residential unit (£)[43]
London Chest Hospital	Tower Hamlets	C	Former hospital buildings	291	421	£15,000,000	£52,000
Former Claredon Gas Works	Haringey	C	Gas works	1521	7463	£73,711,000	£48,000
Abbey House, Bakers Row	Newham	D	Residential	100	123	£4,674,000	£46,740
Westward House, 155-157 Staines Road, TW3 3JB	Hounslow	D	Office	59	0	£2,265,491	£38,000
Woolwich Catholic Club	Greenwich	D	Church, community facility	65	2058	£2,382,000	£37,000
1 Creekside, Deptford	Lewisham	D	Residential, Commercial	56	1541	£1,944,000	£35,000
Axion House	Lewisham	D	Residential	153	739	£5,248,500	£34,000
Layton Road, Brentford	Hounslow	D	Car dealership and car park	139	0.23 ha (provision of primary school)	£4,710,000	£34,000
891 Great West Road, TW7 5PD	Hounslow	D	Office, Warehouse	16	0	£528,000	£33,000
2 Scrubs Lane	OPDC	C	Church, ancillary nursery	92	983	£2,985,000	£32,000
Jolles House & Blue Anchor Public House	Tower Hamlets	D	Largely Vacant, comprising of a public house and	70	0	£2,240,000	£32,000

Address	Borough	Value zone	Site current use	Residential units	Commercial floorspace (sq m)	Land Value Benchmark (£)[42]	Benchmark per residential unit (£)[43]
			block of 12 flats				
Victoria Hall and Cumberland Hotel	Harrow	C	Victoria Hall, Hotel	204	78	£6,300,000	£30,000
Chequers Lane, Dagenham	Barking & Dagenham	E	Industrial	71	175	£1,836,000	£26,000
164-196 Trundley's Road and 1-9 Sanford Street	Lewisham	D	Residential, Warehouse	189	2200	£4,768,500	£25,000
Powis Estate	Greenwich	D	Residential	310	3250	£7,400,000	£24,000
East Ham Market	Newham	D	Residential, Retail	277	1192	£6,684,000	£24,000
Vaughan Road	Harrow	D	Car Park	33	242	£635,000	£22,000
Greenwich Peninsula Plot 201	Greenwich	C	Cleared site	262	2402	£5,500,000	£21,000
VIP IE Charlton Rd Greenwich	Greenwich	D	Industrial	975	21624	£15,000,000	£15,000

4. Together with the evidence in the LPVS, BLVs from 22 recent development proposals have been considered in 11 boroughs[44]. The BLVs applied in the LPVS (see Annex J, Table J2) are consistent with recent BLVs as assessed as part of the planning process as identified in the table above and within LPVS Annex J. While BLVs determined in individual applications may be lower or higher than those applied in the study, the low, medium and high BLVs used (see Table J.2 below) provide a range of appropriate benchmarks for assessing viability within the study.

[44] The LPVS undertook testing on the basis of different value bands rather than by individual borough. Sufficient information has been considered to inform the approach in these value bands.

Table J.2 Residential benchmark land values - £s per sq m (of new development)

Value Band	Low	Mid	High
Band A	75,000	190,000	300,000
Band B	40,000	75,000	110,000
Band C	30,000	55,000	80,000
Band D	20,000	35,000	50,000
Band E	10,000	20,000	30,000

5. Most schemes in the highest value band (Band A/ Central Value Area) are commercial led or mixed use with a significant proportion of commercial floorspace and they may also include larger than typical residential units. Assessing these on a per residential unit basis would overstate the BLV and so these are considered on a floorspace basis below.

Value Band A/ Central Value Area

6. The LPVS noted that limited information was available for BLVs in the highest value areas. This arises partly due to the nature of schemes within Central London which tend to be commercial led and may not be subject to a viability assessment. The LPVS considered land values for uses that may come forward for development with reference to evidence base documents and previous London wide viability studies. BLVs were also considered in relation to the difference in development values between bands. Significantly higher BLVs were used in Band A in recognition of the higher value of existing uses that can occur in this area.

7. Additional schemes have been considered by the GLA which are assessed on a total development floorspace basis given the commercial led/ mixed use nature of the majority of schemes in the Central Value Area[45] . It is also the case that residential developments in Central London can include very large residential units and so calculating land values on a per unit basis can inflate the BLV. Further details are provided below[46].

