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# DAYLIGHT & SUNLIGHT REPORT

River Gate, 53-55 Vastern Road  
Reading

19<sup>th</sup> December 2019

A photograph of a modern building's facade, showing a curved structure with a grid of glass panels and horizontal wooden slats. The sky is blue with white clouds. The image is partially obscured by a large, dark grey geometric shape on the right side of the page.

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## 1. Introduction

- 1.1. This practice has been instructed to provide an assessment of the daylight and sunlight implications of the proposed development at 53-55 Vastern Road, Reading. This report is based on the proposals presented in December 2019, prepared by Berkeley Homes.
- 1.2. The methodology and criteria used for these assessments is provided by the Building Research Establishments guidance 'Site layout planning for daylight and sunlight: a guide to good practice' (BRE 2011).
- 1.3. The scheme is immediately neighboured by residential properties and the amenity effects upon these neighbours has been a key consideration from an early stage. The height and articulation of the scheme has developed with our input to maximise light levels where possible and ensure that the proposals consider the relevant guidance and planning policy.

## 2. Guidance

### **Daylight & sunlight for planning**

#### **Site layout planning for daylight and sunlight: a guide to good practice, BRE 2011**

- 2.1. This document follows from previous guidance produced by Her Majesty's Stationary Office (HMSO) on daylight and sunlight in the built environment and is now the accepted methodology used by local authorities for assessing daylight and sunlight in relation to new developments. It provides methods for calculating the impact to daylight and sunlight within existing neighbouring buildings and for assessing the provision of amenity provided within new buildings.
- 2.2. The guidance details three methods for calculating daylight; the Vertical Sky Component (VSC), the No-Sky Line Contour (NSC) and the Average Daylight Factor (ADF). The first two assessments are primarily used for the assessment of impact to existing buildings. There are certain circumstances where it is suggested that ADF is considered, as described later in this report. The ADF test is the primary daylight test for considering daylight within the residential elements of the proposal. The assessment of sunlight within both existing and proposed buildings is undertaken using the Annual Probable Sunlight Hours (APSH) test.

#### ***Daylight to existing buildings***

- 2.3. The Vertical Sky Component (VSC) test measures the amount of sky that is visible to a specific point on the outside of a property, usually a window, which is directly related to the amount of daylight that can be received. It is measured on the outside face of the external walls, again usually at the centre point of a window.
- 2.4. The No Sky-Line Contour (NSC) test calculates the distribution of daylight within

rooms by determining the area of the 'working plane' which can and cannot receive a direct view of the sky and hence 'sky light'. The working plane height is set at 850mm above floor level within a residential property and 700mm for non-residential.

- 2.5. For buildings that neighbour a new development, the guidance suggests that daylight will be noticeably affected by the development, if either; its windows achieve a VSC below 27% and have their levels reduced to less than 0.8 times their former value, or the levels of NSC within rooms are reduced to less than 0.8 times their former values.
- 2.6. In certain circumstances the ADF within neighboring buildings may be considered. A description of this test is provided in the next section.

### ***Daylight to new buildings***

- 2.7. The ADF test calculates the average illuminance within a room as a proportion of the illuminance available to an unobstructed point outdoors, under a sky of known luminance and luminance distribution. This is the most detailed of the daylight calculations and considers the physical nature of the rooms and windows, including; window transmittance, window size, room size, angle of external obstruction and room surface reflectivity. Some of the inputs can be accurately quantified (room size, angle of obstruction, window size), but some need to be based upon assumptions as provided in the assumption section of this report.
- 2.8. The guidance suggests that, for new dwellings provided with electric lighting, kitchens should attain at least 2% ADF, living and dining rooms at least 1.5% ADF and bedrooms at least 1% ADF.
- 2.9. The proposal includes a number of combined living / kitchen / dining rooms (L/K/D's). Whilst there is an aspiration for such multi-use rooms to meet the higher 'kitchen' target the spaces are inherently deeper than a standalone space with the kitchen area located at the rear. As such, the living room target of 1.5% has been applied to these rooms.

### ***Sunlight***

- 2.10. For sunlight the APSH test calculates the percentage of statistically probable hours of sunlight received by each window in both the summer and winter months. March 21<sup>st</sup> through to September 21<sup>st</sup> is considered to be the summer period while September 21<sup>st</sup> to March 21<sup>st</sup> is considered the winter period. For properties surrounding a new development only those windows orientated within 90° of due south and which overlook the site of the proposal are relevant for assessment.
- 2.11. The BRE guidelines suggest that the main living rooms within new buildings should achieve at least 25% of annual sunlight hours, with 5% during the winter period. For neighbouring buildings the guide suggests that occupiers will notice the loss of sunlight if the APSH to main living rooms is both less than 25% annually (with 5% during winter) and that the amount of sunlight, following the proposed development, is reduced to less than 0.8 times its former value.

### **Sunlight to gardens and outdoor spaces**

- 2.12. The impact to overshadowing and the provision of well sunlit open spaces is assessed using the Sunlight Amenity test. This looks at the proportion of an amenity area that receives at least 2 hours of sun on the 21<sup>st</sup> of March in the present condition and compares this with the proportion of the area that receives at least 2 hours of sun on the 21<sup>st</sup> of March with the proposal in place.

## **3. Methodology and application**

### **Scope of the assessments**

- 3.1. The BRE guidelines state that when assessing any potential effects on surrounding sensitive receptors, only those windows and rooms that have a 'reasonable expectation' of daylight and sunlight need to be considered. Paragraph 2.2.2 of the guidelines clarifies what are considered sensitive receptors with a 'reasonable expectation' of daylight and sunlight as follows:

*"The guidelines given here are intended for use for rooms in adjoining dwellings where daylight is required, including living rooms, kitchens and bedrooms. Windows to bathrooms, toilets, storerooms, circulation areas and garages need not be analysed."*

- 3.2. Commercial properties are generally not treated as having a reasonable expectation of daylight or sunlight. This is because they are usually designed to rely on electric lighting to provide sufficient light by which to work, rather than natural daylight or sunlight. No further assessment has therefore been carried out in relation to commercial properties in the vicinity of the proposed development.

### **Policy and Guidance Context**

- 3.1 It is important to note that within urban centres achieving good levels of daylight and sunlight in accordance with the BRE guidelines, can be weighed in the balance against other beneficial design factors.

- 3.2 The opening paragraphs of the BRE guidelines state: -

*"The guide is intended for building designers and their clients, consultants and planning officials. The advice given here is not mandatory and the document should not be seen as an instrument of planning policy. Its aim is to help rather than constrain the designer. Although it gives numerical guidelines, these should be interpreted flexibly because natural lighting is only one of many factors in site layout design. In special circumstances the developer or planning authority may wish to use different target values. For example, in a historic city centre a higher degree of obstruction may be unavoidable if new developments are to match the height and proportions of existing buildings".*

- 3.3 The targets set out in the BRE document are very much 'guidelines' and they should be applied sensibly and flexibly based on the site-specific context of development.

**National Planning Policy Framework, 2019**

- 3.3. In regard to daylight and sunlight, paragraph 123(c) the National Planning Policy Framework (NPPF) states:

*“Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make optimal use of the potential of each site. In these circumstances:*

*c) local planning authorities should refuse applications which they consider fail to make efficient use of land, taking into account the policies in this Framework. In this context, when considering applications for housing, authorities should take a flexible approach in applying policies or guidance relating to daylight and sunlight, where they would otherwise inhibit making efficient use of a site (as long as the resulting scheme would provide acceptable living standards).”*

## 4. Assumptions

- 4.1. A measured survey from laser scan , architects drawings/model, site photographs and Ordnance Survey information have been used to create a 3D computer model of the proposed development in the context of the existing site and surrounding buildings.
- 4.2. We have not gained access to any of the surrounding properties. Therefore information on layout and use has been extracted from the local authorities planning portal and estate agents websites where available. Where this is not available details of the internal layouts and floor level heights have been estimated from the external appearance of the building and the locations of windows. Unless known or otherwise appropriate the depths of rooms have been assumed at 4.27m or half the building depth if this is more appropriate.
- 4.3. The following assumptions have been made with regard to ADF:

Internal reflectance of rooms	Existing buildings = 0.5 Newly built & proposed dwellings = based on finishes described below
Window transmittance	Double Glazed = 0.68

- 4.4. The internal daylight levels have been calculated considering the architects specification of light walls, floors and ceilings and as such the following material reflectivities have been used:

- Internal floors: 0.4
- Internal walls: 0.81
- Internal ceilings: 0.85

4.5. The sunlight availability for the internal sunlight assessments has been taken from BRE's Guide Appendix A for London (Reading latitude: 51.4 degrees).

## 5. Sources of Information

### Measured Survey

33440Asit01P00-3D.dwg

Received 29/01/2019

### Berkeley / Realm

Vastern\_Master\_03.max

Received 04/12/2019

#### Block A

Ground – Third Floor

Fourth – Fifth Floor

Elevations

First Floor Plan

Second Floor Plan

Third Floor Plan

Fourth Floor Plan

Fifth Floor Plan

Sixth Floor Plan

Seventh Floor Plan

Eighth Floor Plan

Ninth Floor Plan

Elevations

#### Block B and C

Ground Floor Plan

First Floor Plan

Second Floor Plan

Third Floor Plan

Fourth Floor Plan

Fifth Floor Plan

Sixth Floor Plan

Seventh Floor Plan

Eighth Floor Plan

Ninth Floor Plan

Tenth Floor Plan

Elevations

#### Block E, F and G

Ground Floor Plan

First Floor Plan

Second Floor Plan

Third Floor Plan

Fourth Floor Plan

Fifth Floor Plan

Elevations

#### Block D

Ground Floor Plan

Received 11/12/2019

### EB7 Ltd

OS Map

Site Photographs

## 6. The Site and Proposal

- 6.1. The site is situated on the northern side of Vastern Road, Reading. The site is currently made up of a part two, part three storey building and a ground level car park.
- 6.2. The proposal is for demolition of the existing buildings and the construction of residential led scheme comprised of between 2 to 11 storeys in height, together with ancillary facilities and parking.
- 6.3. Situated to the north / north west of the site are residential properties have therefore been considered for assessment in line with the BRE criteria.
- 6.4. Drawings of the existing site, proposed scheme and neighbouring receptors can be found within appendix 1.

#### **Considered Design Response**

- 6.5. The scheme has developed with eb7s input from an early stage in order to respond to its context and minimise potential effects to neighbours.
- 6.6. The initial scheme proposals caused a high level of impact to the daylight / sunlight levels to the neighbouring residential properties, in particular the rear elevations / gardens of those properties along Lynmouth Road.
- 6.7. The proposal massing has been cutback and shaped to minimise the extent of adverse impacts where possible. The refinement of the scheme includes Stepping down to the residential properties on Lynmouth Road and Lynmouth Court.
- 6.8. It should be noted that with the site currently being low-rise, with much of it being a ground levels car park, there will inevitably be reductions in daylight beyond the suggestions of the BRE guidelines.
- 6.9. The BRE guidelines and NPPF provide that a degree of flexibility should be applied when intensifying land use in a changing urban context and in order to maximise housing delivery. The site is situated in an urban location, with new transport links being established in close proximity to the site. It should also be noted that existing levels are unusually high currently as much of the site is currently flat. This can lead to reasonable levels of development resulting in high proportional reductions in daylight. The residual effects of the proposal in terms of reductions in daylight to the neighbours and retained levels of daylight are considered acceptable for this context and are in line with flexibility suggested in the BRE guidelines and the NPPF.

## 7. Daylight and sunlight results

- 7.1. Full results of the daylight and sunlight assessments are attached within appendix 2.
- 7.2. The following properties have been considered within our assessments:
  - 2 – 28 Lynmouth Road (even numbers only)
  - 5 Lynmouth Court
  - 6 Lynmouth Court



- 7-12 Lynmouth Court
- 51 Vastern Road

## 2-28 (evens) Lynmouth Road

7.3. This residential row of terraced houses is found to the immediately to the west of the proposed site. These terraced houses consist of two storeys, with some having an additional storey comprised of loft conversions. All of these properties have windows in their rear facades which have a view over the site, with the majority of them enjoying an unobstructed view over an open car park. Whilst these properties are broadly similar in layout and outlook, the results have been described separately below.