[45] This is calculated on a gross internal area (excluding basement areas) basis for consistency with the approach in the LPVS.
[46] The sites have not been included as the information is not currently publicly available.

8. A BLV for a development proposal in the Royal Borough of Kensington and Chelsea consisting of residential units and commercial uses was assessed as £33,000,000. This equates to a BLV of £2,243/ sq m which is just above the mid BLV applied in the Central Value area for commercial development.

9. The BLV for a mixed-use development in Westminster proposing residential and commercial uses with a total floorspace of 14,291 sq m was assessed as £43,000,000. This is a BLV of £3,009 / sq m which is within the high BLV applied in the Central Value area.

10. The BLV for a residential scheme in Westminster with residential units (9213 sq m) was assessed at £15,800,000 which equates to £1,714/ sq m and £79,000 per unit, which are close to the mid BLV for the Central Value area and low BLV for value band A applied in the study.

11. The BLV for a mixed used scheme with residential and commercial uses in Westminster (15,332 sq m) was £52,000,000. This equates to £3,391 / sq m which is close to the high BLV for the central value area applied in the study.

12. A BLV of £92,000,000 was assessed for a proposed mixed-use development in the City of Westminster with residential, retail, office, leisure and hotel uses. This equates to a BLV of £1,540 / sq m which is less than the mid BLV applied in the Central Value area.

13. Based on the assessment of BLVs, low, mid and high BLVs for central value areas are set out in below in table J.3. The central value/ value band A schemes have been assessed on a total development floorspace basis, given the commercial led/ mixed use nature of the majority of schemes in the Central Value Area, as recognised above. These value ranges remain consistent with the LPVS.

Table J.3: Non-residential benchmark land values - £s per sq m (of new development)

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

14. BLVs for some schemes may be higher than those applied within the LPVS, however this may arise due to higher development values than those applied in the LPVS, in which case these do not allow for a consistent comparison with the typologies tested in the study. Furthermore, BLVs for some schemes may be inflated where these

were based on land transactions which assumed lower levels of affordable housing provision and which were based on assumptions that are not compatible with the approach in planning viability testing. These are not consistent with current national or Mayoral guidance and do not provide appropriate evidence for informing viability testing.

BLVs and Land Transactions

15. National and Mayoral guidance state that BLVs should be based on Existing Use Value (EUV) plus a premium. Market evidence used to inform BLVs should include current uses, costs and values wherever possible. BLVs assessed as part of the planning process, are appropriate evidence for informing BLVs applied in an area wide viability assessment[47].

16. Application stage viability assessments use a similar methodology to the LPVS based on a residual approach which adopts standardised inputs and ignores the specific characteristics of individual developers. In contrast, land transactions for development land may not be based on the value of the land in its current use and can be based on the proposed use or development for which planning permission is being sought.

17. Land transactions reflect the circumstances and assumptions of individual developers and are typically the highest bid (or based on the most favourable terms) offered to the landowner. As the price paid arising from a competitive bidding process will in most cases be higher than other bids, this is likely to be based on more optimistic assumptions than those made by other developers. Similarly, these are typically more optimistic than the standardised assumptions applied in planning viability appraisals and those of the LPVS. Land transaction prices reflect factors such as the cost efficiencies of the particular developer, lower profit requirements, higher estimates of development value or a combination of these and others. The price paid for land may also be based on more optimistic assumptions of development density or a different planning use to those assumed by other developers, which may not be consistent with the development plan.

18. Furthermore, in some cases land bids have been inflated because they have not adequately reflected planning policies for affordable housing, infrastructure or other relevant plan requirements. The circularity that arises when a land transaction does not properly reflect plan policies, which is then used within a viability appraisal to justify a departure from planning policies, has been widely recognised in a range of reports, as well as the High Court Judgment and appeal decision at the Territorial Army Site, Parkhurst Road, Islington, amongst others[48].