*Photograph 1: Oblique aerial of the rears of 2-28 (Evens) Lynmouth Road*

## 2 Lynmouth Road

### Daylight

- 7.4. The results of the VSC assessment have shown that the windows facing the site would experience deviations from the BRE targets.
- 7.5. Of these windows, 3 are situated at ground floor, beneath a temporary roof structure. The effects of the overhang cause the windows to be constrained in outlook and therefore particularly sensitive to change. The constrained outlook is confirmed by the low VSC levels in the existing scenario, being between 0.5-2.4% VSC. With the proposed development in place, these windows would experience a further reduction; however, given the low existing levels, the percentage reductions are disproportionate to the actual change. The results show that the actual change in daylight to these rooms would equate to between 0.4 – 1.2% VSC which is very low in real terms and therefore unlikely to be material.
- 7.6. The remaining windows at ground floor appear to serve a dual aspect room, with the primary windows facing south east on the rear addition element. In addition, the

windows at first floor appear to serve 2 single aspect rooms. As mentioned above, the primary windows currently enjoy a relatively unobstructed outlook under the existing scenario and this is confirmed by the high VSC levels. With the proposal in place, these properties would experience a reduction in VSC from the former levels, however the retained VSC levels are good, with levels of at least c.21% VSC which is generally considered acceptable for an urban context.

- 7.7. The results of the NSC analysis have shown that 2 of the 5 windows assessed would experience no noticeable change in NSC levels. Of the remaining rooms, 2 are situated beneath the ground floor overhang and as such, disproportionately sensitive to change. The remaining room is situated at first floor within the rear addition and is likely to be a bedroom. As mentioned above, this room enjoys an open outlook under the existing scenario and as such, the proportionate change is not unusual.
- 7.8. The BRE guidelines allows a degree of flexibility in respect of the targets and given the underutilised existing scenario, the retained levels should be considered acceptable.

#### Sunlight

- 7.9. The results of the APSH assessment have shown 2 of the 5 rooms assessed would experience no noticeable change in APSH levels.
- 7.10. The remaining three rooms all show total APSH levels well in excess of the total APSH target, with winter sun levels just below the targets. Deviations in regard to winter sun levels are not unusual in an urban environment and given the high total levels of sunlight, the results should be considered in line with the overall intentions of the BRE guidelines.

#### **4 Lynmouth Road**

#### Daylight

- 7.11. The results of the VSC assessment have shown that 5 of the 6 windows assessed would experience no noticeable change in VSC levels. The remaining window is situated in a dual aspect kitchen and would experience a reduction of 22.6%, marginally above the BRE target of 20%.
- 7.12. The results of the NSC analysis have shown no noticeable change to the no sky line contour.
- 7.13. Given the minor nature of the deviation to a single window, coupled with full compliance with the NSC analysis, the results should be considered to be in line with the BRE criteria.

#### Sunlight

- 7.14. The results of the APSH assessment have shown 2 of the 5 rooms assessed would experience no noticeable change in APSH levels.
- 7.15. The remaining three rooms all show total APSH levels well in excess of the total APSH target, with winter sun levels just below the targets. Given the isolated deviations to

the winter sun hours, with full compliance for total sunlight levels, the results should be considered in line with the overall intentions of the BRE guidelines.

## **6 Lynmouth Road**

### Daylight

- 7.16. The results of the VSC assessment have shown that 2 of the 5 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines. The remaining 3 windows are situated at ground floor and would experience marginal deviations from the BRE targets. The results show reductions of between 21.5 – 23.1% (compared with the target of 20%).
- 7.17. The results of the NSC analysis have shown 3 of the 4 rooms would experience no noticeable change in daylight levels. The remaining room is situated on the first floor, and would experience a minor reduction, being c.26% (compared with the target of 20%).
- 7.18. Given the minor nature of the deviations from the BRE targets, coupled with the low rise nature of the site at present, the results should be considered to in line with the BRE criteria.

### Sunlight

- 7.19. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

## **8 Lynmouth Road**

### Daylight

- 7.20. The results of the VSC assessment have shown that 10 of the 12 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines. The remaining 2 windows are situated at ground floor and would experience marginal deviations from the BRE targets. The results show reductions between 22.9 and 26.3%, however both windows are situated in rooms served by windows with no noticeable reduction in daylight levels.
- 7.21. The high amenity levels within the room is also confirmed by the NSC analysis showing no noticeable change in the no sky line. Given the marginal nature of the VSC deviations, the results should be considered acceptable in line.

### Sunlight

- 7.22. The results of the APSH assessment have shown 2 of the 4 rooms assessed would experience no noticeable change in APSH levels.
- 7.23. The remaining 2 rooms both show total APSH levels well in excess of the total APSH target, with winter sun levels just below the targets. Deviations in regard to winter sun levels are not unusual and given the marginal nature of the deviations, the results should be considered in line with the overall intentions of the BRE guidelines.

## **10 Lynmouth Road**

#### Daylight

7.24. The results of the VSC assessment have shown that 6 of the 11 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines. The remaining 5 windows all serve the ground floor kitchen and show reductions between 22.7-25.9% (compared with the target of 20%). Whilst these windows experience a minor reduction in VSC levels, the retained levels are high being on or in excess of 25% VSC, which is 2% below the absolute target for a suburban context of 27%. Given the marginal nature of the deviations from the BRE targets, together with the underutilised nature of the existing site, the results should be considered in line with the overall intentions of the BRE criteria.

7.25. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

7.26. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **12 Lynmouth Road**

#### Daylight

7.27. The results of the VSC assessment have shown that 8 of the 9 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines.

7.28. The remaining window is situated on the ground floor and the results have shown a reduction of 26.5% (compared with the target of 20%). Whilst this window would experience a minor reduction in VSC levels, the retained VSC value remain high, being 25.9% VSC, which is c.1% below the absolute target of 27%. Given the marginal nature of the deviations from the BRE targets, the results should be considered in line with the overall intentions of the BRE criteria.

7.29. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

7.30. The results of the APSH assessment have shown 2 of the 4 rooms assessed would experience no noticeable change in APSH levels.

7.31. The remaining 2 rooms both show total APSH levels well in excess of the total APSH target, with winter sun levels just below the targets. Deviations in regard to winter sun levels are not unusual in urban environments as the sun sits lower in the sky. Given the marginal nature of the deviations to the winter sun levels, coupled with the full compliance with the total APSH levels, the results should be considered in line with the overall intentions of the BRE guidelines.

### **14 Lynmouth Road**

#### Daylight

- 7.32. The results of the VSC assessment have shown that 3 of the 5 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines.
- 7.33. The remaining 2 windows are situated at ground floor and are particularly sensitive to change due to the high VSC levels under the existing position. Whilst these windows experience a reduction VSC level, the retained levels are high being 26.1% VSC, which is c.1% below the absolute target for a suburban context of 27%. Given the marginal nature of the deviation from the absolute VSC target, the results should be considered a technical deviation and in line with the overall intentions of the BRE criteria.
- 7.34. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

- 7.35. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **16 Lynmouth Road**

#### Daylight

- 7.36. The results of the VSC assessment have shown that 6 of the 8 windows assessment would experience no noticeable change in VSC levels and are therefore compliant with the BRE targets. The remaining two windows are situated at ground floor and are in rooms served by multiple windows.
- 7.37. Of these windows, W1 serves a kitchen, and whilst the reductions are below the suggested targets, the retained VSC levels are high. The results show retained VSC levels of 25.8%, being just below the absolute VSC target for a suburban context of 27%.
- 7.38. The remaining windows is W4 which is a secondary window serving the living room. The results show a marginal reduction from the BRE targets, being 22.1% (compared with the target of 20%). Given the marginal deviations from the BRE targets, the results should be considered in line with the overall intentions of the BRE criteria.
- 7.39. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

- 7.40. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **18 Lynmouth Road**

#### Daylight

- 7.41. The results of the VSC assessment have shown that 4 of the 7 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE targets. The remaining 3 remaining windows are situated at ground floor.
- 7.42. Of these windows, W1 would see a marginal reduction from the BRE targets, being 20.6% (compared with the target of 20%).
- 7.43. The remaining 2 windows can be identified as W4 and W5. Whilst the reductions are below the suggested targets, the retained VSC levels remain high with the proposed development in place. The results show retained VSC levels of at least 25.4%, being just below the absolute VSC target for a suburban context of 27%.
- 7.44. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

- 7.45. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **20 Lynmouth Road**

#### Daylight

- 7.46. The results of the VSC assessment have shown that 5 of the 9 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines.
- 7.47. The remaining 4 windows all serve the ground floor kitchen and show reductions between 24.9-26.9% (compared with the target of 20%). Whilst these windows experience reductions in VSC levels, the retained levels remain high being on or at least 24.7% VSC (compared with the absolute target of 27%). In addition, these windows are secondary windows serving a room lit by multiple windows, with the primary windows seeing no noticeable reduction in VSC levels. Given the marginal nature of the deviations from the BRE targets, the results should be considered in line with the overall intentions of the BRE criteria.
- 7.48. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

- 7.49. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **22 Lynmouth Road**

#### Daylight

- 7.50. The results of the VSC assessment have shown that 6 of the 7 windows assessed

would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines.

7.51. The remaining window is situated on the ground floor and would experience a minor reduction in VSC levels, being 26.3%. Whilst this window would experience a reduction VSC levels, the retained level is high, being 25.9% VSC, which is c.1% below the absolute target of 27%. Given the marginal nature of the deviations from the BRE targets, the results should be considered in line with the overall intentions of the BRE criteria.

7.52. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

7.53. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **24 Lynmouth Road**

#### Daylight

7.54. The results of the VSC assessment have shown that 4 of the 6 windows facing the site would experience no noticeable change in reductions beyond the BRE targets.

7.55. These windows are situated at ground floor beneath an overhanging awning. The effects of the overhang cause the windows to be constrained in outlook and therefore particularly sensitive to change. The constrained outlook is confirmed by the low VSC levels under the existing scenario being between 1.2-4.8% VSC. With the proposed development in place, these windows would experience a high proportional reduction; however, these reductions are disproportionate to the actual change. The results show that the actual change in daylight to these rooms would equate to between 0.8 – 2.7% VSC which is small and therefore unlikely to be material. Therefore the effects should be considered in line with the overall intentions of the BRE criteria.

7.56. The results of the NSC analysis have shown that 3 of the 5 rooms assessed would experience no noticeable change in NSC levels. Of the remaining rooms, 1 is situated beneath the overhang and as such, sensitive to change. The remaining room is situated at first floor within the rear addition. This room (likely to be a bedroom) enjoys an open outlook under the existing scenario and as such, the proportionate change is not unusual. Given the isolated nature of the effects to a particularly sensitive property, the results should be considered acceptable.

#### Sunlight

7.57. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **26 Lynmouth Road**

#### Daylight

- 7.58. The results of the VSC assessment have shown that 4 of the 8 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE guidelines.
- 7.59. Of the remaining 4 windows, 2 are situated on the ground floor and 2 are situated on the first floor and serve multiple window rooms. Whilst these windows experience a reduction in VSC levels, the retained levels are high being at least 24% VSC, which is just below the absolute target for a suburban context of 27%. Given the marginal nature of the deviations from the BRE targets, the results should be considered in line with the overall intentions of the BRE criteria.
- 7.60. The results of the NSC analysis have shown 5 of the 6 rooms would experience no noticeable change in daylight levels. The remaining room is situated on the first floor, and would experience a minor reduction, being c.26% (compared with the target of 20%).
- 7.61. Given the minor nature of the deviations, the results should be considered in line with the overall intentions of the BRE guidelines.

#### Sunlight

- 7.62. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **28 Lynmouth Road**

#### Daylight

- 7.63. The results of the VSC assessment have shown with the proposal in place, all windows within this property would experience a noticeable reduction in the VSC levels.
- 7.64. Of these windows, 6 show reductions of between 21.6 - 28.4% which is marginally above the suggested target of 20%.
- 7.65. The remaining 2 windows are situated on the first floor and would experience a reduction in VSC levels. The retained levels for these rooms remain high, with results on or in excess of 26.1%. Given the marginal nature of the deviations from the BRE targets, the results should be considered in line with the overall intentions of the BRE criteria.
- 7.66. The results of the NSC analysis have shown 2 of the 6 rooms would experience no noticeable change in daylight levels. The remaining rooms are situated on the ground and first floor, and would experience a minor reduction, being c.26% (compared with the target of 20%).
- 7.67. Given the minor nature of the deviations, the results should be considered in line with the overall intentions of the BRE guidelines.

#### Sunlight

- 7.68. The results of the APSH assessment have shown all rooms potentially relevant for



assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **5 Lynmouth Court**

7.69. This residential dwelling is located to the north west of the site. This 3 storey property enjoys an oblique view over the northern part of the proposed site. It has a number of apertures in its front façade and so has been considered relevant for assessment.

Daylight

7.70. The results of the VSC and NSC assessments have shown no noticeable change to daylight levels. The results therefore confirm full compliance with the BRE targets.

Sunlight

7.71. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **6 Lynmouth Court**

7.72. This residential dwelling is located to the north west of the site. This 3 storey property enjoys an oblique view over the northern part of the proposed site. It has a number of apertures in its front façade and so has been considered relevant for assessment.

Daylight

7.73. The results of the VSC assessment have shown that 4 of the 5 windows assessed would experience no noticeable change in VSC levels and are therefore compliant with the BRE targets. The remaining window can be identified as W2 on the ground floor.

7.74. The results show a minor reduction from the BRE targets, being 27.7% (compared with the target of 20%). Whilst the results show a reduction in VSC levels, the retained VSC level for this window remains high, with the VSC of 25.8% VSC. These levels are marginally below the absolute target for a suburban context of 27%. Given the isolated and technical nature of the deviation, the results should be considered in line with the overall intentions of the BRE criteria.

7.75. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

Sunlight

7.76. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **7-12 Lynmouth Court**

7.77. This three storey property is located to the west of the proposal, and is comprised of six residential flats. The property benefits from windows in its rear façade, which currently have a view over the flat car park at the north of the site.

## Daylight

- 7.78. The rear elevation of this block of flats has been assessed and the results of the VSC assessment have shown that 4 of the 19 windows assessed would experience no noticeable change in VSC levels.
- 7.79. Of the remaining windows, 8 are situated on the ground and first floor and would experience reductions between 30.1-39.5%. Whilst the percentage reduction for these windows deviate from the BRE targets, the absolute retained VSC levels for these windows are at least c.19.6% which is considered reasonable for an urban context. These properties enjoy an open outlook over an underutilised site and therefore, currently enjoy an unusually high level of daylight at present leading to a relatively high proportional change.
- 7.80. The windows for the second floor are particularly sensitive as a number are constrained by deep overhanging eaves which effectively obstruct the sky view of sky from above. The results for single aspect windows show retained VSC levels of 18.4% VSC which is largely driven by the overhanging eaves. There is one dual aspect room served by two bay windows. The primary window in the bay facing away from the site would not see a noticeable change and would mitigate losses on the site facing façade.
- 7.81. The results of the NSC assessment have shown that 3 of the 12 rooms assessed would experience no noticeable change in NSC levels. The remaining rooms would see reductions beyond the BRE targets, with reduction between c.33.7-50.7%. As mentioned above, these properties enjoy an open outlook over an underutilised site and as such, the relatively high proportional reduction reflects the change from high existing level.

## Sunlight

- 7.82. The results of the APSH assessment have shown 11 of the 12 rooms assessed would experience no noticeable change in APSH levels.
- 7.83. The remaining room is situated on the ground floor and with the proposal in place, total APSH levels are 32%, being well above the target of 25%. The results of the winter APSH levels are reduced; however these results are not unusual for the winter months due to the position of the sun in sky. Given the high total APSH levels, together with the isolated deviations to a single room, the results should be considered in line with the BRE criteria.

## **51 Vastern Road**

- 7.84. This property is situated to the west of the southern part of the proposed site, on the corner of Vastern Road and Lynmouth Road. This residential building is comprised of two storeys plus a roof extension. The property enjoys an oblique view of the site, through windows in its rear façade and a direct view of the site through a number of windows on its flank elevation.

## Daylight

- 7.85. The results of the VSC assessment have shown that 15 of the 21 windows would experience no noticeable reduction in VSC levels and are therefore fully compliant

with the BRE targets.

7.86. The remaining 6 windows are situated within the flank elevation, with a direct view towards the proposal. These windows serve dual aspect rooms, with the primary windows showing no noticeable change in VSC levels. The BRE guidelines provides that where a room is served by multiple windows, the mean value of the VSC levels may be taken. The mean VSC values show full compliance with BRE criteria.

7.87. In addition, the results of the NSC analysis have shown no noticeable change to the no sky line contour and are therefore fully compliant with the BRE targets.

#### Sunlight

7.88. The results of the APSH assessment have shown all rooms potentially relevant for assessment would experience sunlight levels in line with the BRE targets. The results therefore confirm full compliance with the BRE guidelines.

### **Daylight and sunlight within the proposed accommodation**

7.89. Full results of the internal daylight and sunlight assessment are attached within appendix 3. Drawings showing the layouts of the proposed accommodation with window and room labels are also attached within appendix 3.

7.90. In relation to internal daylight and sunlight, the relevant assessments are Average Daylight Factor (ADF) and Annual Probable Sunlight Hours (APSH) respectively.

7.91. Tables 1 and 2, below, summarise the daylight and sunlight results within the proposed residential units.

**Table 1: Daylight within the Proposed Development (ADF)**

Room use	Total number of rooms relevant for daylight assessment	Total number of rooms which meet the ADF criteria	Percentage compliance
Living/Kitchen /Dining	63	51	81%
Bedrooms	108	108	100%
<b>Total</b>	<b>171</b>	<b>159</b>	<b>93%</b>

7.92. The results in the proposed scenario show that 159 (93%) of the 171 rooms meet or exceed the BRE's recommendations for ADF.

7.93. The remaining 12 rooms are L/K/D's. Of these rooms, 5 rooms show ADF levels within 0.3% ADF of the suggested target. Whilst these rooms show deviations, as the results are only just below the suggested the targets, they should be considered in line with the overall intentions of the BRE criteria.

7.94. The remaining 7 L/K/D's see ADF levels between 0.3-1.0% ADF. These rooms are situated lowest levels, with windows constrained by overhanging balconies and / or situated in close proximity to the development massing.

- 7.95. The results show that 6 of these remaining 7 rooms which show deviations have windows situated beneath balconies. Balconies provide a private external amenity space to the occupier, however directly limit daylight potential to the rooms set beneath. As there is a trade-off between the use and enjoyment of balconies, with the daylight amenity to the room situated beneath this should be considered when applying the BRE criteria.
- 7.96. The remaining room is situated in Blocks BC and can be identified as BC-51 within the plot drawings in appendix 3. This room is situated in a corner location and as such limited in outlook. Whilst the living / kitchen / diner indicates daylight levels below the BRE target, the bedroom within this unit shows high levels of daylight amenity, well in excess of the BRE target. Given the isolated nature of the deviation, with high levels of amenity overall, the results should be considered in line with overall intentions of the BRE criteria.

**Table 2: Sunlight within the Proposed Development (APSH) – L/K/D’s and Living rooms only**

Room use	Total number of rooms assessed	Total number of rooms which meet the APSH criteria	Percentage compliance
L/K/D and Living Rooms	35	31	89%

7.97. Of the 35 south facing living spaces in the proposal, 31 (89%) show compliance by reference to the APSH methodology suggested within the BRE guidance.

7.98. The remaining rooms are those with primary windows orientated principally towards the west and east. The potential for good sunlight to the east or west facing windows is lower than that for directly south facing windows. Given the orientation and location of the scheme, deviations are not unusual. As noted above however the direct sunlight levels are typical of an urban location with the scheme providing a good level of daylight amenity and high quality design.

### **Overshadowing within the surrounding amenity areas**

7.99. The proposal has been tested in regard to the overshadowing effects and the results of this assessment are appended at appendix 4.

7.100. The results with the current proposal have shown that 17 of the 21 surrounding amenity areas would experience levels of direct sunlight wholly in line with BRE criteria.

7.101. Of the remaining areas, two areas would experience levels close to the BRE targets. The results show that area 4 would experience a reduction in sunlight levels marginally below the suggested target, with the reduction equating to c.21% (compared with the target of 20%). In addition, area 17 shows retained sunlight levels of c.43% with the proposal in place, being just below the suggested target of 50%. This effect is driven by a row of existing single storey garages that sit to the south of this space. In real terms, there would be a brief reduction in direct sunlight in the mornings as a result of the proposal. As these levels are only just above targets, these results should be considered in line with the overall intentions of the BRE guidelines.

7.102. The remaining 2 areas are rear gardens serving 2 and 4 Lynmouth Road. These areas are particularly constrained due to their proximity to the site and the fences surrounding the areas. Due to their location in relation to the proposal it is inevitable that there will be a noticeable loss in sunlight to these gardens as a result of a scheme coming forward on the site. Block A, which sits to the south of these gardens has been cutback significantly to maximise the direct sunlight to these properties. As a result, these spaces will see a good level of direct sunlight during the summer months with the only additional shadow as a result of the proposal on the 21<sup>st</sup> of June occurring early in the morning and between 2pm and 3pm as demonstrated in the

transient shadow analysis (appendix 5).

- 7.103. The BRE guidelines provides a degree of flexibility to be applied where other factors are to be considered. Given the constrained nature of these amenity spaces and the efforts that have been made to maximise their direct sunlight, the results should be considered acceptable.

### **Overshadowing within the proposed amenity areas**

- 7.104. The proposal includes area of landscaping which may be used as amenity. As such, these areas have been assessed under the BRE criteria. These areas have been considered 9 areas and the detailed results of this assessment can be found at appendix 4.
- 7.105. The results show that all areas demonstrate compliance with the BRE criteria, with at least c.63% of each space achieving 2 hours or more of direct sunlight on the 21<sup>st</sup> of March.
- 7.106. The proposal therefore confirms full compliance with the BRE criteria.

### **Transient overshadowing within the surrounding amenity areas**

- 7.107. In addition to the sun on the ground assessment, an additional transient shadow study has been undertaken and the results are also appended at appendix 4.
- 7.108. The transient shadow study shows the shadow path across 3 key dates of the year being 21<sup>st</sup> March (spring equinox), 21<sup>st</sup> June (summer solstice) and 21<sup>st</sup> December (winter solstice).

#### ***21<sup>st</sup> March***

- 7.109. As would be expected with an increase in massing, the proposal would cause additional shadowing to the rear gardens of the properties along Lynmouth Road, Lynmouth Court and Vastern Road. For the majority of these spaces there would be not see additional shadow beyond 10am. The exception are the gardens at the southern end of Lynmouth Road which see additional shadow throughout the day at this time of year.
- 7.110. With regard to the River Thames, there is degree of shading to the southern element of the river, however the shadow will move throughout the day and of course is broken up by the gaps between the buildings on the river front.

#### ***21<sup>st</sup> June***

- 7.111. Additional assessments for 21<sup>st</sup> June (when shadows case would be at their shortest) has been undertaken. At this time of year, the shadow is significantly reduced. The shadow path shows minimal additional overshadowing to the gardens at the southern end of Lynmouth Road. This is as a result of the amendments made to block A during the design process.

#### ***21<sup>st</sup> December***

- 7.112. The shadows cast on the 21<sup>st</sup> of December are longer and as such effect a larger

area. The results show larger shadows, however the shadow is broken up by the gaps between the blocks.

## 8. Conclusions

- 8.1. This report considers the daylight and sunlight effects of the revised proposal for the Vastern Road, Reading. The assessment has been undertaken using the VSC, NSC, ADF and APSH tests set out within the BRE guidance 'Site layout planning for daylight and sunlight: a guide to good practice' (BRE, 2011).
- 8.2. Daylight design has been a key consideration throughout the design evolution of the proposal. The tallest elements of the scheme are situated to the north and south of the site, where it is largely offset from residential windows. In addition, Block A, situated to the south along Vastern Road has been designed include a lower element to allow light penetration to the neighbouring windows and amenity spaces.
- 8.3. The results of the daylight / sunlight assessment have shown that the proposal causes minor reductions in daylight to the surrounding residential properties. In the existing scenario these properties have a view over an open car park and low rise buildings which cause these properties to experience unusually high light levels for this urban context. With the proposal in place, these properties would experience deviations, however the retained levels remain in line with those expected for this context. As such, the results should be considered in line with the overall intentions of the BRE criteria.
- 8.4. In regard to internal amenity results, the results show high levels of internal daylight, with 93% of rooms achieving ADF levels in line with the targets. The results show a small number of deviations from the suggested targets, however these are largely driven by the overhanging balconies / design constraints. In addition, the results of the APSH analysis have shown the vast majority of south facing living rooms would achieve sunlight levels in line with the BRE criteria. The results show a small number of deviations however these are to be expected in a multi block scheme.
- 8.5. In addition, the results of the sunlight amenity (overshadowing) studies indicate a small number of isolated deviations from the BRE targets. These deviations are to particularly constrained amenity spaces which are therefore sensitive to change. The results of the transient overshadowing study show that the proposal has little effect on these spaces in the summer month when the gardens would be most used.
- 8.6. Finally, the results of the sunlight amenity (overshadowing) within the proposal have shown full compliance with the BRE criteria.
- 8.7. Overall the scheme has been designed to respond to its context with effects to the neighbouring residential spaces being limited where possible, together with delivering high levels of amenity within the scheme. Whilst the proposal presents deviations in respect of the neighbouring daylight / sunlight amenity, the BRE guidelines does allow a degree of flexibility where other factors should be considered. The Site is comprised of a car park and relatively low rise building use.

This existing context causes the properties to enjoy high amenity levels under the existing scenario and this should be considered proportional change as described in the BRE criteria. Given this context, the results should be considered in line with the overall intentions of the BRE criteria.