[47] See Planning Practice Guidance Viability Paragraphs 14 and 16, and Affordable Housing and Viability Supplementary Planning Guidance, paragraphs 3.43 to 3.47.
[48] Parkhurst Road Ltd v Secretary of State for Communities and Local Government and London Borough of Islington (2018); Parkhurst Road Appeal Decision (2017); London Housing Commission Report (2016); London Assembly Planning Committee Report on Viability (2016); Financial Viability in Planning Decisions (RICS, Professor Neil Crosby, Professor Peter Wyatt, 2015); Viability in the Planning System, (Professor Sarah Sayce et al, 2017).

19. These issues are recognised in national guidance which states that:

> *"Under no circumstances will the price paid for land be a relevant justification for failing to accord with relevant policies in the plan."*[49]

20. These issues are also identified in the Mayor's Affordable Housing and Viability Supplementary Planning Guidance (Paragraphs 3.48 to 3.50). Following the Parkhurst Road Judgment and revised PPG, the RICS guidance on Financial Viability in Planning is being amended to ensure that it is consistent with national guidance and that it is implemented properly.

21. This issue is relevant when considering land transactions in the context of site specific viability assessments, but is particularly pertinent for area wide viability studies where land transactions pre-date publication of a plan. This was considered in the Examiner's report to the Mayoral 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. In most cases it is probably not possible to say with any certainty to what extent future policy changes – such as CIL - were taken into account when the market price was agreed."*[50]

22. For these reasons land transactions may reflect higher figures than residual and benchmark land values assessed within the planning process. The price paid for land is based on a different methodology and a set of assumptions that are normally unknown to anyone other than those involved in the transaction.

23. While BLVs for individual schemes assessed within the planning process are generally appropriate for informing BLVs in area wide studies, it should also be noted that there are instances where BLVs have been based on market transactions which were not adjusted to ensure a consistent approach with the appraisal methodology or to reflect Development Plan policies, as required by national and Mayoral guidance. As a result, these BLVs are likely to be overstated, which may have resulted in a lower level of affordable housing and other policy requirements, regardless of whether there were genuine barriers to delivery of the site. However, national guidance recognises the importance of ensuring that evidence relied properly reflects planning policy so that: *"historic benchmark land values of non-policy compliant developments are not used to inflate values over time".*[51]

24. Some parties have argued that provision of affordable housing at any level between zero and 100 per cent can be policy compliant because viability assessments can be used to justify affordable housing levels lower than policy targets. This has been used as a basis for relying on land transactions for schemes with nil or low levels of affordable housing when assessing BLVs on other schemes. This approach however

[49] Planning Practice Guidance, Viability July 2018 Paragraph, Paragraph: 006 Reference ID: 10-006-20180724
[50]Report on the Examination of the Draft Community Infrastructure Levy Charging Schedule, Planning Inspectorate, 2012.
[51] Planning Practice Guidance, Viability July 2018, Paragraph 14.

clearly perpetuates the circularity issue referred to above and was not upheld in the Parkhurst Road High Court Judgment or appeal decision.

25. While some respondents to the London Plan consultation sought to rely on land transactions when commenting on the LPVS, the consultation summary document published by the GLA identified that the majority of these transactions related to sites delivering low levels of affordable housing. No adjustment had been made to account for the policies of the draft Plan, nor to ensure that a consistent methodology was applied. This approach is not in line with national and Mayoral guidance for the reasons set out above.

Conclusion

26. The approach to BLVs applied in the LPVS and in the Addendum Report is consistent with national and Mayoral guidance. This has been informed by appropriate available evidence from viability assessments submitted as part of the planning process. Consideration of further evidence since publication of the LPVS indicates that the range of BLVs applied within the study, which vary by and within value bands, provide an appropriate basis for assessing the viability of the typologies that have been tested.

ANNEX K – LPVS VIABILITY MODELLING ERRATUM

1. The viability models used for the LPVS have been reviewed as part of sensitivity testing, and this has revealed some inconsistencies related to minor variations in the cash flows. A list of the original and the corrected viability findings is presented below, which indicates that the viability of relevant case studies was generally understated.

2. Many of the inconsistencies were within 1% change of the originally presented RV in 2017, although two in RES11 were 30%-40% different; two in CH1, two in CH2 and four in RES2 were between 13% and 18.6%; and RES4 had 10 inconsistencies between 10% and 58%. All of the larger corrections resulted in a more viable finding rather than reduced viability. Viability outcomes for two scenarios in one case study (RES2 in value band D Test 2 and Test 3) are now both viable against the upper benchmark (previously shown as unviable against this benchmark). For RES4 50% affordable housing is now viable against the mid benchmark in value band C (previously just the lower benchmark) and 35% affordable housing is viable against the lower benchmark in D (previously 20%). Overall the corrections make no substantive difference to the viability conclusions made in the LPVS.