# Appendix 1

**Drawings of the existing scenario, proposed scenario and surrounding properties**

Sources of information

**Survey**  
33440Asit01P00-3D.dwg  
Received 29/01/2019

**Berkeley Homes Ltd**  
448.SK.001\_ AODs update.pdf  
Received 05/12/2019  
Vastern\_Master\_03\_CAD.max  
Vastern\_Master\_03a\_geometry.max  
Received 04/12/2019

**EB7 Ltd**  
Site Photographs  
Ordnance Survey



Key:

- Existing
- Proposed

NORTH



Project River Gate, Vastern Road  
Reading  
RG1 8BU

Title Existing Condition  
Plan View

Drawn AD Checked --

Date 10/12/2019 Project 3591

Rel no. 05 Prefix DS01 Page no. 01

Sources of information

**Survey**  
 33440Asit01P00-3D.dwg  
 Received 29/01/2019

**Berkeley Homes Ltd**  
 448.SK.001\_ AODs update.pdf  
 Received 05/12/2019  
 Vastern\_Master\_03\_CAD.max  
 Vastern\_Master\_03a\_geometry.max  
 Received 04/12/2019

**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



Key:

- Existing
- Proposed

Notes:  
 All heights and dimensions are in AOD

Project River Gate, Vastern Road  
 Reading  
 RG1 8BU

Title Existing Condition  
 3D View

Drawn AD Checked --

Date 10/12/2019 Project 3591

Rel no. 05 Prefix DS01 Page no. 02

Sources of information

**Survey**  
33440Asit01P00-3D.dwg  
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448.SK.001\_ AODs update.pdf  
Received 05/12/2019  
Vastern\_Master\_03\_CAD.max  
Vastern\_Master\_03a\_geometry.max  
Received 04/12/2019

**EB7 Ltd**  
Site Photographs  
Ordnance Survey



Key:

Existing

Proposed

NORTH



Project River Gate, Vastern Road  
Reading  
RG1 8BU

Title Proposed Development  
Plan View

Drawn AD Checked --

Date 10/12/2019 Project 3591

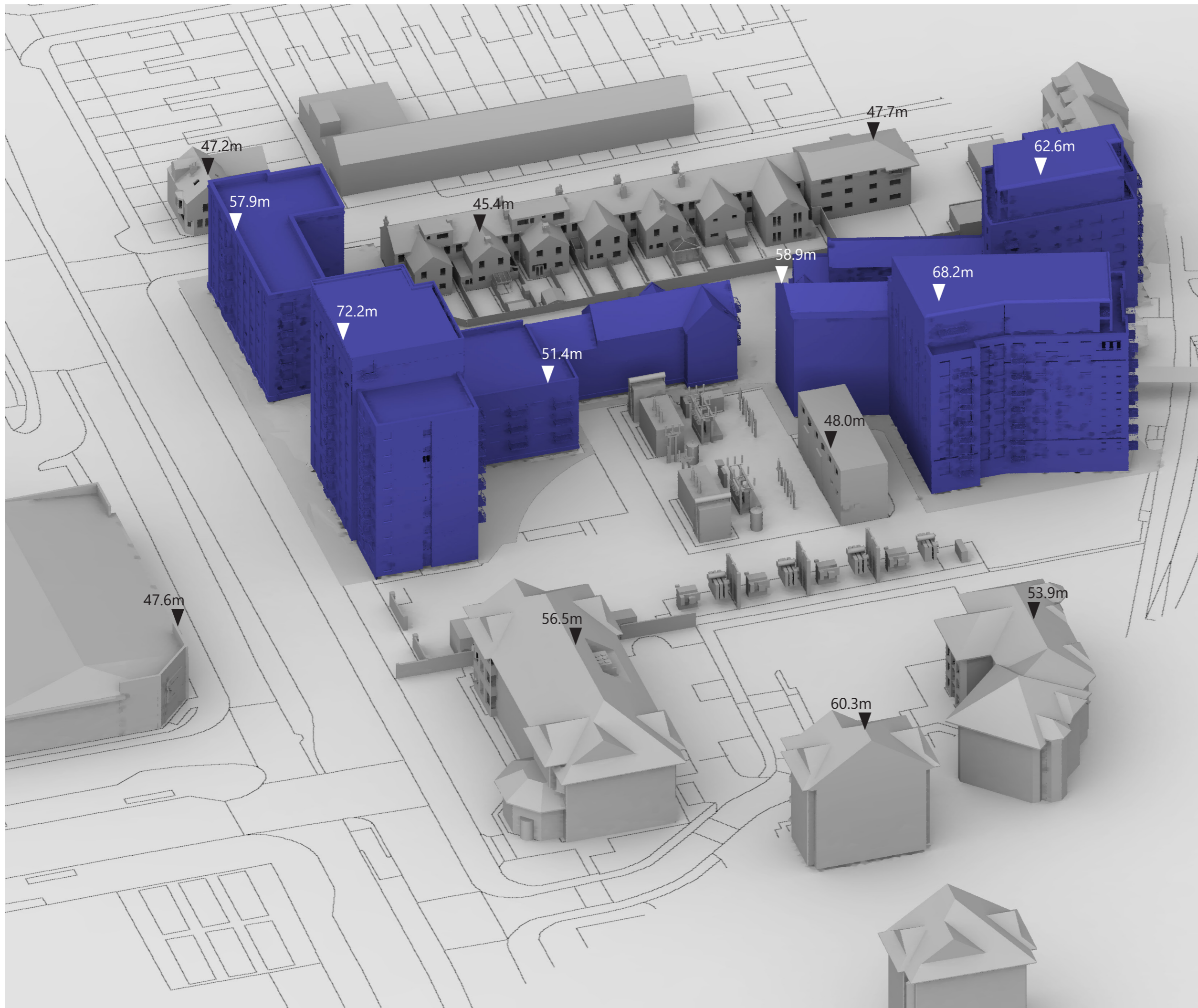
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Sources of information

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 Vastern\_Master\_03a\_geometry.max  
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**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



Key:

- Existing
- Proposed

Notes:  
 All heights and dimensions are in AOD

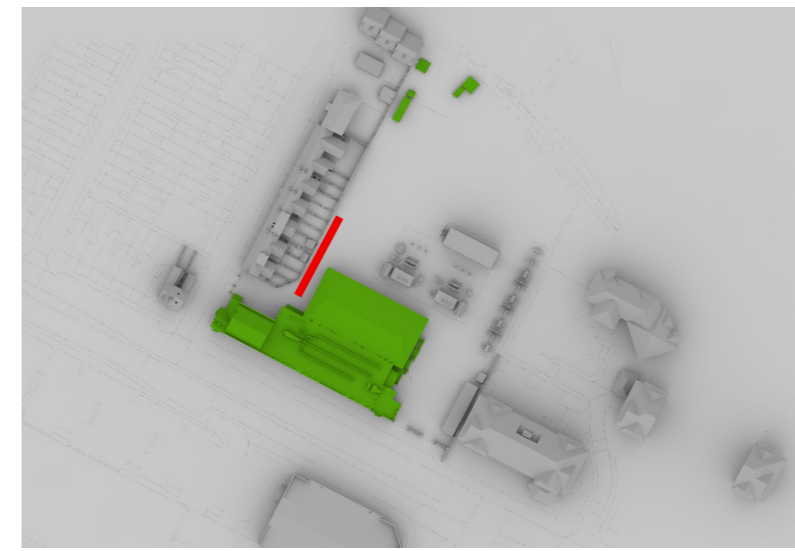
Project River Gate, Vastern Road  
 Reading  
 RG1 8BU

Title Proposed Development  
 3D View

Drawn AD Checked --

Date 10/12/2019 Project 3591

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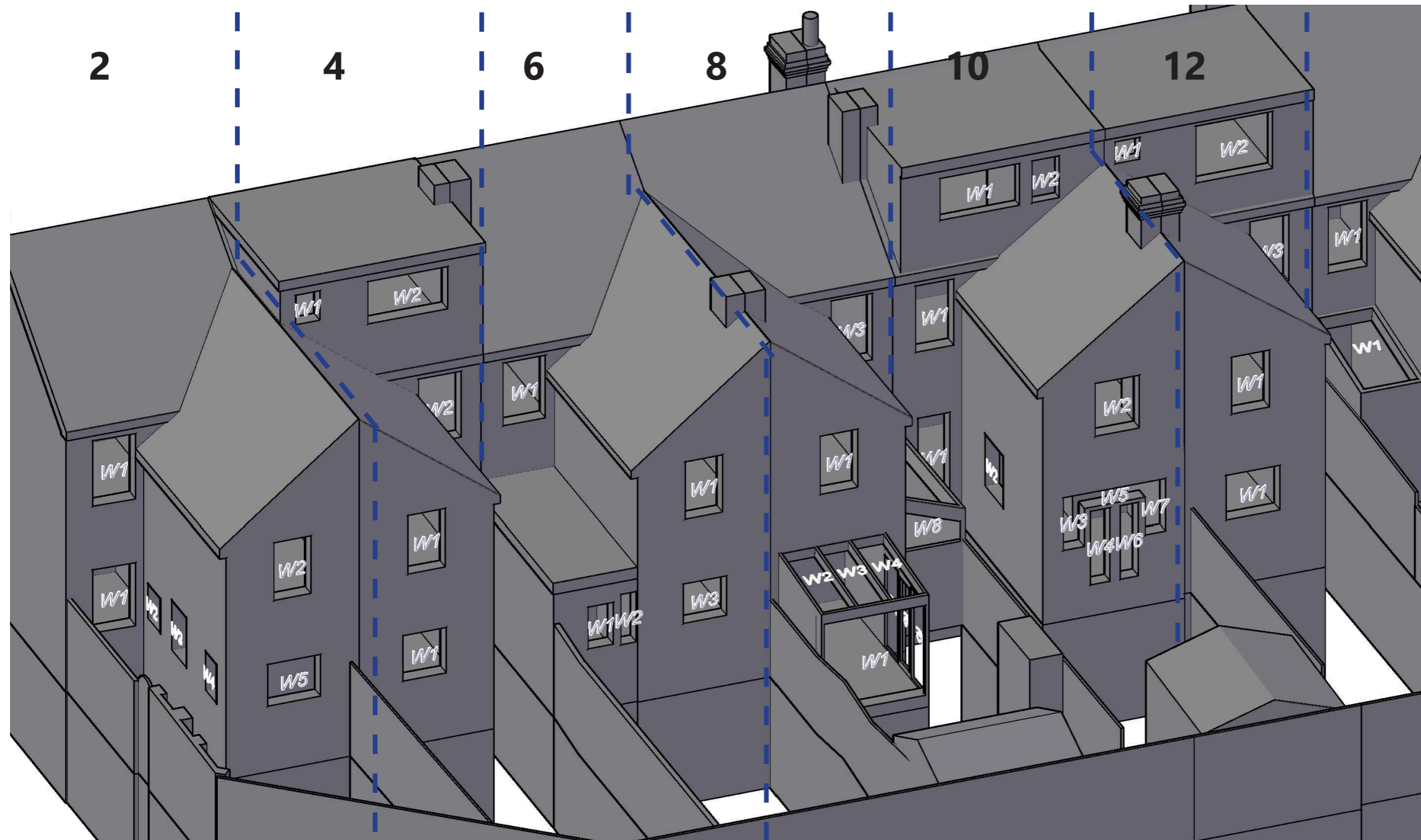


Sources of information

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 Received 29/01/2019

**Berkeley Homes Ltd**  
 33440-190121-A-99-Vastern Road-3D View.  
 dwg  
 Received 21/01/2019

**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



Project River Gate, Vastern Road  
 Reading  
 RG1 8BU

Title 2-12 Lynmouth road  
 Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

Rel no. 01 Prefix DS01 Page no. WM01

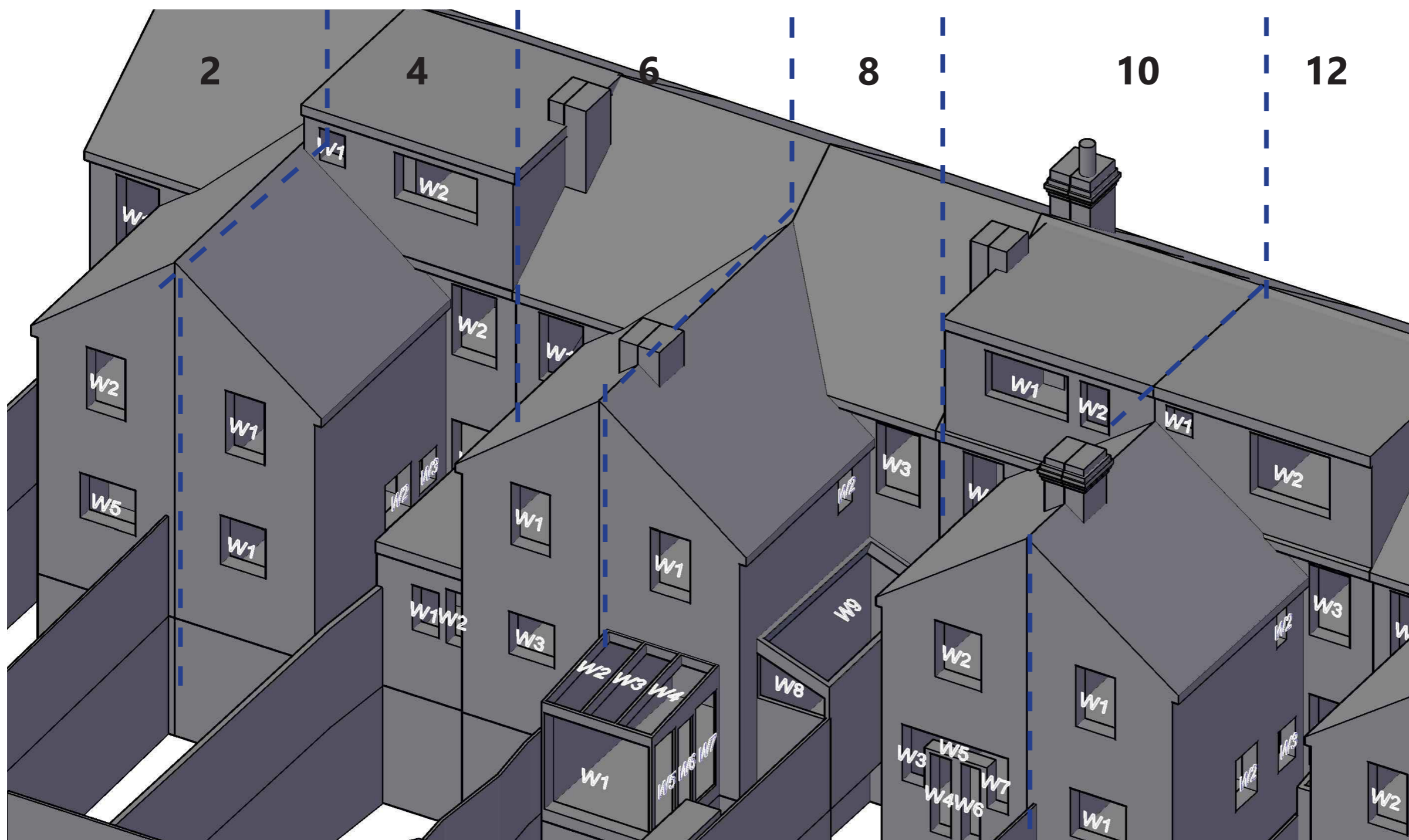


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 Received 21/01/2019

**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



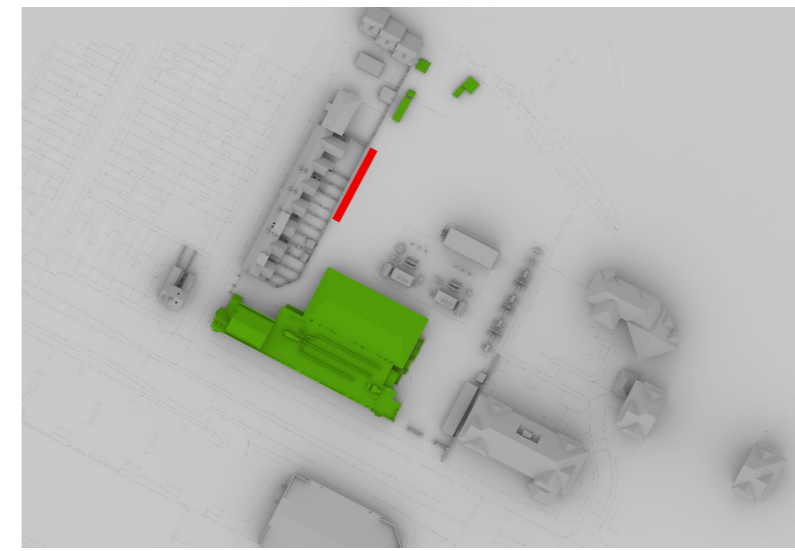
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 Reading  
 RG1 8BU

Title 2-12 Lynmouth road  
 Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

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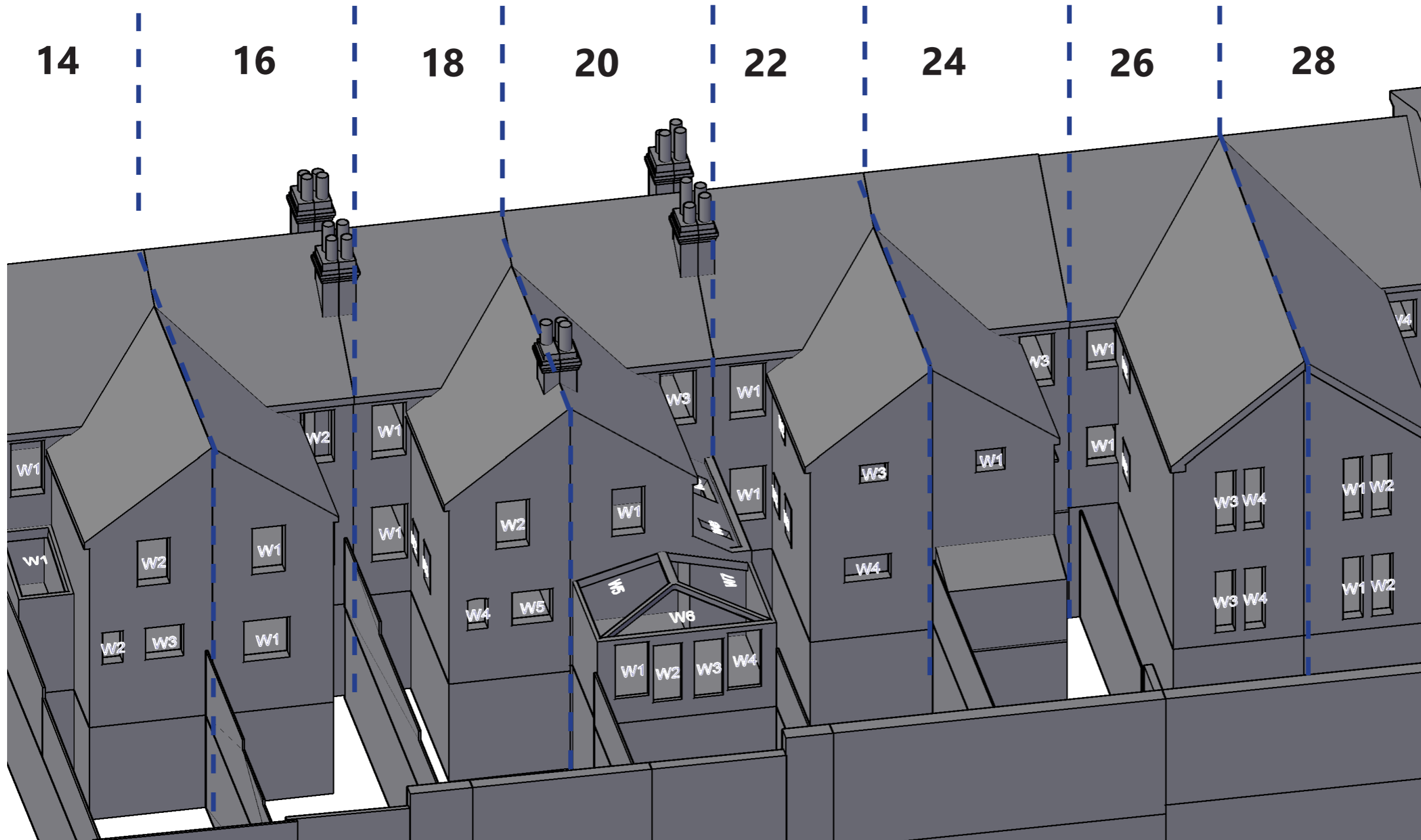


Sources of information

**Survey**  
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**Berkeley Homes Ltd**  
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 Received 21/01/2019

**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



Project River Gate, Vastern Road  
 Reading  
 RG1 8BU

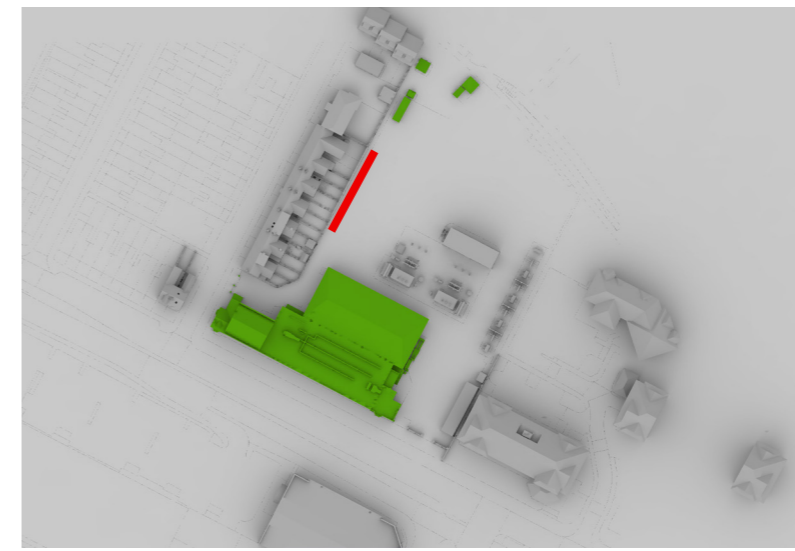
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 Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

Rel no. 01 Prefix DS01 Page no. WM03



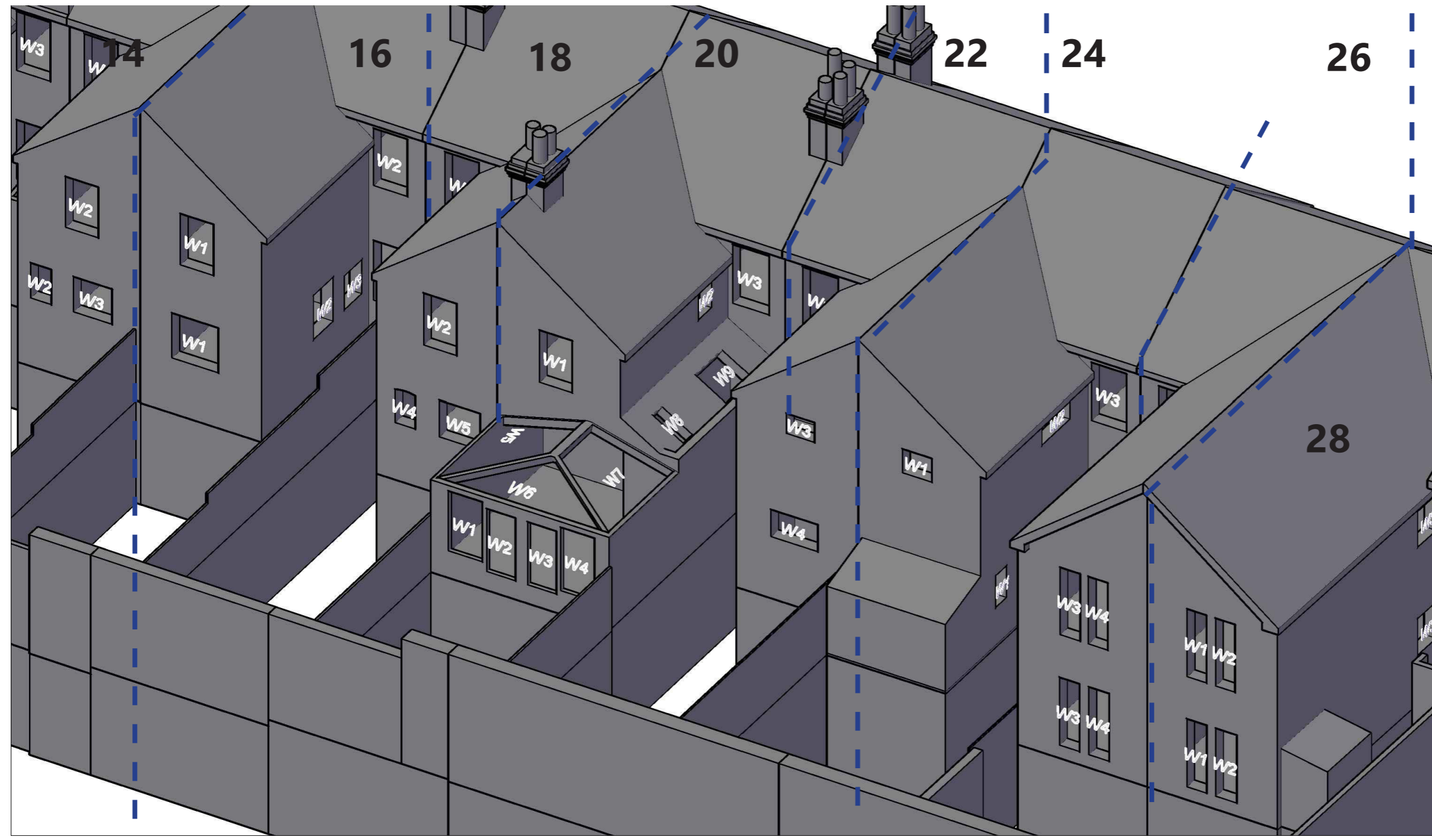


Sources of information

**Survey**  
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**Berkeley Homes Ltd**  
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 dwg  
 Received 21/01/2019