3. Where an erratum site has been subject to sensitivity testing in this report, the sensitivity testing is based on the corrected version.

Table K.1: Original and corrected results from LPVS

Case study	Mar-ket Value area	AH Mix Type	Gross RV 2017	Gross RV amended 2018	Net RV scheme	Net RV per ha	BMLV: Low	Net RV less BMLV Low	BMLV: Mid	Net RV less BMLV mid	BMLV: High	Net RV less BMLV High	% differ-ence
Res2	B	Base	8,814,053	8,920,000	8,069,366	40,346,828	960,000	7,109,366	1,800,000	6,269,366	2,640,000	5,429,366	1.2%
Res2	B	1	5,151,995	5,131,000	4,645,936	23,229,682	960,000	3,685,936	1,800,000	2,845,936	2,640,000	2,005,936	-0.4%
Res2	B	2	5,409,767	5,400,000	4,888,983	24,444,913	960,000	3,928,983	1,800,000	3,088,983	2,640,000	2,248,983	-0.2%
Res2	B	3	6,085,835	6,096,000	5,517,831	27,589,155	960,000	4,557,831	1,800,000	3,717,831	2,640,000	2,877,831	0.2%
Res2	B	4	6,247,489	6,265,000	5,670,526	28,352,628	960,000	4,710,526	1,800,000	3,870,526	2,640,000	3,030,526	0.3%
Res2	B	5	6,430,360	6,454,000	5,841,290	29,206,452	960,000	4,881,290	1,800,000	4,041,290	2,640,000	3,201,290	0.4%
Res2	B	6	6,903,189	6,943,000	6,283,111	31,415,554	960,000	5,323,111	1,800,000	4,483,111	2,640,000	3,643,111	0.6%
Res2	B	7	7,346,065	7,402,000	6,697,825	33,489,127	960,000	5,737,825	1,800,000	4,897,825	2,640,000	4,057,825	0.8%
Res2	B	8	7,449,022	7,508,000	6,793,598	33,967,991	960,000	5,833,598	1,800,000	4,993,598	2,640,000	4,153,598	0.8%
Res2	B	9	7,720,857	7,788,000	7,046,583	35,232,916	960,000	6,086,583	1,800,000	5,246,583	2,640,000	4,406,583	0.9%
Res2	C	Base	4,152,079	4,141,000	3,751,454	18,757,268	720,000	3,031,454	1,320,000	2,431,454	1,920,000	1,831,454	-0.3%
Res2	C	1	2,431,941	2,447,000	2,220,894	11,104,472	720,000	1,500,894	1,320,000	900,894	1,920,000	300,894	0.6%
Res2	C	2	2,568,117	2,577,000	2,338,352	11,691,759	720,000	1,618,352	1,320,000	1,018,352	1,920,000	418,352	0.3%
Res2	C	3	2,990,743	2,986,000	2,707,891	13,539,453	720,000	1,987,891	1,320,000	1,387,891	1,920,000	787,891	-0.2%
Res2	D	Base	1,681,198	1,901,000	1,727,574	8,637,868	480,000	1,247,574	840,000	887,574	1,200,000	527,574	13.1%
Res2	D	1	1,095,421	1,263,000	1,151,129	5,755,646	480,000	671,129	840,000	311,129	1,200,000	-48,871	15.3%
Res2	D	2	1,169,412	1,341,000	1,221,604	6,108,018	480,000	741,604	840,000	381,604	1,200,000	21,604	14.7%
Res2	D	3	1,304,135	1,486,000	1,352,614	6,763,069	480,000	872,614	840,000	512,614	1,200,000	152,614	13.9%
Res2	E	Base	-706,783	-650,000	-638,625	-3,193,125	240,000	-878,625	480,000	-1,118,625	720,000	-1,358,625	8.0%
Res3	C	1	12,762,307	12,524,756	10,940,071	10,940,071	2,400,000	8,540,071	4,400,000	6,540,071	6,400,000	4,540,071	-1.9%
Res3	C	2	13,479,411	13,248,071	11,571,312	11,571,312	2,400,000	9,171,312	4,400,000	7,171,312	6,400,000	5,171,312	-1.7%
Res3	C	3	15,692,208	15,477,745	13,517,161	13,517,161	2,400,000	11,117,161	4,400,000	9,117,161	6,400,000	7,117,161	-1.4%
Res3	D	Base	16,305,500	16,121,313	14,078,806	14,078,806	1,600,000	12,478,806	2,800,000	11,278,806	4,000,000	10,078,806	-1.1%
Res3	D	1	11,965,643	11,833,399	10,336,720	10,336,720	1,600,000	8,736,720	2,800,000	7,536,720	4,000,000	6,336,720	-1.1%