**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



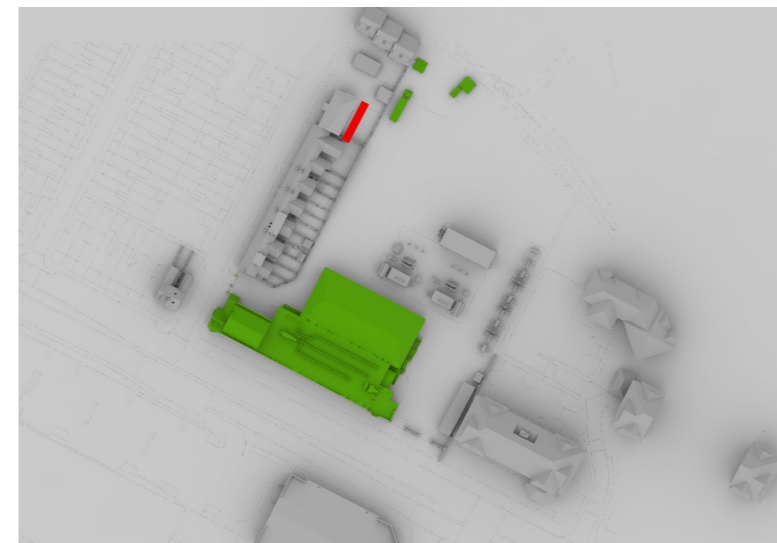
Project River Gate, Vastern Road  
 Reading  
 RG1 8BU

Title 14-28 Lynmouth road  
 Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

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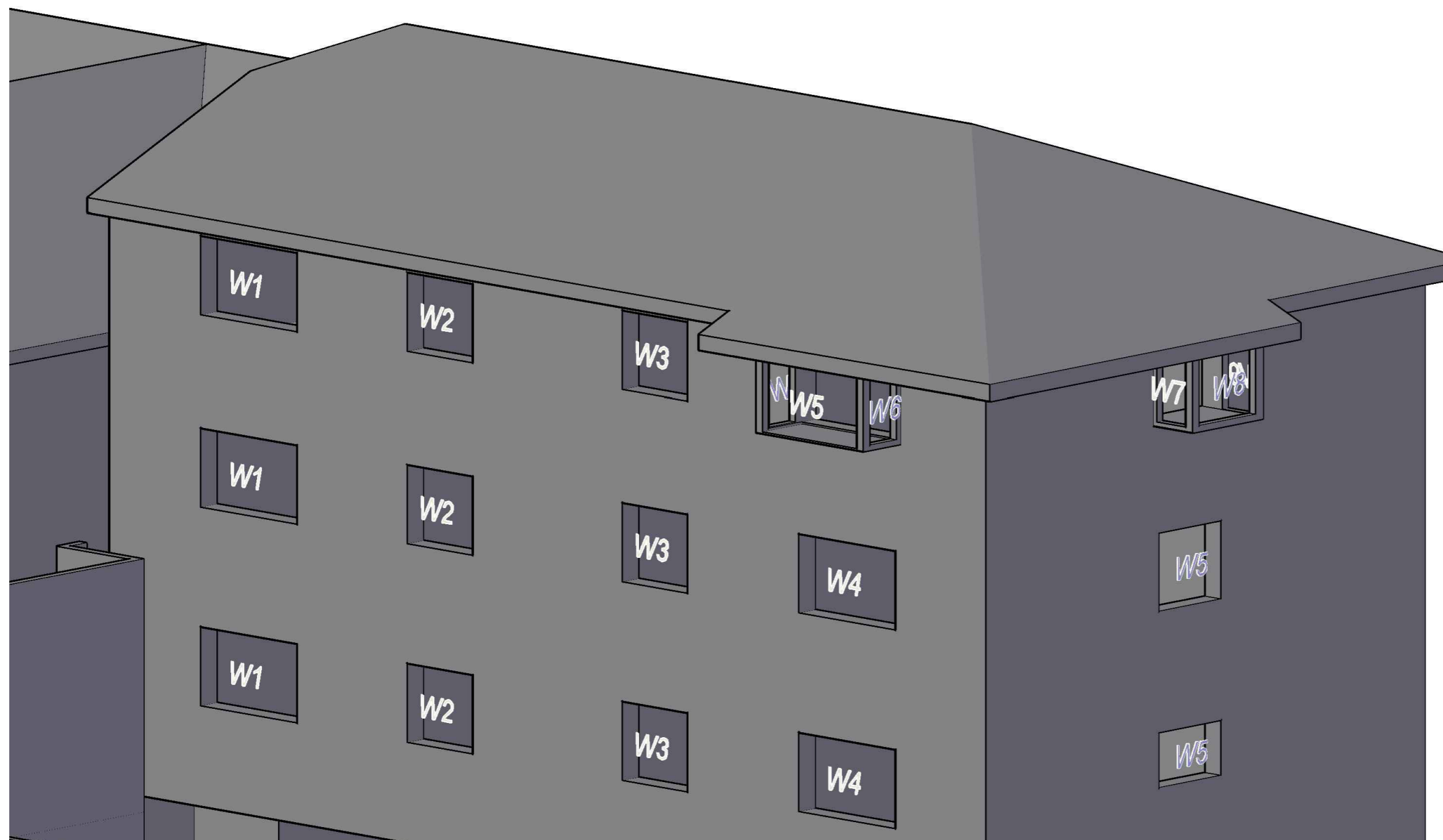


Sources of information

**Survey**  
 33440Asit01P00-3D.dwg  
 Received 29/01/2019

**Berkeley Homes Ltd**  
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 dwg  
 Received 21/01/2019

**EB7 Ltd**  
 Site Photographs  
 Ordnance Survey



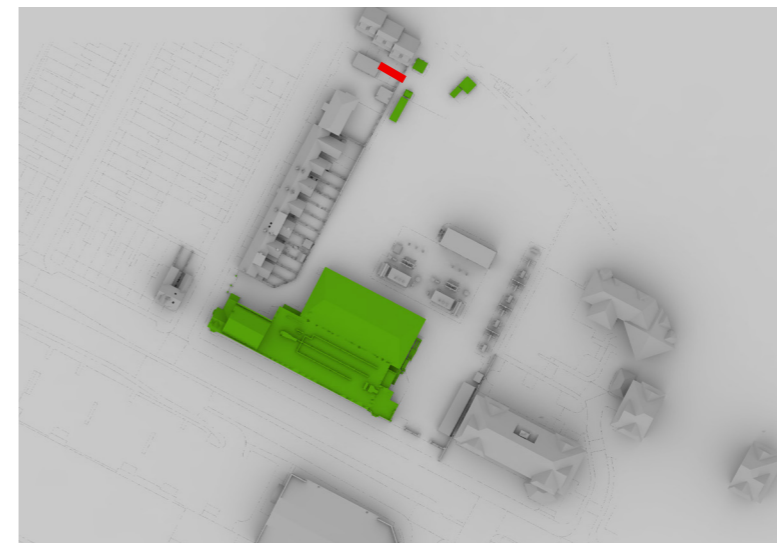
Project River Gate, Vastern Road  
 Reading  
 RG1 8BU

Title 7-12 Lynmouth Court  
 Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

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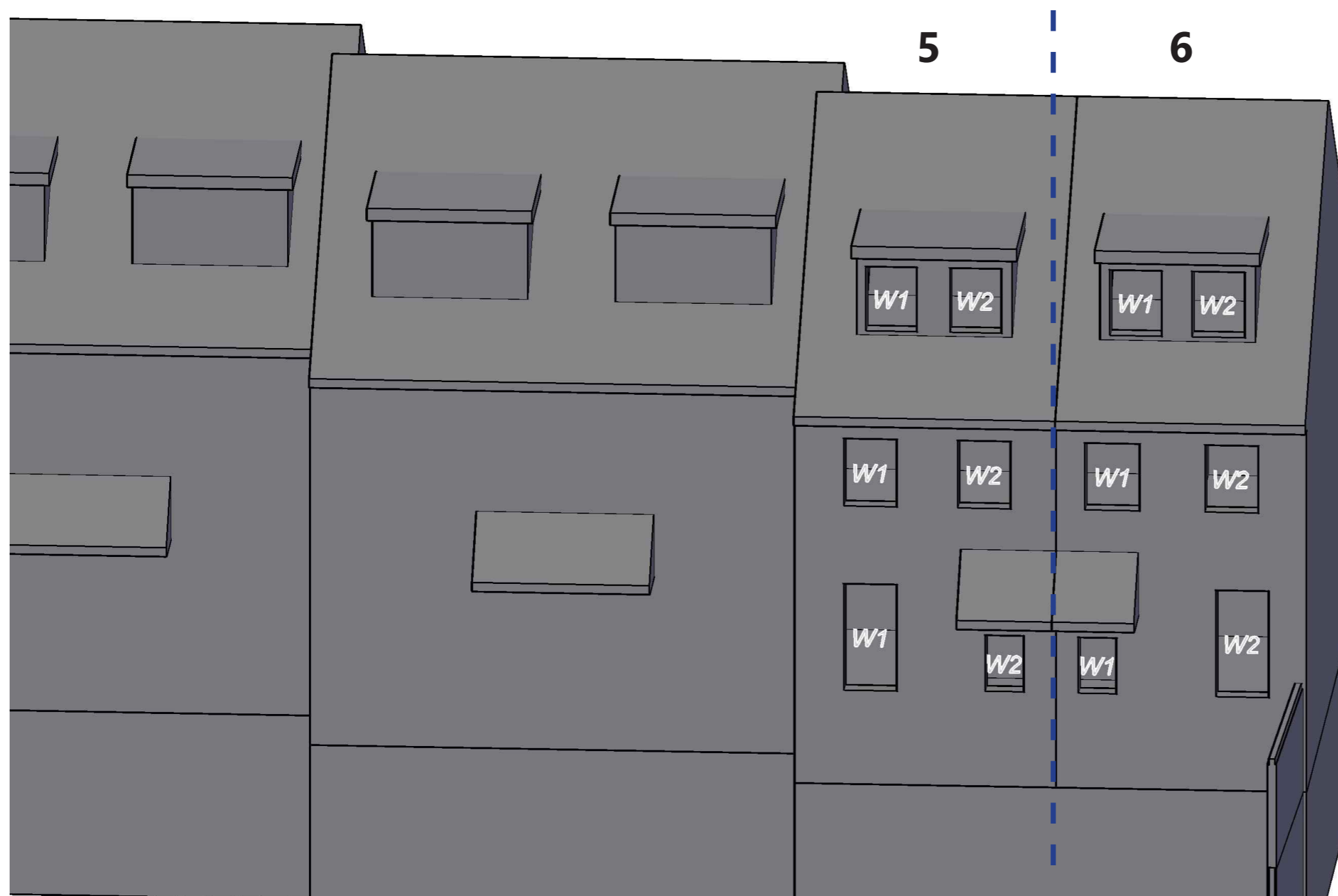


Sources of information

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Received 29/01/2019

**Berkeley Homes Ltd**  
33440-190121-A-99-Vastern Road-3D View.  
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Received 21/01/2019

**EB7 Ltd**  
Site Photographs  
Ordnance Survey



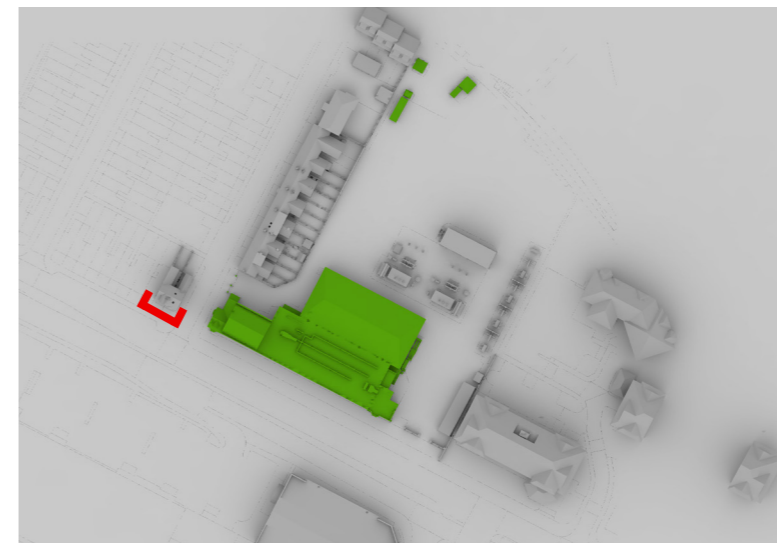
Project River Gate, Vastern Road  
Reading  
RG1 8BU

Title 5-6 Lynmouth Court  
Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

Rel no. 01 Prefix DS01 Page no. WM06



Sources of information

**Survey**  
33440Asit01P00-3D.dwg  
Received 29/01/2019

**Berkeley Homes Ltd**  
33440-190121-A-99-Vastern Road-3D View.  
dwg  
Received 21/01/2019

**EB7 Ltd**  
Site Photographs  
Ordnance Survey



Project River Gate, Vastern Road  
Reading  
RG1 8BU

Title 51 Vastern Road  
Window Map

Drawn MC Checked --

Date 14/03/2019 Project 3591

Rel no. 01 Prefix DS01 Page no. WM07



## Appendix 2

**Results of the daylighting / sunlighting assessment for surrounding properties**

Address	Room	Window	Room Use	Existing VSC	Proposed VSC	Loss	Loss %	Room Area	Existing NSC	Proposed NSC	Loss	Loss %	Existing ADF Window	Proposed ADF Window	Existing APSH Total	Proposed APSH Total	Total Retained	Winter Retained		
<b>2 Lynmouth Road</b>																				
Ground	R1	W1-L W1-U	Residential	0.5	0.1	0.4	82.7	78.1	54.0	21.6	32.4	60.0	0.0 0.2	0.0 0.1	1	1	0	0	0.0	0.0
Ground	R2	W2 W3	Residential	0.3 2.4	0.1 1.2	0.2 1.2	82.1 49.0	72.9	31.2	17.5	13.7	43.8	0.0 0.3	0.0 0.2	14	4	11	2	0.8	0.5
Ground	R3	W4 W5	Residential	18.5 29.9	9.6 23.5	8.8 6.4	47.8 21.4	45.0	44.3	44.0	0.4	0.8	0.6 1.9	0.4 1.6	65	11	36	2	0.6	0.2
First	R1	W1-L W1-U	Residential	28.6	21.9	6.7	23.5	65.2	64.5	60.1	4.4	6.8	0.0 1.5	0.0 1.3	53	16	34	4	0.6	0.3
First	R2	W2-L W2-U	Residential	34.3	26.0	8.3	24.1	120.1	117.4	55.7	61.7	52.5	0.1 0.6	0.0 0.5	60	17	41	2	0.7	0.1
<b>4 Lynmouth Road</b>																				
Ground	R1	W1 W2 W3	Kitchen	31.4 10.0 7.9	24.3 9.8 7.7	7.1 0.2 0.1	22.6 2.3 1.7	122.2	111.8	90.9	20.9	18.7	0.9 0.4 0.2	0.7 0.4 0.2	58	15	40	3	0.7	0.2
Ground	R2	W4-L W4-U	Dining Room	10.9	10.3	0.6	5.6	92.9	78.9	77.8	1.1	1.4	0.0 0.7	0.0 0.7	11	1	10	0	0.9	0.0
First	R2	W2-L W2-U	Bedroom	28.3	24.7	3.7	12.9	67.1	66.2	66.2	0.0	0.0	0.0 1.7	0.0 1.5	46	7	41	4	0.9	0.6
Second	R2	W2	Bedroom	37.8	30.0	7.8	20.5	156.5	146.0	145.9	0.1	0.1	1.4	1.1	66	23	52	10	0.8	0.4
<b>6 Lynmouth Road</b>																				
Ground	R1	W1 W2	Residential	31.8 31.6	24.6 24.3	7.3 7.3	22.8 23.1	40.8	39.9	39.9	0.0	0.0	1.0 0.6	0.8 1.4	58	16	41	6	0.7	0.4
Ground	R2	W3	Residential	31.2	24.5	6.7	21.5	63.0	60.0	59.1	0.9	1.5	1.2	1.0	58	16	42	7	0.7	0.4
First	R1	W1-L W1-U	Residential	36.0	27.5	8.4	23.4	120.4	117.7	87.5	30.3	25.7	0.0 0.9	0.0 0.7	63	20	48	10	0.8	0.5
Second	R1	W1	Residential	28.3	23.9	4.3	15.3	77.1	76.0	76.0	0.0	0.0	1.5	1.4	48	13	43	8	0.9	0.6

Address	Room	Window	Room Use	Existing VSC	Proposed VSC	Loss %	Loss %	Room Area	Existing NSC	Proposed NSC	Loss %	Loss %	Existing ADF Window	Proposed ADF Window	Existing APSH Total	Proposed APSH Total	Total Retained	Winter Retained						
<b>8 Lynmouth Road</b>																								
Ground	R1	W1-L	Residential	30.4	23.5	7.0	22.9						0.3	0.3										
		W1-U											4.4	3.6										
		W2		69.5	64.0	5.5	7.9						4.7	4.5										
		W3		70.7	65.3	5.4	7.6						4.5	4.2										
		W4		73.0	67.7	5.3	7.2						4.8	4.6										
		W5-L		21.4	20.7	0.7	3.4							0.1	0.1									
		W5-U												1.2	1.1									
		W6-L		20.7	19.6	1.1	5.1							0.1	0.1									
		W6-U												0.8	0.7									
		W7-L		18.9	17.6	1.3	6.6							0.1	0.1									
								51.0	51.0	51.0	0.0	0.0	1.1	22.1	1.0	20.3	70	20	51	8	0.7	0.4		
Ground	R2	W8	Residential	30.6	22.5	8.0	26.3						1.0	0.8										
		W9		41.0	39.6	1.3	3.2	62.2	62.2	62.2	0.0	0.0	7.6	8.6	7.4	8.2	43	10	29	3	0.7	0.3		
First	R1	W1-L	Residential	36.3	27.8	8.6	23.6						0.0	0.0										
		W1-U											61.5	59.0	58.7	0.3	0.5	1.5	1.5	1.2	1.2	64	21	48
First	R2	W3-L	Residential	28.4	25.0	3.4	12.0						0.0	0.0										
		W3-U											67.1	66.0	66.0	0.0	0.0	1.5	1.6	1.4	1.4	44	6	39
First	R3	W2	Residential	16.0	14.9	1.1	7.1	37.1	23.6	23.6	0.0	0.1	0.5	0.5	0.5	0.5	N/F	N/F	N/F	N/F	N/F	N/F	N/F	N/F
<b>10 Lynmouth Road</b>																								
Ground	R1	W1-L	Living Room	12.0	10.6	1.4	11.7						0.0	0.0										
		W1-U											105.0	59.5	51.8	7.7	12.9	0.5	0.5	0.5	0.5	24	4	22
Ground	R2	W2	Kitchen	11.7	10.1	1.7	14.1						0.6	0.6										
		W3		34.8	25.9	8.9	25.5							0.5	0.4									
		W4-L		33.1	25.2	7.9	23.8							0.0	0.0									
		W4-U												0.4	0.3									
		W5		35.5	26.4	9.1	25.7							0.4	0.3									
		W6-L		32.4	25.0	7.4	22.7							0.0	0.0									
		W6-U												0.4	0.3									
		W7		35.1	26.0	9.1	25.9	104.2	103.8	101.0	2.8	2.7	0.5	2.9	0.4	2.4	69	22	50	10	0.7	0.5		
First	R1	W1	Bedroom	26.7	23.1	3.6	13.5	82.8	76.2	73.1	3.1	4.1	1.3	1.3	1.2	1.2	48	13	42	8	0.9	0.6		
Second	R1	W1	Bedroom	37.0	30.8	6.2	16.7						1.2	1.1										
		W3		85.1	84.8	0.3	0.4							0.9	0.9									





Address	Room	Window	Room Use	Existing VSC	Proposed VSC	Loss	Loss %	Room Area	Existing NSC	Proposed NSC	Loss	Loss %	Existing ADF Window	Existing ADF Total	Proposed ADF Window	Proposed ADF Total	Existing APSH Total	Existing APSH Winter	Proposed APSH Total	Proposed APSH Winter	Total Retained	Winter Retained	
		W5-L		29.5	29.5	0.0	0.0						0.0	0.0									
		W5-U											0.4	0.4									
		W6-L		31.4	31.4	0.0	0.0						0.0	0.0									
		W6-U											0.8	0.8									
		W7-L		28.3	28.3	0.1	0.2						0.0	0.0									
		W7-U						245.3	202.0	199.6	2.4	1.2	0.4	2.0	0.4	2.0	50	10	46	8	0.9	0.8	
First	R1	W1-L	Bedroom	37.7	28.0	9.7	25.8						0.0	0.0									
		W1-U						112.9	109.8	92.6	17.2	15.7	1.1	1.1	0.8	0.9	66	23	52	14	0.8	0.6	
<b>18 Lynmouth Road</b>																							
Ground	R1	W1-L	Residential	13.5	10.7	2.8	20.6						0.0	0.0									
		W1-U						62.7	58.9	58.9	0.0	0.0	1.0	1.0	0.9	0.9	25	5	22	2	0.9	0.4	
Ground	R2	W2	Residential	8.2	7.4	0.8	9.7						0.2	0.2									
		W3		12.2	10.6	1.6	13.1						0.4	0.3									
		W4		35.2	25.9	9.3	26.3						0.4	0.3									
		W5		32.6	25.4	7.3	22.2	127.6	124.8	115.7	9.1	7.3	0.8	1.7	0.7	1.5	66	22	51	13	0.8	0.6	
First	R1	W1-L	Residential	26.7	23.7	3.0	11.2						0.0	0.0									
		W1-U						67.0	66.2	66.2	0.0	0.0	1.4	1.4	1.3	1.3	49	14	43	10	0.9	0.7	
First	R2	W2-L	Residential	38.0	28.1	9.9	26.1						0.1	0.1									
		W2-U						63.8	60.4	60.1	0.3	0.5	1.4	1.4	1.1	1.1	65	22	52	14	0.8	0.6	
<b>20 Lynmouth Road</b>																							
Ground	R1	W1-L	Kitchen	34.0	24.8	9.1	26.9						0.0	0.0									
		W1-U											0.9	0.7									
		W2-L		33.1	24.7	8.4	25.4						0.0	0.0									
		W2-U											0.6	0.5									
		W3-L		32.8	24.7	8.1	24.6						0.0	0.0									
		W3-U											0.6	0.5									
		W4-L		32.9	24.7	8.2	24.9						0.0	0.0									
		W4-U											0.9	0.7									
		W5		64.4	60.9	3.5	5.4						6.4	6.1									
		W6		88.8	81.1	7.7	8.7						5.0	4.8									
		W7		80.5	76.5	3.9	4.9	145.6	145.6	145.6	0.0	0.0	7.4	22.0	7.2	20.5	79	23	64	15	0.8	0.7	
First	R1	W1-L	Bedroom	38.1	28.3	9.8	25.7						0.0	0.0									
		W1-U						77.7	73.9	63.7	10.2	13.8	1.2	1.2	0.9	1.0	65	22	53	17	0.8	0.8	