Case study	Mar-ket Value area	AH Mix Type	Gross RV 2017	Gross RV amended 2018	Net RV scheme	Net RV per ha	BMLV: Low	Net RV less BMLV Low	BMLV: Mid	Net RV less BMLV mid	BMLV: High	Net RV less BMLV High	% differ-ence
Res3	D	2	12,455,221	12,323,906	10,764,788	10,764,788	1,600,000	9,164,788	2,800,000	7,964,788	4,000,000	6,764,788	-1.1%
Res3	D	3	13,520,174	13,382,829	11,688,916	11,688,916	1,600,000	10,088,916	2,800,000	8,888,916	4,000,000	7,688,916	-1.0%
Res3	E	Base	5,187,540	4,874,760	4,263,876	4,263,876	800,000	3,463,876	1,600,000	2,663,876	2,400,000	1,863,876	-6.0%
Res3	E	1	4,779,846	4,557,549	3,987,044	3,987,044	800,000	3,187,044	1,600,000	2,387,044	2,400,000	1,587,044	-4.7%
Res3	E	2	4,915,425	4,675,011	4,089,554	4,089,554	800,000	3,289,554	1,600,000	2,489,554	2,400,000	1,689,554	-4.9%
Res3	E	3	4,618,904	4,366,806	3,820,582	3,820,582	800,000	3,020,582	1,600,000	2,220,582	2,400,000	1,420,582	-5.5%
Res4	C	Base	9,624,451	10,070,647	8,477,779	26,493,061	2,400,000	6,077,779	4,400,000	4,077,779	6,400,000	2,077,779	4.6%
Res4	C	1	4,763,377	5,292,184	4,459,533	13,936,040	2,400,000	2,059,533	4,400,000	59,533	6,400,000	-1,940,467	11.1%
Res4	C	2	5,220,280	5,733,583	4,830,709	15,095,965	2,400,000	2,430,709	4,400,000	430,709	6,400,000	-1,569,291	9.8%
Res4	C	3	6,608,137	7,088,725	5,970,258	18,657,057	2,400,000	3,570,258	4,400,000	1,570,258	6,400,000	-429,742	7.3%
Res4	C	4	6,219,558	6,723,825	5,663,411	17,698,159	2,400,000	3,263,411	4,400,000	1,263,411	6,400,000	-736,589	8.1%
Res4	C	5	6,529,826	7,023,766	5,915,634	18,486,355	2,400,000	3,515,634	4,400,000	1,515,634	6,400,000	-484,366	7.6%
Res4	C	6	7,500,683	7,971,562	6,712,643	20,977,008	2,400,000	4,312,643	4,400,000	2,312,643	6,400,000	312,643	6.3%
Res4	D	Base	2,345,744	2,982,795	2,517,550	7,867,343	1,600,000	917,550	2,800,000	-282,450	4,000,000	-1,482,450	27.2%
Res4	D	1	1,029,096	1,627,504	1,377,875	4,305,859	1,600,000	-222,125	2,800,000	-1,422,125	4,000,000	-2,622,125	58.1%
Res4	D	4	1,418,543	2,028,940	1,715,446	5,360,768	1,600,000	115,446	2,800,000	-1,084,554	4,000,000	-2,284,554	43.0%
Res4	D	5	1,602,619	2,208,237	1,866,218	5,831,931	1,600,000	266,218	2,800,000	-933,782	4,000,000	-2,133,782	37.8%
Res4	D	6	1,914,747	2,520,882	2,129,123	6,653,511	1,600,000	529,123	2,800,000	-670,877	4,000,000	-1,870,877	31.7%
Res4	D	7	1,818,485	2,441,430	2,062,312	6,444,724	1,600,000	462,312	2,800,000	-737,688	4,000,000	-1,937,688	34.3%
Res4	D	8	1,919,886	2,539,374	2,144,674	6,702,105	1,600,000	544,674	2,800,000	-655,326	4,000,000	-1,855,326	32.3%
Res4	D	9	2,099,095	2,718,408	2,295,225	7,172,577	1,600,000	695,225	2,800,000	-504,775	4,000,000	-1,704,775	29.5%
Res4	E	Base	-6,563,954	-5,601,026	-5,503,008	-17,196,900	800,000	-6,303,008	1,600,000	-7,103,008	2,400,000	-7,903,008	14.7%
Res11	C	2	46,015,527	45,767,941	35,443,380	21,223,581	22,500,000	12,943,380	41,250,000	-5,806,620	60,000,000	-24,556,620	-0.5%
Res11	C	3	61,747,038	60,769,290	47,057,844	28,178,350	22,500,000	24,557,844	41,250,000	5,807,844	60,000,000	-12,942,156	-1.6%
Res11	C	5	58,430,473	58,690,719	45,448,556	27,214,704	22,500,000	22,948,556	41,250,000	4,198,556	60,000,000	-14,551,444	0.4%