Address	Room	Window	Room Use	Existing	Proposed	Loss	Loss	Room Area	Existing	Proposed	Loss	Loss	Existing ADF		Proposed ADF		Existing APSH		Proposed APSH		Total Retained	Winter Retained		
				VSC	VSC		%		NSC	NSC		%	Window	Total	Window	Total	Total	Winter	Total	Winter				
First	R3	W3-L	Bedroom	27.5	24.1	3.4	12.4	96.4	92.4	91.4	1.0	1.1	0.0	0.0	41	5	37	3	0.9	0.6				
		W3-U											1.3	1.3							1.2	1.2		
<b>22 Lynmouth Road</b>																								
Ground	R1	W1-L	Residential	12.1	11.1	1.1	8.7	115.7	76.1	70.6	5.4	7.1	0.0	0.0	23	3	21	1	0.9	0.3				
		W1-U											0.6	0.6							0.5	0.6		
Ground	R2	W2	Residential	8.3	8.0	0.4	4.4	75.7	45.1	42.0	3.1	7.0	0.3	0.3	31	5	30	4	1.0	0.8				
		W3											12.2	11.6							0.6	5.0	0.5	0.8
Ground	R3	W4	Residential	35.2	25.9	9.3	26.3	48.7	43.5	43.5	0.0	0.0	1.3	1.3	1.0	1.0	65	22	48	13	0.7	0.6		
First	R1	W1-L	Residential	27.5	24.7	2.8	10.3	115.7	102.5	98.6	3.9	3.8	0.0	0.0	47	12	43	10	0.9	0.8				
		W1-U											0.9	0.9							0.8	0.9		
First	R2	W2-L	Residential	21.1	19.8	1.3	5.9	75.7	15.8	10.5	5.3	33.7	0.0	0.0	48	13	46	11	1.0	0.8				
		W2-U											0.2	0.2							0.2	0.2		
First	R3	W3	Residential	38.0	28.4	9.6	25.2	48.7	43.6	41.5	2.1	4.8	0.6	0.6	0.5	0.5	66	23	55	17	0.8	0.7		
<b>24 Lynmouth Road</b>																								
Ground	R1	W1-L	Residential	8.7	7.7	1.0	11.5	121.6	14.0	12.1	1.9	13.4	0.0	0.0	N/F	N/F	N/F	N/F	N/F	N/F				
		W1-U											0.1	0.1										
		W2-L											7.0	6.4							0.6	8.6	0.0	0.0
		W2-U											0.3	0.5							0.3	0.5		
Ground	R2	W3	Residential	1.2	0.8	0.4	35.0	48.1	0.5	0.5	0.0	0.0	0.1	0.1	0.1	0.1	N/F	N/F	N/F	N/F	N/F	N/F		
Ground	R3	W4-L	Residential	4.8	2.7	2.1	43.7	67.1	58.6	28.5	30.2	51.4	0.0	0.0	7	2	4	0	0.6	0.0				
		W4-U											0.4	0.4							0.2	0.2		
First	R1	W1	Residential	37.3	28.1	9.2	24.8	129.4	123.7	85.0	38.7	31.3	0.4	0.4	0.3	0.3	65	23	55	17	0.8	0.7		
First	R3	W3-L	Residential	24.0	21.1	2.9	12.3	67.1	66.3	63.9	2.4	3.6	0.0	0.0	34	3	30	1	0.9	0.3				
		W3-U											1.3	1.3							1.2	1.2		
<b>26 Lynmouth Road</b>																								
Ground	R1	W1	Residential	11.8	10.2	1.6	13.6	64.9	55.4	49.6	5.8	10.5	0.6	0.6	0.6	0.6	21	3	20	2	1.0	0.7		
Ground	R2	W2	Residential	8.8	8.2	0.6	6.8	73.5	18.3	18.3	0.0	0.1	0.5	0.5	0.5	0.5	25	4	24	3	1.0	0.8		

Address	Room	Window	Room Use	Existing VSC	Proposed VSC	Loss	Loss %	Room Area	Existing NSC	Proposed NSC	Loss	Loss %	Existing ADF Window	Proposed ADF Window	Existing APSH Total	Proposed APSH Total	Total Retained	Winter Retained				
Ground	R3	W3-L	Residential	32.5	24.1	8.4	25.9	107.4	103.9	77.1	26.9	25.8	0.0	0.0	64	21	51	15	0.8	0.7		
		W3-U		32.4	24.0	8.4	25.9						0.5	0.4								
		W4-L											0.0	0.0								
		W4-U											0.6	1.2							0.4	1.0
First	R1	W1	Residential	20.4	18.5	1.9	9.1	66.8	65.2	62.5	2.7	4.2	0.9	0.9	0.8	0.8	41	13	39	11	1.0	0.8
First	R2	W2	Residential	24.1	23.4	0.7	3.0	73.5	59.5	59.5	0.0	0.0	0.9	0.9	0.8	0.8	55	16	54	15	1.0	0.9
First	R3	W3-L	Residential	38.0	26.8	11.2	29.4	107.4	103.5	85.5	18.0	17.4	0.0	0.0	63	22	50	16	0.8	0.7		
		W3-U		38.1	26.8	11.3	29.7						0.6	0.5								
		W4-L											0.0	0.0								
		W4-U											0.6	1.4							0.5	1.0
<b>28 Lynmouth Road</b>																						
Ground	R1	W1-L	Residential	31.7	23.6	8.1	25.5	109.3	105.7	71.3	34.4	32.5	0.0	0.0	63	21	48	13	0.8	0.6		
		W1-U		31.3	23.4	7.9	25.1						0.5	0.4								
		W2-L											0.0	0.0								
		W2-U											0.6	1.2							0.4	0.9
Ground	R2	W3	Residential	3.5	2.7	0.8	21.7	76.2	5.9	5.6	0.3	4.9	0.2	0.2	0.2	0.2	N/F	N/F	N/F	N/F	N/F	N/F
Ground	R3	W4	Residential	7.8	5.6	2.2	28.4	66.6	58.9	44.7	14.2	24.1	0.5	0.5	0.4	0.4	11	2	7	0	0.6	0.0
First	R1	W1-L	Residential	38.1	26.3	11.8	30.9	109.3	105.3	83.0	22.3	21.1	0.0	0.0	64	21	49	13	0.8	0.6		
		W1-U		38.1	26.1	12.0	31.4						0.6	0.5								
		W2-L											0.0	0.0								
		W2-U											0.6	1.3							0.5	1.0
First	R2	W3	Residential	5.4	4.0	1.4	25.7	76.3	6.8	6.7	0.1	1.5	0.2	0.2	0.2	0.2	N/F	N/F	N/F	N/F	N/F	N/F
First	R3	W4	Residential	12.8	10.0	2.8	21.6	66.6	61.0	46.7	14.3	23.4	0.7	0.7	0.6	0.6	17	2	13	0	0.8	0.0
<b>5 Lynmouth Court</b>																						
Ground	R1	W1-L	Residential	35.1	30.4	4.7	13.3	100.5	83.9	83.5	0.4	0.5	0.1	0.1	73	24	61	18	0.8	0.8		
		W1-U											1.1	1.2							1.0	1.1
First	R1	W1-L	Residential	36.0	30.6	5.5	15.1	100.5	83.9	83.3	0.6	0.7	0.0	0.0	74	27	62	19	0.8	0.7		

Address	Room	Window	Room Use	Existing	Proposed	Loss	Loss	Room Area	Existing	Proposed	Loss	Loss	Existing ADF		Proposed ADF		Existing APSH		Proposed APSH		Total Retained	Winter Retained
				VSC	VSC	%	%		NSC	NSC	%	%	Window	Total	Window	Total	Total	Winter	Total	Winter		
First	R2	W2-L	Residential	35.9	29.7	6.2	17.3	111.4	92.8	92.4	0.4	0.5	0.0	0.0	74	27	60	18	0.8	0.7		
		W2-U											0.8	0.8							0.7	0.7
Second	R1	W1-L	Residential	38.3	32.9	5.4	14.1	133.7	127.6	126.6	0.9	0.7	0.0	0.0	82	28	67	20	0.8	0.7		
		W1-U											0.6	0.6								
		W2-L											0.0	0.0								
		W2-U											0.6	1.4							0.6	1.2
<b>6 Lynmouth Court</b>																						
Ground	R2	W2-L	Residential	35.7	25.8	9.9	27.7	100.5	83.9	83.1	0.8	0.9	0.1	0.1	76	27	44	13	0.6	0.5		
		W2-U											1.1	1.2							0.9	1.0
First	R1	W1-L	Residential	35.9	28.7	7.3	20.3	111.4	92.7	92.4	0.3	0.4	0.0	0.0	73	27	56	16	0.8	0.6		
		W1-U											0.8	0.8							0.7	0.7
First	R2	W2-L	Residential	36.0	27.2	8.8	24.5	100.5	83.9	83.8	0.1	0.1	0.0	0.0	75	27	51	15	0.7	0.6		
		W2-U											0.8	0.9							0.7	0.7
Second	R1	W1-L	Residential	38.2	30.8	7.4	19.3	133.7	127.5	127.1	0.4	0.3	0.0	0.0	81	28	61	18	0.8	0.6		
		W1-U											0.7	0.6								
		W2-L											0.0	0.0								
		W2-U											0.7	1.4							0.6	1.2
<b>7-12 Lynmouth Court</b>																						
Ground	R1	W1	Residential	29.6	19.6	10.0	33.7	155.8	151.9	96.8	55.0	36.2	1.3	1.3	1.0	1.0	44	3	32	0	0.7	0.0
Ground	R2	W2	Residential	35.2	22.8	12.4	35.1	149.2	144.2	87.8	56.4	39.1	1.0	1.0	0.8	0.8	59	17	43	11	0.7	0.6
Ground	R3	W3	Residential	36.0	22.3	13.7	38.0	149.2	144.3	80.4	63.9	44.3	1.1	1.1	0.7	0.7	61	19	42	12	0.7	0.6
Ground	R4	W4	Residential	35.7	21.6	14.1	39.5	183.7	182.5	180.5	2.0	1.1	1.4	0.9	60	19	40	10	0.7	0.5		
		W5		34.1	30.2	4.0	11.7						0.6	2.0							0.5	1.5
First	R1	W1	Residential	36.3	25.4	10.9	30.1	155.8	154.1	102.2	51.9	33.7	1.5	1.5	1.2	1.2	58	17	47	13	0.8	0.8
First	R2	W2	Residential	37.3	25.1	12.2	32.7	149.2	145.7	87.4	58.3	40.0	1.1	1.1	0.8	0.8	59	19	46	15	0.8	0.8
First	R3	W3	Residential	37.1	24.1	13.1	35.2	149.2	145.6	78.7	66.9	45.9	1.1	1.1	0.8	0.8	61	21	45	16	0.7	0.8
First	R4	W4	Residential	35.5	21.8	13.8	38.7	183.7	182.5	182.5	0.0	0.0	1.4	0.9	60	21	42	15	0.7	0.7		
		W5		34.1	30.3	3.9	11.3						0.9	2.3							0.8	1.8

Address	Room	Window	Room Use	Existing	Proposed	Loss	Loss	Room Area	Existing	Proposed	Loss	Loss	Existing ADF		Proposed ADF		Existing APSH		Proposed APSH		Total Retained	Winter Retained	
				VSC	VSC	%	%		NSC	NSC	%	%	Window	Total	Window	Total	Total	Winter	Total	Winter			
Second	R1	W1-L W1-U	Residential	30.2	20.1	10.1	33.5	155.8	153.8	96.6	57.2	37.2	0.0	1.0	0.0	0.7	0.8	47	17	37	14	0.8	0.8
Second	R2	W2-L W2-U	Residential	30.3	19.5	10.8	35.7	149.2	145.5	80.7	64.8	44.6	0.0	0.7	0.0	0.5	0.5	47	17	37	14	0.8	0.8
Second	R3	W3-L W3-U	Residential	29.9	18.4	11.5	38.5	149.2	144.0	70.9	73.0	50.7	0.0	0.7	0.0	0.5	0.5	47	17	34	14	0.7	0.8
Second	R4	W4-L W4-U W5-L W5-U W6-L W6-U W7-L W7-U W8-L W8-U W9-L W9-U	Residential	9.5 32.5 6.7 6.6 30.8 13.9	7.1 19.9 1.9 2.5 27.7 13.9	2.5 12.6 4.8 4.1 3.1 0.0	25.7 38.7 72.0 62.7 10.1 0.0	183.7	181.6	180.6	1.0	0.6	0.0 0.1 0.0 0.7 0.0 0.1 0.0 0.0 0.5 0.0	0.1	0.0 0.1 0.0 0.5 0.0	0.1 0.1 0.0 0.5 0.0	1.3	54	20	40	17	0.7	0.9
<b>51 Vastern Road</b>																							
Ground	R1	W1	Dining Room	12.3	12.3	0.0	0.0	91.9	79.8	79.8	0.0	0.0	0.7	0.7	0.7	0.7	N/F	N/F	N/F	N/F	N/F	N/F	
Ground	R2	W2 W3-L W3-U W4 W5 W6-L W6-U W7-L W7-U	Kitchen	12.8 14.4 31.7 32.3 30.9	12.8 14.4 31.3 31.9 21.4	0.0 0.0 0.4 0.4 9.5	0.0 0.0 1.3 1.2 30.6	203.5	202.0	202.0	0.0	0.0	0.1 0.0 0.4 0.2 0.2 0.0 0.7 0.0	0.1	0.1 0.0 0.4 0.2 0.2 0.0 0.6 0.0	0.5 2.1	69	19	53	15	0.8	0.8	
Ground	R4	W11 W12 W13 W14 W15	Living Room	31.7 32.2 31.9 7.9 29.5	22.5 23.4 28.4 7.6 29.5	9.2 8.8 3.5 0.3 0.0	29.0 27.3 11.0 3.8 0.1	182.7	182.6	182.4	0.1	0.1	0.8 0.9 0.3 0.1 2.9	0.6 0.7 0.3 0.1	4.6	94	28	80	28	0.9	1.0		





## Appendix 3

**Drawings and results of the internal daylighting / sunlighting assessment**