Case study	Mar-ket Value area	AH Mix Type	Gross RV 2017	Gross RV amended 2018	Net RV scheme	Net RV per ha	BMLV: Low	Net RV less BMLV Low	BMLV: Mid	Net RV less BMLV mid	BMLV: High	Net RV less BMLV High	% differ-ence
Res11	C	6	69,474,237	69,424,102	53,758,642	32,190,804	22,500,000	31,258,642	41,250,000	12,508,642	60,000,000	-6,241,358	-0.1%
Res11	D	8	9,268,104	12,878,519	9,979,468	5,975,729	15,000,000	-5,020,532	26,250,000	-16,270,532	37,500,000	-27,520,532	39.0%
Res11	D	9	11,639,564	15,225,689	11,796,712	7,063,900	15,000,000	-3,203,288	26,250,000	-14,453,288	37,500,000	-25,703,288	30.8%
CH1	A	Base	4,020,485	4,232,850	3,703,678	12,345,592	2,450,000	1,253,678	6,200,000	-2,496,322	9,780,000	-6,076,322	5.3%
CH1	B	Base	4,166,800	4,370,235	3,823,574	12,745,248	1,300,000	2,523,574	2,450,000	1,373,574	3,590,000	233,574	4.9%
CH1	C	Base	4,166,800	4,370,235	3,823,574	12,745,248	980,000	2,843,574	1,790,000	2,033,574	2,610,000	1,213,574	4.9%
CH1	D	Base	-1,867,182	-1,519,223	-1,492,637	-4,975,455	650,000	-2,142,637	1,140,000	-2,632,637	1,630,000	-3,122,637	18.6%
CH1	E	Base	-1,867,182	-1,519,223	-1,492,637	-4,975,455	330,000	-1,822,637	650,000	-2,142,637	980,000	-2,472,637	18.6%
CH2	A	Base	3,882,110	4,102,920	3,590,287	11,967,624	2,450,000	1,140,287	6,200,000	-2,609,713	9,780,000	-6,189,713	5.7%
CH2	B	Base	4,028,425	4,240,305	3,710,184	12,367,279	1,300,000	2,410,184	2,450,000	1,260,184	3,590,000	120,184	5.3%
CH2	C	Base	4,028,425	4,240,305	3,710,184	12,367,279	980,000	2,730,184	1,790,000	1,920,184	2,610,000	1,100,184	5.3%
CH2	D	Base	-2,014,552	-1,657,598	-1,628,590	-5,428,633	650,000	-2,278,590	1,140,000	-2,768,590	1,630,000	-3,258,590	17.7%
CH2	E	Base	-2,014,552	-1,657,598	-1,628,590	-5,428,633	330,000	-1,958,590	650,000	-2,278,590	980,000	-2,608,590	17.7%